

A Watra E-trubu (The Water Gets Muddy): Creole Genesis and the Sranan Verbal System¹

Abstract

Creole genesis is a process subject to some controversy. This thesis examines three divergent models of creole genesis against two areas in the morphosyntax of Sranan, a creole language of Surinam.

Bickerton (1984) argues that children's innate linguistic knowledge (the language bioprogram) is responsible for the emergence of creoles from the linguistic chaos that precedes them. Mufwene (2010) disputes this, claiming that creoles evolve directly from the European languages from which they derive their vocabulary. Siegel (2008), in contrast, traces the origins of creole syntax to the various languages native to members of the communities in which creoles emerge.

To test these three theories, I compare and evaluate their predictions about Sranan's tense, mood, and aspect particles, and about its serial verb constructions. Both areas of Sranan grammar are claimed by Bickerton (1984) to reflect the syntactic universals built into his language bioprogram. Both areas could also be argued to support Siegel's model of substrate influence. The Gbe languages, which were the primary substrates of Sranan, have serial verb constructions somewhat like Sranan's. Their TMA marking system has also been argued to be mirrored in Sranan (Winford and Migge, 2007).

By applying Bickerton's (1984) and Siegel's (2008) theories to Sranan, I show that many of Bickerton's claims may need to be reexamined. Siegel holds up better to scrutiny, but it may be that he is harder to falsify because of the complexity, rather than the accuracy, of his model. Both theories offer reasonable explanations for the phenomena examined.

1. Introduction

There is little consensus on the process by which creole languages emerge. A few basic facts, however, are uncontroversial. Creoles are *contact languages*, meaning they only come into being when populations with different mother tongues find themselves in long-term, intensive interaction. The way they emerge is unlike the gradual, continuous evolution of normal languages---instead, it is strikingly abrupt, occurring over generations, not millenia (Muysken and Smith 1995:4). Finally, there are some syntactic and morphological similarities among geographically far-flung creoles. Beyond these basics, different models of creole genesis are sharply divergent. Each has different answers for

¹ Many thanks to my thesis advisor Ted Fernald for his advice, support, and useful metaphor about river rafting, and to Zack Weiner for his insightful comments and solute/solution metaphor. Thanks also to Alexia Fawcett for her patience and thoughtfulness in reading and peer-editing this thesis, and to Allyson Bunch both for her helpful peer-edits and for the tolerance and emotional support she gave me throughout the writing process. All mistakes are my own.

the questions of how creoles emerge, how rapid their evolution truly is, and why they resemble each other syntactically.

In this thesis I examine three such models of creole genesis. Bickerton's (1984) Language Bioprogram treats creoles as languages without ancestors. He claims their syntax is built from scratch by infants trying to acquire -a first language. The pre-creole linguistic environment is too chaotic to provide useful input, so they fall back on innate linguistic knowledge hardwired into all human brains to create the new creole.

Mufwene (2010), in contrast, argues that creole languages evolve out of their *lexifiers*, the European languages from which they take most of their vocabulary. He sees creole evolution as qualitatively the same as normal language evolution. It differs only in that it is accelerated by the presence of numerous non-native speakers, who introduce changes into the language accidentally as they acquire it.

Unlike Mufwene, Siegel (2008) agrees with Bickerton that creoles do not descend directly from any one language, instead being new-created by the communities in which they emerge. However, he argues that features from the diverse native languages those communities spoke before the creole's existence (the creole's *substrates*) are transferred into the creole, shaping its syntax. He outlines the constraints that govern this process, and the stages by which it unfolds.

These three theories make very different predictions. I explore and contrast them by applying them to areas of the verbal syntax of Sranan, a creole of Suriname. Sranan is one of the languages Bickerton claims provides the strongest evidence for his language bioprogram hypothesis, because of how drastically it differs from its lexifier (Bickerton 1984:177). It offers an unusually good opportunity to test Siegel's hypothesis as well,

since the substrates of Sranan (the Kikongo and Gbe language clusters) are better documented than those of the majority of creoles (Arends et al 1995:101).

Within the domain of verbal syntax, I examine Sranan's tense, mood, and aspect (TMA) particles, and its serial verb constructions. Bickerton's language bioprogram makes very specific predictions about what TMA particles should be present in a creole like Sranan, and how they should behave semantically (Bickerton 1984:182). A good case can also be made that Sranan's TMA particles reflect substrate influence of the kind hypothesized by Siegel (Winford and Migge 2007). Serial verb constructions, also, are cited both as evidence supporting Bickerton's bioprogram (Bickerton 1984:175) and as evidence of substrate influence (McWhorter 1992).

First I discuss the aspects of pidgins and creoles that are most fundamental and uncontroversial. Then I lay out each of the three theoretical stances on creole genesis that I intend to evaluate. Finally, I compare the predictions of Bickerton and Siegel against the findings of more empirically motivated, bottom-up studies.

Examples of such studies are Winford and Migge (2007), who describe Sranan TMA marking and compare it to TMA in Gbe languages, and Sebba (1987) who closely analyzes Sranan SVCs. By weighing their observations against divergent theories of creole genesis, I attempt to shed light on the strengths and weaknesses of the opposing arguments, and on why controversy still exists.

2. Background on Pidgin and Creole Languages

2.1. Creole Genesis

Normal language evolutions is driven by the gradual accumulation of internally motivated changes to phonology, morphology, syntax, and so on. The language is passed

smoothly and almost completely from one generation to the next, like the genetic code of a species. Small alterations and mistakes pile up, like genetic mutations. There is no date at which Late Latin suddenly became Old French, just as there is no date at which one species suddenly transforms into another. In language contact situations, the species analogy breaks down. It cannot accommodate the complexity of language transmission; second-language acquisition, which is a much messier, more varied, and less perfect process than first-language acquisition, starts playing a crucial role on a community scale. Suddenly, contact languages emerge. Different types of contact situation produce different types of contact language. What type of language arises is shaped by the social hierarchies, demographics, and population mobility of that place and time, along with many other factors.

Contact language types are varied, but the only two of relevance here are *pidgins* and *creoles*. A pidgin has no native speakers, but rather is an auxiliary language used between people who have no natural language in common. Because it isn't a natural language, its syntax is rudimentary and doesn't conform to principles of Universal Grammar. A pidgin has no consistent way of marking case, possession, tense, mood, aspect, etc. It has no system for structuring sentences with embedded clauses. (Bickerton 1984:172) When it first develops, it is very rudimentary, and is best suited for economic transactions or other simple uses. If it becomes the language of a community, it will expand its vocabulary and grammar, acquire native speakers, and become a creole (Bickerton 1984:173). Both language types emerged in the colonial era (1500-1900) as the result of the extreme power gradients and population disturbances characteristic of colonial societies. Colonizers speaking English, French, Spanish, Dutch, or Portuguese

transmitted their languages to populations of slaves or hired laborers whose native languages were diverse and mutually unintelligible. The workers acquired, or partially acquired, these colonial languages by necessity. They were the languages of economic power, and in the case of slave-worked plantations, of absolute power. There was also no other shared language in these colonial communities. However, the varieties that emerged as a result of this partial acquisition, whether pidgins or creoles, were so different from the original target languages as to no longer be classifiable as variants of the same language (Muysken and Smith 1995:4). The transformations that occurred from the colonial languages to the pidgins and creoles – particularly the creoles – will be discussed later.

Often a creole is seen as a broken or debased form of the lexifier. It looks somewhat like English, or French, or whatever the lexifier happens to be. But, as stated above, it is no longer the same language: it is mutually unintelligible with its lexifier, or barely intelligible, and has a distinct grammar of its own. Its phonology tends to be very divergent from that of its lexifier. The differences are too large to be accounted for by language change of the normal kind and at the normal pace (Muysken and Smith 1995:4).

2.2. Atlantic vs. Pacific Creoles

Within creole languages, two groups can be clearly distinguished: Atlantic and Pacific creoles (Besten et al 1995:89). The plantations of the Atlantic region (mostly consisting of the Caribbean and West Africa) were worked by slaves from West Africa. In the Pacific and Indian Ocean region, plantations were worked by indentured workers from Asia and South West Pacific (Arends 1995:15). The Pacific was colonized later, and its creoles are correspondingly younger. Because of their more modern origins, Pacific

creoles are known to have evolved from expanded pidgins based on written evidence and, in Hawaiian Creole's case, living speakers of the pidgin that preceded the creole (Siegel 2008: 59). In contrast, Atlantic creoles are merely hypothesized to have had pidgin predecessors, based in part on parallels with the Pacific. They may, however, have had different origins (Mufwene 2010: 372). Socio-demographic differences between plantations of the two regions certainly had an effect on creole genesis.

Atlantic creoles, as has been said, emerged among populations of West African slaves (Arends 1995:15). These slaves spoke many relatively small, mutually unintelligible languages (Arends et al 1995:101) and had no choice in their destinations – that is, plantation communities were entirely arbitrary, not self-selecting, and drew from a large pool of linguistically distinct groups. These factors made the development of a new community language more necessary. If it indeed began as a pidgin, it soon became a creole.

Access to the lexifier on plantations in the Atlantic region was limited: ratios between masters and slaves could be lower than 1:50 (Arends 1995:19). Lexifier access was often indirect – black overseers mediated between white managers and field slaves (Arends 1995:19) meaning that most field slaves had little contact with native speakers of the lexifier. Meanwhile, newly imported slaves were trained in their new duties, and exposed to the plantation language, by another, more experienced slave in a process called 'seasoning' (Arends 1995:21). The life expectancy on arrival was low – 5-10 years during the first 50 years of the plantation phase in the case of Suriname, where several creoles emerged (Arends 1995:17). Not only did new arrivals die quickly, many more men than women were imported. This meant that native-born slaves were few, and most

learned the lexifier from a slave who'd learned it himself as a second language (Arends 1995:17)

The situation was somewhat different in the Pacific. Indentured workers, not being literally abducted and hauled off in chains, had much more ability to self-select their communities, despite the limits imposed by narrow economic straits (Mufwene 2010:372). Although Mufwene does not mention it, another factor may have influenced the formation of these linguistically homogenous communities: Pacific plantation workers came from larger cultural and linguistic regions than West African slaves had. It presumably was easier to find fellow-workers from China, Japan, or the Philippines (Arends 1995:15), than to find fellow Xelagbe speakers once removed from Africa. This meant that plantations on, for example, Hawaii, contained many small worker communities of different ethnicities, self-segregated from each other. For communication with managers and between ethnic groups, a pidgin alone sufficed. A creole only emerged later, when these groups all moved into cities and began to intermingle (Siegel 2008: 46).

2.3. Commonalities Among Creole Languages

Although the substrate languages and typical sociohistories of creoles from the two regions are different, and much variety exists even within each region, creole languages have certain traits in common.

For example, word order is generally SVO. This makes sense, considering the morphosyntax is very isolating, with case shown only by word order. SVO word order means that subject and object (with their modifiers) are separated by the verb, and therefore most easily distinguishable despite no differentiated case marking. Isolating

morphosyntax extends to the verb as well: tense, mood and aspect are usually indicated by preverbal particles rather than affixes. When the lexifier is English, which itself has somewhat isolating syntax, a creole's isolating syntax may at first seem to be inherited from the lexifier. However, most creoles are even more isolating than English is.

Meanwhile, creoles lexified by languages with inflectional morphology (such as French and Portuguese) are just as isolating as English-lexified creoles. Therefore it is clear that, rather than deriving from lexifier influence, isolating syntax must emerge at least in part from the process by which creoles form, whatever the details of that process are.

Another common feature of creole syntax is verb serialization (1). In Hawaiian Creole, instead of employing complementizers, prepositions, or auxiliary verbs to show purpose, result, means, etc., two full verbs are strung together (Bickerton 1984:175).

- 1a. dei gon get naif pok you
 they will get knife poke you

‘They will stab you with a knife.’

- 1b. dei wawkfit go skul
 they walk feet go school

‘They went to school on foot’

(Adapted from Bickerton 1984:175)

Serial verb syntax is an example of how pidgin and creole languages tend not to adopt the functional items of the lexifier. Auxiliary verbs, prepositions, complementizers and other function words are not necessarily carried over into the creole with all their uses intact. Creoles fill this gap with lexical items, either through devices like verb serialization, or by transforming them into functional words. For example, the English verb *stay* becomes a preverbal imperfective aspect marker in Hawaiian Creole (2). Its

meanings extend from marking habitual to continuous action, and have become quite removed from its English meaning of ‘remain, be stationary.’

2a. samtaim dei stei kam araun, polis
 sometimes they IPFV come around police
 ‘Sometimes the police used to come around.’

2b. wan taim wen we go hom inna night dis ting stei flai ap
 one time when we go home in.the night this thing IPFV fly up
 ‘Once when we went home at night this thing was flying about’

(Adaped from Bickerton 1984:175)

Creole phonology tends to be less strikingly homogenous than creole morphosyntax, but some trends emerge: phoneme inventories tend to be smaller, and syllables simpler, than in the lexifier language. This may simply be due to the rather complex syllables and large inventories of European languages, (meaning chance is against an equally large inventory and equally complex syllable structure) or to more complicated causes. Pidgins, as auxiliary languages, have to be pronounceable by speakers of several different languages, and it seems sensible to assume that pidgins therefore take the phonological least common denominator of the languages involved in the contact situation. Creoles evolve from pidgins and therefore inherit their sound systems.

Although substantial variety exists, the quantity of phonological and morphosyntactic commonalities across geographically far-flung creoles is striking (Muysken and Smith 1995:4). It requires explanation, whether the explanation hinge on common origins or universals of language-learning and language-processing.

3. Theories of Creole Genesis

3.1 Universals: L1 Acquisition

Bickerton's (1984) language bioprogram hypothesis revolutionized creole studies. It gave an explanation for creole similarities that was literally genetic – not based on a common origin for creole languages, but in common structures in our brains, universal to humankind. Bickerton's language bioprogram hypothesis builds off Chomsky's universal grammar hypothesis, using similar theory to explain different phenomena.

Universal grammar explains why young children can so rapidly acquire any of the complex and superficially divergent grammars of the world's multitudinous languages. It posits a limited number of syntactical parameters, which each have different possible settings (Chomsky and Lasnik 1993). Each choice of setting has far-rippling effects on the surface structure of the language. Which settings of the various parameters a language selects determines how its syntax differs from that of other languages. Aside from these different choices of parameter settings, the UG hypothesis claims the structures of the world's languages are fundamentally the same. Certain principles of language processing are hardwired into our brains – language acquisition is essentially instinctive.

However, children still have to learn what parameter settings their native language's grammar chooses before they can acquire its grammar. They do not need to hear every possible grammatical sentence in their target language to learn what pattern its grammar follows – UG provides them with powerful pattern-finding tools to fill in the

gaps in their input. Nevertheless, language acquisition cannot happen in a void: children need fluent speakers as models to provide adequate input.

Bickerton's (1984) language bioprogram hypothesis uses this model of L1 acquisition to explain how pidgins turn into creoles. Pidgins do not conform to UG; a child whose L1 input is a pidgin doesn't get a consistent model of what parameter settings to choose. To solve this dilemma, Bickerton argues that the child falls back on the default settings of universal grammar – the language bioprogram. With this innate set of structures and default parameter settings, she creates a natural language grammar for herself when no one around her is consistently modeling one. This newly formed natural language is a creole. According to Bickerton, this is the only way that creoles emerge.

So what is the output of the bioprogram? This is the question Bickerton devotes most of his attention to. The bioprogram grammar is necessarily the simplest possible natural language grammar. This is because it must be the source from which are derived all natural language grammars. If the bioprogram is innate, Bickerton argues, nothing in it can be deleted or simplified – it is the baseline. Complexity can be added. Categories can be subdivided, movements and transformations applied, non-default parameter settings chosen, but this is all learned rather than innate. Language-specific features are in a sense added on top of the pre-existing, instinctive, bioprogram. This means the language bioprogram generative grammar has as few categories as possible. It lacks non-finite verb phrases, prepositions, and complementizers – the roles of which are given to finite VPs and verbs.

This underlying syntactic simplicity has several surface symptoms, which Bickerton shows to be characteristic of creole grammars. For example, the serial verb

constructions mentioned above as characterizing creoles make full verbs do the work of prepositions, etc. A lack of prepositions would naturally give rise to the serial verb constructions common in creoles.

Bickerton backs up his model of bioprogram grammar with child L1 acquisition data. Children frequently make mistakes that are consistent with the bioprogram grammar and with creole grammars. This makes sense if children's innate tendencies and adult creole grammars are both reflections of the bioprogram. One study (Wilson and Peters 1988) reports a young child using serial verb constructions before he had acquired the prepositions necessary for the equivalent correct English constructions (3).

3a. Let daddy get pen write it.

Meaning from context: "Let daddy write it with a pen."

3b. Let daddy hold it hit it.

Meaning from context: "Let daddy hit the ball with the bat."

(Wilson and Peters 1988, cited in Bickerton 1984:185-186)

More significantly, Bickerton claims that the grammar of Saramaccan, a creole language of Suriname, lacks infinitive verb phrases and complementizers. In 4a, below, the embedded VP which in English would be *to eat*, that is, an infinitive, is clearly finite: it has a nominative subject, *a* ('he'). By its nature an infinitive VP can only have an accusative subject.

- 4a. a go a wosu fu a njan
 he_i go LOC house FU² he_i eat
 ‘He went home to eat’

(From Bickerton 1984:180)

Further evidence for the finite nature of the embedded VP in these data is that the VP is tensed: if it is changed from the unmarked non-past, this is visible (4b).

- 4b. a go a wosu fu a bi njan
 he_i go LOC house FU he_i PST³ eat
 ‘He went home to eat [but did not in fact eat]’

(Adapted Bickerton 1984:180)

Bickerton’s claim that the ‘complementizer’ introducing the embedded VP is in fact a verb itself rests on the fact that *fu*, too, is tensed, and can be marked for anterior tense (4c).

- 4c. a go a wosu bi fu a njan
 he_i go LOC house PST FU he_i eat
 ‘He went home to eat [but did not in fact eat]’

(Adapted Bickerton 1984:180)

Bickerton’s data (4a-c) illustrates how Saramaccan functions without infinitives or complementizers; we have to take his word for it that it entirely lacks them, since sentence examples cannot truly prove the absence of a category from a language’s

² Since *fu* is itself under discussion, I do not give a translation for it. Bickerton himself glosses it with “for”, but this is its etymology, and not necessarily consistent with all the functions he ascribes to it.

³ Actually anterior tense, according to Bickerton, but see the discussion of *ben* (p. 30), the Sranan equivalent of *bi*, for further discussion of *bi*’s exact meaning.

grammar. However, he argues convincingly that Saramaccan in general conforms to his hypothesized bioprogram grammar.

Although most creole languages do not match the bioprogram in all the ways Saramaccan does, they show more of its typical features than non-creole languages. And purely syntactical bioprogram features are not the only ones Bickerton brings to support his claims. He also discusses morphological commonalities, arguing for universal trends among creoles in the semantics of TMA particles (Bickerton 1984:182). Tense is universally relative to the topic time rather than the speech time. This means that instead of past tense (before the time of speech) creoles have *anterior tense*, referring to events previous to the temporal frame of reference of the sentence (compare English constructions like “had VERBed,” which indicate a past before a past-tense temporal reference point.) In creole grammars, anterior tense is marked and non-anterior unmarked. Aspect is punctual (unmarked) or non-punctual (marked) and mood is realis (unmarked) or irrealis (marked). Cross-creolistically, these three markers tend to be the only ones represented. The particles tend to be preverbal, and the ordering is consistently tense-aspect-mood (Bickerton 1984:182).

Bickerton’s argument emphasizes a more-than-coincidental similarity across creole languages, explicable by their grammars’ common origin in the bioprogram. He explains what differences do exist between them – and the fact that some of them fit the bioprogram far less cleanly than Saramaccan – by appealing to their different degrees of impoverishment in lexifier input (1984:179). Creoles like Haitian and Hawaiian had plenty of lexifier input in their pidgin stage, leading to ‘rich’ pidgins with a certain amount of grammar from the lexifier consistently retained. As a result, when the first

generation of infants were exposed to the pidgin as their L1 input and nativisation occurred, the bioprogram had fewer gaps to fill and the resulting creole was less purely bioprogram-shaped. At the other end of the spectrum, Saramaccan was cut off from its lexifiers (English and Portuguese) early in its development, when escaped slaves vanished into the interior to found their own communities, called *maroons* (Arends 1995:16). It consequently is very unlike English or Portuguese and takes little from them grammatically. Bickerton therefore views Saramaccan as the purest, most radical creole, and the best reflection of the bioprogram (1984:178).

The spectrum on which creoles are arranged from most to least ‘radical’ is more formally described by *pidgination index*, or PI (Bickerton 1984:178).. It measures impoverishment from lexifier input and corresponding departure from lexifier grammar in the pre-creole pidgin. The greater the impoverishment, the lower the PI. For example, Saramaccan’s lexifier impoverishment is the highest of any creole, and its PI the lowest. PI is based on the length of time before slaves on a plantation outnumbered masters (that is, native speakers of the lexifier). The point in time where the two groups are equal is called *Event 1*. A longer pre-Event 1 period will lead to early slaves acquiring the lexifier more fully, and a higher PI, while a short period will lead to less complete acquisition of the lexifier. PI is also related to the rate at which newly imported slaves increased after Event 1 – the faster the rate, the less exposure to the lexifier, since a newly arrived slave would be surrounded to a greater extent by other recent arrivals with a poor grasp of the lexifier. Also of relevance to PI is the proportion of pre-Event 1 slaves in the population, following Event 1. If life expectancy was short, this ratio would be lowered and would reduce lexifier input quality, lowering PI. In short, PI is a way of

using the social and historical context of a creole's origins to quantify how far it can be expected to depart from the lexifier.

Bickerton constructs his own continuum of creole purity, based on syntactic conformity with the bioprogram. His measure of bioprogram conformity is the number of possible roles of *fu* or its cognates. In all the creoles Bickerton examines, he claims to find an equivalent to *fu*. Such *fu*-like words are all derived from *for* whenever the lexifier is English, and from words with the same meaning in Portuguese and French (*para* and *pour*) (Bickerton 1984:180). Recall that in Saramaccan, *fu* does the work of a complementizer, but is tensed like a verb. In fact it is extremely versatile in Saramaccan, being able to function like a complementizer, a full verb, a modal verb, and a preposition (Bickerton 1984:180). Equivalents of *fu* are less versatile in the less bioprogram-conforming creoles. In fact, versatility of the *fu*-like word and non-conformity with the bioprogram are correlated. With these data, Bickerton constructed a continuum. It matches the PI continuum of creoles well, supporting Bickerton's argument that greater lexifier deprivation leaves greater gaps for the bioprogram to fill.

3.3. *A Gradualist Approach*

Recent examinations of historical texts have cast doubt on the traditional assumption, within which Bickerton worked, that creoles spring up fully formed from pidgins, like Athena from Zeus's head. For example, according to Arends' (1992) diachronic study of its copula system and comparative, Sranan seems to have continued to change and evolve for centuries after its creolization, at rate much more rapid than that of normal language evolution. This might suggest that it takes a while for a creole to become internally consistent and cease rapid change, once it has formed. It may even

mean that creolization itself takes much longer than Bickerton suggests in his all-or-nothing, nativized-or-pidgin, account of creole genesis.

Mufwene's (2010) article 'SLA and the Emergence of Creoles' launches an attack on Bickerton's language bioprogram hypothesis on several fronts, taking a gradualist stance and emphasizing continuity with the lexifier. First of all, Mufwene denies an assumption central to the bioprogram hypothesis – that of a sudden break in transmission. Without a loss of the lexifier grammar in the pidgin, there is no role for the bioprogram to play in creole formation, and Bickerton's hypothesis falls apart. According to Mufwene, there was no period of pidgination and corresponding impoverished grammar in the history of creoles.

Mufwene draws a sharp distinction between Atlantic creoles and what he calls the “expanded pidgins” of the Pacific. In his view, pidgins only arise in situations of sporadic contact – the kind brought about by trade or exploration, not plantation communities. With more than sporadic contact, Mufwene argues, the language of economic power is acquired fully as a second language. He therefore contrasts the Pacific “expanded pidgins” which evolved from trade pidgins into full languages, with Atlantic creoles (2010:362).

. The process of creolization Mufwene proposes in the Atlantic is one of *basilection*, or gradual divergence from the lexifier (2010:363): the first slaves to arrive in fact received the most exposure to the lexifier, since in the beginning there were few of them relative to their lexifier-speaking masters. Later slaves learned from the first ones, still later arrivals from those, and so on, partly through the process of seasoning, mentioned earlier. Although influence from natively spoken varieties of the lexifier was

less and less direct as slave numbers increased, each wave of new slaves was able to acquire a fully functional grammar. There was a gradual accumulation of second language acquisition (SLA) errors and deviations from the original lexifier, but its underlying structure was never erased, simply tweaked by successive waves of second-language learners learning from second-language speakers.

Mufwene's claim is essentially that a temporary switch from first-language acquisition to second-language acquisition does not amount to a break in transmission or the destruction of a language's syntactic structure. He argues that naturalistic (as opposed to classroom) SLA differs from L1 acquisition in its ease and exactness, but not in its broad outlines. The language is passed on, syntax and all, through adult communities acquiring it as a second language. The deviations that build up in such situations do not, Mufwene argues, render the language's syntax incomplete or incoherent at any point.

One thread in his argument for the similarity of SLA and L1 acquisition is his emphasis on idiolect – the variant of a language unique to one individual. According to Mufwene, idiolect is a patchwork of features copied from parents, peers, and community members during L1 acquisition. No two idiolects are identical, because no two people, except conjoined twins, are exposed to the exact same series of idiolects as they develop their own. If one sees L1 acquisition as the process of building one's idiolect, one would expect it to cease in adulthood, after the critical period for L1 acquisition is passed. But idiolect is still constantly adjusting to accommodate and match surrounding idiolects throughout an adult's life. According to Mufwene, L1 acquisition becomes less adept, but never truly ceases. And adult naturalistic SLA uses the same tools as adult idiolect shifting.

In keeping with this emphasis on idiolect, Mufwene does not treat languages as discrete and monolithic. Parameter settings in UG, he says, are more like preferences within a language than the absolute laws as which they are traditionally discussed. Languages tend to have plenty of internal variation. They are stews of interacting idiolects, and features are constantly competing with each other as the language evolves. Navigating intra-language variation is quantitatively, not qualitatively different than navigating inter-language variation, Mufwene suggests.

In L1 acquisition, children select some variants from the idiolects around them over others, or make errors they retain into adulthood, weeding out what were previously possible correct variants or introducing new variants into the pool. As adult idiolects shift, more selection occurs. Mufwene argues that these imperfections of first-language transmission and the language change they introduce are more slight than the changes waves of SLA acquisition introduce in creoles, but qualitatively the same. Therefore, the processes by which creoles evolved are different only in scale and speed from the normal processes of language change.

Mufwene's basilection model of creole emergence offers an alternative explanation for the origins of *creole continua*. Creole continua exist in stratified societies like Jamaica, where the elite speak a dialect of the lexifier language (the acrolect), while the lowest stratum of society speaks the basilect, the version of the creole furthest from the lexifier. The middle strata speak intermediate varieties, or mesolects.

Continua are traditionally thought to come about after the creole has formed, by de-creolization. Education in the lexifier language and social pressures cause creole-speakers to correct their speech towards a high-prestige, standardized language variety

(the lexifier), and the higher their social status and education, the stronger the effect (Siegel 2008:235). The result is the acrolect for more fully de-creolized high-status demographics, and the mesolect for partially de-creolized ones. Meanwhile, the basilect remains as it was.

Mufwene, however, hypothesizes that creoles and their continua both emerge via basilection – gradual evolution in the direction of the basilect. The first varieties to emerge are very similar to the lexifier, and will later form the acrolect. As the creole accumulates more changes and diverges further from the lexifier, the mesolect and then the basilect form. Since this process is already central to his account of creolization, Mufwene's account of creole continua is in some ways more elegant than the traditional one. On the other hand, he fails to directly explain the link between social status and place on a creole continuum. If more lexifier-like variants of the creole were originally characteristic of the earliest arrivals, why do they later become the lects of the uppermost strata of society? Surely we are not meant to assume that the first slaves to arrive on a plantation enjoyed elevated social status and transmitted this status to their descendents.

Mufwene's basilection account of creole genesis provides a useful counterpoint to Bickerton's language bioprogram. However, the basilection account of creole continua is not its only weak spot: it makes no testable predictions. If, as Mufwene suggests, the evolution of a creole is random, like normal language evolution, it could proceed in any direction. Nor does the basilection model rule out influence from substrate languages or language-processing universals. It simply states that no sudden syntactic shift accompanied nativization. This cannot be disproven by looking at the current features of the creole, only by comparing the speech of the first native speakers to their second

language speaker parent generation. Mufwene, however, explicitly restricts his hypothesis to Atlantic creoles, where the pidgin-speaking generation is long deceased.

3.3 *Substrate Influence*

One of the accusations which has been frequently leveled at linguists who emphasize substrate contributions to creole grammars concerns the Cafeteria Principle (Arends et al 1995:101; Mufwene 2010:302). This describes a less-than-rigorous method of data collection in which researchers search for partial similarities between any West African languages and any creole languages, then use whatever resemblances they discover to argue for substrate influence. According to Arends et al al (1995:101) the missing steps include establishing through historical research that speakers of the African language in question were involved in the formation of the creole in question's pidgin ancestor; that is, that the similarity is truly between a creole and its substrate. Researchers have also often neglected to rule out chance resemblances by conducting a statistical comparison of similar and dissimilar features, and failed to establish that the substrate and creole have a significantly greater than chance resemblance. Most importantly, many have failed to define a model of substrate influence that clearly delineates the process by which substrate influence enters the creole (Siegel 2008:148). Such a model would provide what some claim is lacking in most substratist arguments: falsifiable predictions of which features will be transferred, and where transfer will be blocked.

Siegel's 2008 book *The Emergence of Pidgin and Creole Languages* emphasizes substrate influence, but attempts to clearly define and predict it, and to integrate it with traditional models of creole genesis. It accepts the core ideas of Bickerton's language

bioprogram hypothesis – that nativization and the abilities of the L1-learning brain make a pidgin into a creole. Siegel, however, claims that the bioprogram and fragments of lexifier grammar that (somewhat randomly) survived through the pidgin phase are not the only significant sources of creole grammar. He argues that influence from the substrate languages is widespread and follows a predictable pattern.

Earlier substratists were unsystematic, as Bickerton (1994), Mufwene (2010:302), and Siegel (2008:148) all agree. They searched unsystematically for any resemblances or commonalities between, for example, African languages and Atlantic creoles. They also were vague on how the substrate features transferred into the creoles. In contrast, Siegel outlines carefully the mechanisms by which substrate grammar is transferred, and the restrictions which limit it.

Bickerton (1984) points out that pidgins do not generally have much resemblance to the substrate languages involved, and the only way for non-bioprogram features to get passed into the creole is through the pidgin. However, according to Siegel, transfer does not occur during the pidgin's youth, when it is restricted to economic transactions and other sporadic uses for which very simple syntax suffices. It occurs late in the pidgin phase, when the pidgin expands to become the language of communities or households but hasn't yet been nativized (Siegel 2008:61). It needs more complex grammar to keep up with the more complex demands on it. This need motivates functional transfer, a process by which pidgin speakers (or L2 learners) interpret structures in the target language on analogy with structures in their native language. As a result, their idiolect of the target language acquires a construction similar in syntax and semantics to one in their native language, but using words or phrases from the target language. For example, in

Mandarin Chinese, perfective aspect is indicated with the particle *le*. English speakers learning Chinese often use *le* wherever they would use English past tense marking, thus falling into error. In a naturalistic SLA context, with no teacher to correct such errors and little contact even with native speakers of the lexifier, it is easy to see how many pieces of substrate grammar might be transferred into the expanding pidgin. The expanded pidgin would then show plenty of substrate influence, even though the early pidgin did not.

Siegel finds support for this pattern of sudden grammatical expansion prior to nativization: for example, around 1895—1910, Hawaiian Pidgin English was expanding. It still had not been nativized, but speakers used it as their primary language (Siegel 2008:61). At this time, the TMA markers that characterize modern HPE (which is a creole, despite the name) such as *bin*, *go/gon*, *stei*, *waz*, and *yustu* increasingly began to appear. They were used inconsistently, but with greater frequency than earlier in the pidgin's history. Meanwhile, other function words appeared late in the pidgin stage of HPE that were unattested in the early pidgin. For example, the copula *stei* in locatives, the existential and possessive marker *get*, and the complementizer *fo* (*for*) appeared before nativization, but not until late in the pidgin phase (Siegel 2008:61).

The first restriction on substrate transfer is the availability constraint – there has to be something in the target language (pidgin or lexifier) that can be re-interpreted as the transferring structure. That is, it must have roughly similar semantic meaning and syntactic distribution. In order to be noticed, this target must be perceptual salient – a separate word, not an unstressed affix. It also helps for the target to have an invariant

form, although one form of a very common irregular verb (like *be*) can be selected as a target (Siegel 2008:203).

If the availability constraint's requirements are met, and transfer occurs, another restriction still applies: the reinforcement principle. A transferred morpheme or construction still only exists in one speaker's idiolect, perhaps as one variant of many used by that speaker. Pidgins, after all, have inconsistent grammars. Before it is a candidate for retention in the future creole, a feature must be in common use in the pidgin-speaking community. If it is a feature common among the substrate languages, this is more likely. In such a case, transfer occurs the same way for many speakers, and makes sense to those who hear the transferred feature and understand it on analogy to their own languages.

As the speech community interacts it becomes more homogenous, as speakers mimic and accommodate each other (as Mufwene also describes (2010:307)). This, and the effect of nativization, level out the features that weren't as strongly reinforced, leaving a creole with the substrate-derived features that are most widespread among its substrate languages and most resemble forms from its lexifier.

Siegel tests this model by looking at two creole languages, Tayo and Roper Kriol (Siegel 2008: 204-234). For each language, he first looks at the substrates, sees what features they have in common (that is, which would be reinforced if they were to transfer to the pidgin) and then, of those, which have available targets in the lexifier. Drawing on his model of transfer and its restrictions, he predicts which features would be transferred from the substrates and be retained in each of the two creoles.

His predictions of what features appeared in the creole were born out, but they were quite similar to the predictions of the language bioprogram hypothesis. In fact, features common to a large group of languages, with at least superficial similarity to lexifier features, are likely to be unmarked. This makes them hard to distinguish from the output of the bioprogram. It's also hard to distinguish substrate influence from lexifier influence, since substrate features can only transfer when a superficially parallel feature exists in the lexifier.

4. Background on Sranan

Sranan is one of several creole languages of Suriname. Suriname was originally settled from other Caribbean colonies, namely Barbados, St. Kitts, Nevis, and Montserrat (Adamson and Smith 1995:218), so its creoles have a family resemblance to other English-lexified creoles of the Caribbean. This resemblance appears in syntax, in common deviations from standard English phonology, and in which lexical items are grammaticalized into function words. Within the Caribbean English-lexified group, the Suriname languages are even more closely related.

It is worth noting that this resemblance is genetic—there was cross-migration and population movement between the regions of the Caribbean, and the pidgins and descendent creoles of the slave populations moved with them (Adamson and Smith 1995:218). Not only do lexifier, substrates, and bioprogram universals unite these creoles, but also their interconnected histories. Bickerton's most bioprogram-conforming creoles all fall into this genetic group, making their commonalities potentially less significant.

Suriname was colonized by the English in 1651. In 1667 ownership of the colony passed to the Dutch, and English influence quickly waned. However, those twenty or

thirty years proved long enough for the eventual formation of an English-lexified creole. According to Bickerton's language bioprogram hypothesis, the withdrawal of the lexifier lowered the pidgination index of Sranan's precursor pidgin and caused it to conform more closely to the bioprogram (Bickerton 1984:177).

The substrates of Sranan were mostly from the Gbe and Kikongo language clusters of West Africa (Arends et al 1995:101), each of which contains many interrelated languages. The Gbe language cluster, for example, consists of five branches: Ewe, Aja, Fon, Gen, and Phla-Phera. These branches are themselves dialect continua rather than discrete languages. In a dialect continuum, each dialect is mutually intelligible with its neighbor dialects. As one travels along the continuum, however, linguistic differences accumulate, such that dialects at two far-apart points on the continuum are mutually unintelligible, and thus by definition should be considered separate languages rather than two dialects of a single language.

Speakers of these diverse West African languages were thrown together on plantations, as described earlier, and forced to find a common means of communication. In fact Arends' description of variable exposure to the lexifier across slave populations, indirect exposure through seasoning and contact with black overseers, etc. was based primarily on Sranan's history.

The resulting creole language is a national language of Suriname, and is spoken natively or as a second language by most of the population (Adamson and Smith 1995:220).

5. *Sranan's TMA Particles*

Sranan's TMA particles are a useful testing ground on which to evaluate competing theories of creole genesis. Both Bickerton's (1984) language bioprogram hypothesis and Siegel's (2008) model of substrate transfer (as applied by Winford and Migge 2007) offer explanations for why Sranan has the TMA particles it does. However, there is some debate over what particles are actually present in Sranan, and how to classify them. In order to evaluate Bickerton's and Siegel's analyses, we must begin by examining Sranan's TMA system and the debates surrounding it.

The only complete grammar of Sranan published is Voorhoeve's (1962) *Sranan Syntax*. Voorhoeve recognizes three verbal prefixes (now generally considered inflectional particles). They are *ben-*, denoting past tense, *sa-*, denoting non-realis mood, and *e-*, denoting non-completive aspect. He shows that they affix to the verb in the order above (T, M, A) and that the absence of each itself is an inflectional marker, so that, for example [zero] aspect marking indicates perfect aspect. However, later investigations indicate that Sranan's TMA system is more complex and ambiguous than the prefixes described by Voorhoeve (5).

5. Other Perspectives on Sranan's Inflection Particles:

Word	According to Bickerton (1984:182)	According to Adamson and Smith (1995:225)	According to Winford and Migge (2007: 95)
ben	Anterior Tense	Auxiliary verb 'was'	Relative Past Tense
sa	Irrealis Mood	Auxiliary verb 'will'	Predictive Future Tense
e	Non-Punctual Aspect	Non-Punctual Aspect	Imperfective Aspect
o		Fut. Tense/ Irrealis Mood	Potential Future Tense
k(a)ba		Auxiliary verb 'finish'	Terminative Perfect Aspect

Bickerton, as mentioned before, supports his language bioprogram hypothesis with the claim that the TMA particles of creoles are highly uniform: each creole has three particles, one for anterior tense, one for irrealis mood, and one for nonpunctual aspect, with the unmarked option of each category indicating, respectively, present tense, realis mood, and punctual aspect. According to this model, only three of Sranan's potential inflection particles would be an actual inflection particle: *ben*, *sa*, and *e*. Bickerton's analysis matches Voorhoeve's fairly well, though he calls "non-completive aspect" "non-punctual" and refines Voorhoeve's "past tense" to "anterior tense," which differs somewhat from English past tense. Both recognize the same three particles, and naturally, there is consensus across authors of all theoretical biases on the approximate translations of the three words in question. However, other authors, such as Winford and Migge, offer analyses of Sranan's TMA system that give it more than three inflection particles.

Winford and Migge (2007) conduct a detailed analysis of Sranan's TMA markers, in order to compare them to those of Gbe substrate languages. Their theoretical framework resembles that of Siegel (2008) – they consider the fact that Gbe languages were Sranan's primary substrates, and predict that the structure of Gbe TMA systems will be partially transferred into Sranan and other Suriname creoles. Instead of falling prey to the Cafeteria Principle (see Arends et al, 1995:100), whereby any resemblance supports substrate influence, they look only for similarities in the syntax and semantics of TMA markers. They consider what markers are present, where they are placed, and what range of inflectional information each can indicate. Despite this, their criteria for significant resemblances are somewhat more flexible than those of Siegel (2008) – he predicts where transfer will occur, then sees how well reality matches his prediction, whereas Winford and Migge look for any resemblances within their target area, then use Siegel's restrictions on substrate transfer to explain why more resemblances do not appear (Winford and Migge 2007:95).

However, the fact that they use their Sranan data as their starting point means that they provide an in-depth description of Sranan's TMA system, to which Bickerton's language bioprogram hypothesis-motivated predictions and Siegel's models of substrate influence can both be usefully compared.

The particle that best supports Bickerton's LBH is clearly *ben*. It marks anterior tense or, as Winford and Migge call it, relative past. They differ on what to call it, but both agree that it is past relative to the topic time, not the speech time. In a narrative, it only is used for events that happened before the main thread of the narrative, even if the

entire narrative happened in the past. The unmarked tense is, naturally, present to the topic time under discussion.

While it supports Bickerton's claims, *ben*'s presence undermines Siegel's. The first criterion for transfer from the substrate is, naturally, that a feature be present in the substrate in the first place. Past tense marking, however, is uniformly absent from Gbe languages. They have a future/nonfuture tense system, in which past and present are alike unmarked (Winford and Migge 2003, 91). *ben* may have come straight from English, or may have been generated by the LBH, but it certainly was not transferred from the substrate.

Future tense, however, lines up less perfectly with Bickerton's three-particle model, as there are two future markers, *sa* and *o*, which have only subtle differences in meaning. Recall that Bickerton predicts a single particle that doubles as future tense and irrealis mood. Sometimes it will denote future events, and sometimes hypotheticals or possibilities that are not necessarily in the future. This may be true of *sa*, but *o* is difficult to interpret as an irrealis marker.

Voorhoeve describes *sa* as having "a slightly more hypothetical character" than *o* (Voorhoeve 1962, 40). Likewise, Winford and Migge (2007) call *sa* "potential future" and *o* "predictive future," noting that *sa* is also an indicator of irrealis aspect.

However, Sranan may have matched Bickerton's system better historically. According to Winford and Migge (2007:92), early Sranan texts use *sa* to mark both kinds of future. *De go* was also used as a future marker, but its interpretation was originally mostly related to intention or plan. *De* is derived from 'there', which was first used as a locational copula (as in English *The cat is on the table*). *De* itself evolved into *e*, which is

a marker of imperfective, or nonpunctual, aspect. *Go* is of course from the English auxiliary *go*.

6.	English:	Early Sranan:
	Is going to (Verb)	De go (Verb)
		IPFV go (Verb)

To to my observation, English and early Sranan future constructions are very similar, in that they both use an imperfective form of the verb *go*. In English, the imperfective is formed with *be*, in early Sranan, with *de* (6). Both imperfective markers are derived from locational copulas.

De go seems to have evolved rather than vanished: Voorhoeve analyzes *o* as *e+go*. It seems logical to conclude that *de go* was originally a imperfective-aspect marked auxiliary, and later acquired its modern meaning of concrete ‘predictive’ future, while simultaneously coalescing into *o* through phonological change. Though Winford and Migge do not connect *de go* with *o*, they similarly conclude that *o* may well be a language-internal development, and not an indicator of substrate influence (Winford and Migge 2007:92). Consequently, it neither hurts nor strengthens Bickerton’s language bioprogram hypothesis.

On the other hand, the fact that *de go* primarily introduced plans and intentions mean that it could have been a prospective aspect marker. Prospective aspect is a category common among Gbe languages but not evident in daughter creoles like Sranan (Winford and Migge 2007:95). Winford and Migge consider it one of the unexpected transfer failures detected by their analysis, but such may not be the case. It might have transferred onto *de go*, which subsequently evolved into a marker of predictive future

due to language internal change. If such is the case, and *de go* was originally an aspect marker, it weakens Bickerton's position and strengthens Siegel's.

Thus the tense markers taken together do not form a clear case for either the language bioprogram or substrate influence model. Aspect provides a sharper contrast between the two hypotheses, since the aspect systems of Gbe languages are much richer than the punctual/nonpunctual distinction proposed by Bickerton. According to Winford and Migge's analysis, the actual aspect system of Sranan is in fact slightly more complicated than the language bioprogram hypothesis would predict, though not so rich as the substrates: Winford and Migge find a three-way aspect distinction of perfective, imperfective, and terminative perfect (2007: 95).

According to Winford and Migge, a lack of explicit aspect marking indicates perfective aspect. In perfective aspect, as they define it, the event is taken as a whole, rather than the aspect selecting a specific phase of it, such as ongoing action, completion, post-completion, etc. Stative verbs tend to be interpreted as present tense by default in this aspect, and non-stative verbs tend interpreted as past (2007:82).

Although Winford and Migge do not offer an explanation of the stative/non-stative verb difference in default tense interpretation, cross-linguistic comparison suggests an explanation. In Ancient Greek, for example, the perfect of non-stative verbs is in some ways a stative present-tense verb (often translated 'he is in a state of having done X', with emphasis on the subject's current state), but implies a past event (if he 'is in a state of having done X', it follows that he did X).

7a.	αποθνήσκω	7b.	τεθνήκα
	die.PRES.1.SING		die.PERF.1.SING
	‘I die/I am dying’		‘I have died/I am dead’

In 7b above, the perfect indicates the present state of the subject (dead). In other ways it is like a non-stative past-tense verb: in 7b, the act of dying is in fact a past event, despite the emphasis being on the present state of deadness. Similarly, Winford and Migge’s perfective aspect seems to refer to states, whether stative verbs or the post-completion phase of non-stative verbs. The default tense of both is present, even if perfect aspect gives a past-like interpretation. Winford and Migge give examples of perfective-aspect verbs that are interpreted as past events with present relevance (8).

8. den kiri a kownu
 they kill DET king
 ‘They’ve killed the king.’

(Winford and Migge 2007:82)

In support of Siegel’s hypothesis, Gbe perfectives behave the same way, as data from Ajagbe demonstrates (9).

9. wò wu àxòsu lò
 they kill king DET
 ‘They’ve killed the king.’

(Winford and Migge 2007:82)

Bickerton takes the unmarked aspect, in Sranan as in all creoles, as punctual aspect. By this, he means something rather similar to Winford and Migge’s perfective aspect – the event considered as a single, completed event, neither repeated nor ongoing.

So here, once again, the predictions of the LBH and those of Siegel's model of substrate influence are the same.

Winford and Migge's imperfective aspect is marked by *e*. Bickerton calls it non-punctual aspect, but the meanings are the same: they indicate habitual, repeated, or ongoing action. Voorhoeve's non-completive aspect is similar, and, as Voorhoeve demonstrates (10), can have inchoative interpretations as well. Inchoative aspect selects the initiation phase of an action or state. It can be translated as 'start to Verb' or 'become State'.

10a.	A e dede	10b.	A dede
	he IPFV dead		he dead
	'He dies.'		'He is dead.'

(Adapted from Voorhoeve 1961:41)

Voorhoeve seemingly assumes that the basic meaning of *dede* is 'be dead' (not unreasonable, considering its obvious derivation from *dead*). When you add the imperfective marker *e* to it, you get an inchoative meaning: 'become dead' or 'die.' However, recall from 7 that the perfect can convert a verb like 'die' into 'has died, is dead.' This is the exact opposite of the effect of *e*. In Sranan, the perfect is indicated by a lack of aspect marking, which *e* does away with simply by being present. So how do we explain the contrast between 10a and 10b? Is 10a inchoative and 10b non-inchoative, or is it simply that 10b is perfect and 10a non-perfect? If *e* normally functions as an imperfective marker, then the second hypothesis is more parsimonious than the first. However, does this account for the other data Voorhoeve claims contain inchoatives?

- | | |
|--|---|
| <p>10c. A sant e kba
 DET sand IPFV finish
 ‘The sand is nearly finished’ (i.e.
 finished being removed from the truck.)</p> | <p>10d. A santi kba
 DET sand finish
 ‘The sand is finished.’</p> |
|--|---|

(Adapted from Voorhoeve 1962, 41)

The aspect marker-free sentence, (10d) indicates that the sand is in a state of having been finished. This could easily be interpreted as perfect aspect, as predicted by Winford and Migge’s (2007) account. The sentence with *e* (10c) would therefore be simply imperfective: ‘is finishing’.

This, however, brings up the ambiguity in English: *finish* refers to the moment of completion, but *be finishing* refers to the last stages of the process, before that moment of completion. Here, the imperfect in English refers to an earlier phase of the action than the plain verb does. Is the English imperfective of *finish* inchoative? Or rather, inceptive, since it could be paraphrased as ‘be about to finish’.

We conclude that *finish* and *kba* are difficult testing grounds to use in defining aspects, since the semantics of the verbs themselves have aspect-like qualities built in. Voorhoeve’s last example of the “inchoative” use of *e* (10e) is more straightforward.

- | | |
|---|--|
| <p>10e. A watra e tribu
 DET water IPFV muddy
 “The water gets muddy”</p> | <p>10f. A watra tribu
 DET water muddy
 “The water is muddy”</p> |
|---|--|

(Voorhoeve 1962, 41)

The contrast between 10e and 10f closely parallels the contrast between 10a and 10b. If *tribu* is a stative verb, ‘be muddy’, then inchoative *e* turns it into an active verb,

‘become muddy’. If it is an active verb, ‘become muddy’ then the perfect aspect indicated by a lack of aspect marking turns the active verb into a stative one: ‘be in a state of having become muddy.’ Inchoative meaning is already inherent in ‘become muddy,’ however, as demonstrated by the word ‘become’ in the English translation. An argument can be made that the same is true of ‘die’, despite English happening to use a single verb for it.

Whether *e* is regarded as taking away the perfect aspect that would otherwise be present on a verb unmarked for aspect, or as adding an inchoative aspect, the pattern is the same: verbs with *e* are imperfective, and verbs without aspect marking are perfect. For at least some verbs, this corresponds to an active/stative distinction. To speculate on the ‘core meaning’ of the verbs themselves is unnecessarily philosophical.

The last aspect category is only proposed by Winford and Migge – Bickerton’s analysis does not include it. Winford and Migge call it terminative perfect, or completive aspect (2007:78, 95). It is marked by *kaba*, which also functions as a verb meaning ‘finish’. Winford and Migge consider the syntax and semantics of *kaba* to be transferred from the Gbe substrate. *Kaba* is unique among Sranan TMA markers in being sentence-final, rather than preverbal. This parallels the distribution of the completive aspect markers in some Gbe language varieties, such as Ajagbe and Wacigbe. (Winford and Migge 2007:83.) These languages also form the completive aspect marker from a homophone of a lexical verb meaning ‘to finish’, strengthening the parallel.

Adamson and Smith (1995:225) classify *kaba* as an auxiliary verb (‘finish’). However, Sebba (1987:72) draws a distinction between *kaba* the lexical verb and *kba*, the sentence-final adverb. He notes that the locational copula *de* does not participate in serial

verb constructions, and is never followed by a lexical verb. It can, however, be followed by *kba* (11).

11. Kofi de dyaso kba
 Kofi be here already
 “Kofi is already here.”
 [Sebba 1987:72]

Adamson and Smith (1995), who classify *kaba* as an auxiliary verb, also dispute the traditional classification, favored by Bickerton, of *ben*, *sa*, and *e* as Sranan’s three TMA particles. They say the distribution of *ben* and *sa* better matches that of auxiliary verbs, indicating that they are not particles at all. Normal auxiliary verbs can be focused by clefting just as main verbs can:

- 12a. Na *suku* a musu suku a buku
 EMPH seek he must seek DET book
 ‘He must *look for* the book.’
- 12b. Na *musu* a musu suku a buku
 EMPH must he must seek DET book
 ‘He *must* look for the book.’
- 13a. Na *taygi* a kan taygi en
 EMPH tell he can tell him
 ‘He can *tell* him.’
- 13b. Na *kan* a kan taygi en
 EMPH can he can tell him
 ‘He *can* tell him.’

The same rule is followed by *ben* and *sa*, traditionally classified as particles (or

even prefixes, according to Voorhoeve (1962).) Where the main verb can be focused (14a) *ben* can be also (14b).

14a. Na *suku* a ben suku a buku
 EMPH seek he PST seek DET book
 ‘He has *looked for* the book.’

14b. Na *ben* a ben suku a buku
 EMPH PST he PST seek DET book
 ‘He *has* looked for the book.’

Sa, the supposed future particle, follows the same pattern (15).

15a. Na *taygi* a sa taygi en
 EMPH tell he FUT⁴ tell him
 ‘He will *tell* him.’

15b. Na *sa* a sa taygi en
 EMPH FUT he FUT tell him
 ‘He *will* tell him him.’

[Adapted from Adamson and Smith 1995:225]

In contrast, *e* and *o* cannot be focused like auxiliaries (16-17).

16a. Na *suku* a o suku a buku
 EMPH seek he FUT seek DET book
 ‘He will *look for* the book.’

16b. *Na *o* a o suku a buku
 EMPH FUT he FUT seek DET book

⁴ Since the translation of *sa* and *o* is so contentious, I simply gloss both as future, leaving aside the nuances of their syntax and semantics.

- 17a. Na *suku* a e suku a buku
 EMPH seek he IPFV seek DET book
 ‘He is *looking for* the book.’
- 17b. *Na *e* a e suku a buku
 EMPH IPFV he IPFV seek DET book

(Adapted from Adamson and Smith 1995:225)

The fact that *e* and *o* cannot be focussed (16b, 17b) indicates that they are true particles, not auxiliary verbs like *ben* and *sa*. If Arends et al. are correct and *ben* and *sa* are not true TMA particles, there may have been no tense particles in early Sranan, since *o* did not emerge until later in Sranan’s development, and *e* was originally the locational copula *de*.

In conclusion, we find that there is some possibility that Bickerton’s predictions match Sranan’s actual TMA system. If *o* is a language internal development, as Winford and Migge suggest, and *kba* is, as Sebba (1987:72) claims, an adverb, then Bickerton’s three particles (past, irrealis, and non-punctual) do in fact make up Sranan’s TMA system: they are *ben*, *sa*, and *e*, respectively.

On the other hand, an equally good case can be made for Winford and Migge’s application of Siegel’s theory. *Kba*’s sentence-final position---on which Sebba presumably bases his assumption that it is an adverb and not a TMA particle---is actually evidence for substrate transfer. Many Gbe languages that otherwise have preverbal inflection particles have a sentence-final completive aspect particle paralleling *kba* (Winford and Migge 2007:83). *O*, likewise, could have a substrate transfer origin, since

it evolved from what may have been an prospective aspect marker like those in the Gbe substrate (Winford and Migge 2007:92). If both these are examples of transfer, then Sranan's TMA system offers more support to Siegel's model than to Bickerton's.

Adamson and Smith (1995:225) pose problems for Bickerton (1984). If we accept their conclusion that *ben* and *sa* are auxiliary verbs, not inflectional particles, then two out of three of Bickerton's predicted particles are missing. *O* developed after creolization and has no secondary irrealis meaning, and therefore cannot be a bioprogram-generated irrealis marker. Bickerton's account of creole syntax also does not allow for auxiliary verbs, so it is hard to reconcile with Adamson and Smith's arguments.

Adamson and Smith's analysis is less problematic for Winford and Migge (2007), however. If *ben* is a verb, not a particle transferred from substrate languages, it improves the case for substrate influence, since the Gbe cluster lacks a past-tense marker (Winford and Migge 2007:91) If *sa* likewise can no longer be included in the Sranan TMA system, it only weakens their evidence a little: if *kba*, *e*, *o*, and a lack of past tense all transferred from the substrate, there is good evidence for substrate influence even if the Gbe future tense marker for some reason failed to transfer.

Taking Adamson and Smith's (1995:225) observations into account, Winford and Migge's (2007) substratist approach appears to be better supported by the Sranan data than is Bickerton's language bioprogram hypothesis. However, the evidence is far from conclusive. We therefore turn to another area of Sranan verbal syntax, the serial verb construction, to further evaluate and examine the competing theories.

6. Serial Verb Constructions

6.1. Evaluating the Language Bioprogram Hypothesis

We have already evaluated how the language bioprogram's semantic creole universals apply to Sranan's inflectional particles. Sranan's serial verb constructions give us a lens through which to examine a more complex set of predictions – the language bioprogram's syntactic predictions. Recall that Bickerton's central argument is that creole grammars are generated by infants who acquire language without a consistent syntactic input from their environment. They resort to the simplest, default settings of the universal grammar innate to all human brains.

The language bioprogram hypothesis makes very specific claims about the structure of UG in its default settings (Bickerton 1984:179). Bickerton's generative grammar of UG is radically simple, because it is intended to be the base from which any language's grammar can be created, by varying which additional rules are introduced (Bickerton 1984:179). Modification by subtraction is not an option, Bickerton argues. Since the bioprogram is hard-wired into our brains, its rules cannot be deleted, only elaborated on.

The output of Bickerton's generative grammar has some distinctive features: it lacks infinitives, participles, complementizers, and most prepositions. Finite verbs are the all-purpose tool by which creole syntax accomplishes all its tasks, Bickerton claims.

Bickerton supports his hypothesis primarily by finding evidence for these features in the syntax of the languages that he believes conform closely to the bioprogram, like Saramaccan and Sranan. Perhaps the hardest of his claims to verify is the lack of

infinitives in creole grammars. Both the exclusion of infinitives and of participles stem from the fact that only one rule in Bickerton's generative grammar can generate a VP:

S>NP, INFL, VP

[Bickerton 1984:179]

This means every verb phrase must be the main verb of its own sentence, and every sentence must have a subject and, importantly, inflectional information like tense. The issue of subjects not always appearing in such embedded clauses is easily resolved: Bickerton allows subjects of embedded clauses to be unexpressed. Consider 18, a sentence with an instrumental serial verb construction from Saramaccan, a creole language which Sebba (1987:146) says is syntactically nearly identical to its cousin Sranan.

18. dee o- tei faka tjoko unu
 they o- take knife stab you
 ‘They will stab you with a knife.’

(Adapted from Bickerton 1984:179)

Bickerton analyzes 18 as [dee o-tei faka s[pro tjoko unu]], where pro is “a phonologically unrealized pronoun co-referential with the subject of the matrix sentence” (Bickerton 1984:179)— that is, an invisible placeholder that allows the embedded clause to be interpreted as a full embedded sentence, rather than as a nonfinite clause.

The problem of whether such clauses indeed have tense, the other mandatory element of a sentence, is not so simply solved. In English and other languages, certain embedded VPs are non-finite. Purpose clauses, for example, are infinitiveb (19)

- 19a. Mary hit John **to make him stop talking**
 19b. John continued to talk **to annoy Mary**

But Bickerton argues that in radical creoles, every embedded clause is finite, including purpose clauses, which are introduced by *fu* (touched on before in the earlier discussion of Bickerton). Recall 4a, an example from that discussion:

- 4a. a go a wosu fu a njan
 he_i go LOC house FU he_i eat
 ‘He went home to eat’

(From Bickerton 1984:180)

Here, an embedded clause has a nominative subject, where an infinitive would have an accusative subject if a subject were expressed at all. Compare English, as in 20.

20. She wanted for **him** to eat

Recall that Bickerton also provides evidence of tense markers within such embedded sentences, as in 4b.

- 4b. a go a wosu fu a bi njan
 he_i go LOC house FU he_i ANT eat
 ‘ He went home to eat [but did not in fact eat]”

(Adapted Bickerton 1984:180)

in 4b, *bi* marks anterior tense within the embedded clause. The resulting counterfactual interpretation is a little unexpected, but Bickerton’s point, that tense marking can occur within *fu*-clauses, is still valid.

However, note that Bickerton proves only that a certain category of clauses that would be infinitival in English (namely purpose clauses) are finite in Saramaccan. His evidence does not by itself rule out the existence of infinitives elsewhere in Sranan.

An excellent yardstick to measure Bickerton's bioprogram predictions against is provided by Sebba (1987). Sebba categorizes and discusses the verbs that form the backbone of Sranan serial verb constructions (SVCs). Each of the verbs involved in what Sebba considers SVCs is a lexical verb and can stand alone as the main verb of a sentence (Sebba 1987:39). However, many of the verbs Sebba devotes specific attention to acquire function-word like properties when they occur in SVCs. Some have lexical content in some SVC contexts, but in other contexts serve a purely syntactic function. Some, to be discussed later, superficially appear to be finite verbs, but may in fact fall into one of the categories Bickerton claims are absent from Sranan.

Sebba (1987) is especially useful in evaluating the language bioprogram hypothesis because he is not writing in reaction to Bickerton (1984). He simply proceeds with somewhat different assumptions and observes patterns that conflict with Bickerton's predictions. He provides evidence that Sranan's syntax may be more complex than Bickerton allows for.

The importance of SVCs in Sranan syntax by itself is hardly a blow against Bickerton. Recall that one of the pillars of his argument is that SVCs fill the gaps left by prepositions, complementizers, and infinitives, which his model of creole syntax does not allow for. However, some of the details of Sebba's analysis do pose problems for Bickerton. For example, Sebba observes that in Sranan SVCs, the verbs all share tense and aspect (Sebba 1987:39). The inflection particles occur only once, before the first verb, as demonstrated below in 21.

21. Dowwatra ben e dropu fadon na den wiwiri
 Dew.water PST IPFV drop fall.down LOC DET.PL leaf
 ‘Dew was dripping from the leaves.’

(Trefossa 1957:209. Cited in Sebba 1987:44.)

Although Sebba does not state a generalization about it, in most of the SVC types he examines, only one object can occur, after the first verb. If the second verb is transitive, it has to share the first verb’s object.

22. den fon owrukuku kiri
 they beat owl kill
 ‘They beat owl to death/They beat owl, killing him.’

(Voorhoeve and Lichtveld 1975:144. Cited in Sebba 1987:43)

In 22, *owrukuku* is the object of both *fon* and *kiri*, but only occurs after *fon*.

23. Philip naki a kapten trowe na gron
 Philip struck DET captain throw.away LOC ground
 ‘Philip struck the captain to the ground’ OR
 ‘Philip struck the captain, throwing him to the ground’

(Voorhoeve and Lichtveld 1975:142. Cited in Sebba 1987:43)

As illustrated in 23, later verbs in the series can take prepositional phrase complements (e.g. *na gron*). However, this does not alter the fact that the object of the throwing in 23 is still the captain, despite *a kapten* only occurring after *naki*.

The one-object rule does not apply to all creole SVCs, however, as seen when we take another look at some of Bickerton’s Saramaccan data (18).

18. dee o- tei faka tjoko unu
 they o- take knife stab you
 ‘They will stab you with a knife.’

(Adapted from Bickerton 1984:179)

In some SVCs, each verb in the series has its own object (18). Thus, it seems safer to say that object-sharing can be required in Sranan SVCs than that it always is.

The unity of the verbs in SVCs, extending even to shared inflections and objects, leads Sebba to conclude that the verbs of a construction must belong to the same clause, and never be separated by any clause boundaries (1987:39). Here we can apply Sebba’s observations to Bickerton’s LBH: the fact that the second verb in a sequence cannot take, and does not need, its own object or its own T/A markers argues against it existing in a conjoined or embedded sentence distinct from that of the verb whose object and inflection it shares.

Semantically, too, verbs in a serial construction often refer to aspects of a single action or event, as illustrated in 24.

24. gorogoro sa bari singi
 they SA shout sing
 ‘Throats will sing loudly.’

(Sebba 1987:56)

In 24, the verbs *bari* ‘shout’ and *singi* ‘sing’ semantically coalesce into a single unit, meaning ‘sing loudly.’ Such semantic unity implies that syntactically they should be closely linked.

Bickerton’s model of clause structure in creole syntax is thus threatened by Sebba’s general observations of SVC characteristics. Complicating Bickerton’s claims from another angle, Sebba discusses a function of the Sranan verb *go* which is not necessarily consistent with a lack of infinitives in Sranan.

Like its counterpart *kon* (‘come’), *go* has many roles in SVCs. As the last verb in a sequence, it can take a prepositional complement to indicate the direction of motion, as in 25, where it translates as ‘to’ in ‘to the market’.

25. A waka go na wowoyo
 he walk go LOC market
 ‘He walks to the market’

[Sebba 1987:49]

If the first verb is not a motion verb (26), ‘direction of motion’ can take on a less literal character, and the meaning of SVC *go* can diverge sharply from that of *go* as a solitary main verb.

26. Brudu lasi fu opo mi ay go na a fri
 Blood lose FU open my eye go LOC DET freedom
 ‘Blood was shed to open my eyes to freedom’

(Sebba 1987:49)

In 26, it indicates an abstract goal, not a physical direction of motion. Furthermore, its role has become almost entirely syntactic. It allows a more complex argument structure than simply subject and object: now the arguments can be subject, object, and a goal. Simultaneously, however, it loses some of its lexical-verb qualities. To me, this seems proven by how difficult it is to conceive of the action in *opo mi ay go na a fri* as having two interrelated pieces. One could say that the two pieces of the action are the eyes being opened, and the eyes going to freedom, but these two actions do not sum up exactly to the correct meaning of ‘open my eyes to freedom’.

Seeing that *go* can have preposition-like properties in SVCs, and follows general pattern of introducing goals, it should come as no surprise that it can introduce not only PP goals, but VP goals – that is, purpose clauses. Sometimes *go* also retains its motion-verb flavor:

27. Wan man go luku wan dansi

DET man go watch DET dance

‘A man went to watch a dance’

(Sebba 1987:54)

Other times, another verb covers the directional component of the action, and *go*’s only contribution is to introduce the purpose clause (28).

28. Den ben e tyari srafu gwe go makti na Kunofru

they PST IPFV carry slave go.away go tame LOC Kunofru

‘They took slaves away to Kunofru to be tamed’

(Sebba 1987:54)

Here, *gwe* carries the full meaning of ‘go away’ and *go* is present only to introduce the goal.

Sebba suggests that the VP complements of *go* in such sentences are in fact infinitives. He refers to them as “tenseless clauses” (Sebba 1987:54). Unfortunately he does not provide data proving that they lack tense, and may have reached his conclusions based on the close parallel they form with English infinitives. Like English infinitives, they are introduced by the same word that introduces direction of motion (English *to*, Sranan *go*). Like English infinitives, they introduce purpose. Worth noting is the fact that this is a different purpose construction than the one Bickerton proves to contain a finite purpose clause. It may be that *fu* functions more like English *that* and takes finite clauses as its complement, but that *go* introduces non-finite clauses. However, this is mere speculation: I lack the data to prove or disprove such a hypothesis. For methods I would use to test it if I had such data, see Li (1990: 8), whose diagnostics of infinitives are discussed below.

Do infinitives indeed exist in creoles like Saramaccan and Sranan? As may already have become clear, it’s difficult to determine. Such creoles have little morphology. In consequence, determining whether a verb is finite based solely on TMA marking is problematic. There is zero-marking for certain tenses and aspects – for example, perfective aspect is indicated by the lack of an aspect particle (29).

29. Mi waka
 I walk
 ‘I have walked’

(Voorhoeve 1962:39)

Thus not all finite verbs are clearly recognizable as such. Moreover, just because there are no morphological markers for infinitives does not necessarily mean that there

are no infinitives. Audrey Li argues convincingly that there are infinitives in Chinese, despite a lack of any morphological marking. The complements of verbs like *gaosu* ‘tell’ set up boundaries across which certain relationships are blocked. This is characteristic of finite clauses, which are their own full sentences. An example is the adverb *congqian*, ‘once’, which needs to be licensed by the completive aspect particle *guo* (Li 1990, 18). *Guo* cannot license *congqian* from inside a complement of the *gaosu* type (30a)

- 30a. *Wo congqian gaosu ta ni lai guo zher
 I once tell 3rd.sing you come COMPL here
 (Li 1990, 19)

However, from inside the complements of *qing* and verbs of the same type, *guo* **can** license *congqian* (30b). It can even be interpreted as applying to the sentence’s main clause.

- 30b. Wo congqian qing ta chi guo fan
 I once invite 3rd.sing eat COMPL food
 ‘ I once invited him/her out to eat ’
 (Li 1990, 19)

Li argues that this distinction between complement types represents a distinction between finite and non-finite embedded clauses. Unfortunately, I do not have the resources to assess whether such a distinction exists in Sranan. However, Li’s arguments at least indicate that lack of morphological infinitive marking is by no means proof of a lack of infinitives. Bickerton’s observation that Sranan lacks infinitives may well be incorrect.

However, the conflicts between Sebba’s observations and Bickerton’s LBH predictions extend beyond the matter of infinitives. Participles also pose a problem, since

they, too, fail to stand alone as the main verb in a sentence. Participles are thus lacking from Bickerton's LBH generative grammar. However, once again, it is unclear whether Sranan conforms to Bickerton's predictions. The imperfective marker *e* can, according to Sebba (1987:58), make the verb it modifies semantically much like a participle. I assume that the similarity Sebba points out is that both participles and the imperfective verbs under discussion provide information about ongoing 'background' actions that are simultaneous with the main verb's action but do not necessarily form a unified whole with it. The verbs Sebba calls participle-like come last in what appears to be a serial verb sequence, and are marked for imperfect aspect (31).

31. Mi papa sidon na oso e wakti
 my father sit LOC house IPFV wait
 'My father sat at home waiting '

(Cairo 1969:264. Cited in Sebba 1987:58)

As mentioned above, the member verbs of Sranan SVCs usually share their TMA markers. Here, however, the preverbal marker *e* precedes only *wakti*. This sets the construction apart from normal serial verb constructions, and Sebba uses this to support his hypothesis that *e wakti* is neither a solitary main verb in some sort of embedded sentence, nor part of a string of serial verbs, but instead is a kind of participle. This conclusion is strengthened by other data (32), where the action of the participle candidate and the action of the main verb not only fail to cohere into a single complex action, but have two different subjects.

32. Kofi si Amba e dansi
 Kofi see Amba IPFV dance
 ‘ Kofi saw Amba dancing’

(Cairo 1969:264. Cited in Sebba 1987:58)

In 32, *e dansi* seems semantically to modify *Amba*, rather than to add to the meaning of *si*. This strengthens the case for treating it as a participle, since participles are modifiers of nouns, not verbs.

Once again, the lack of verb morphology in Sranan makes it hard to prove Bickerton’s prediction either right or wrong. It seems that Sranan has structures that semantically fill the role of participles, just as it has purpose clauses to parallel English’s infinitival constructions. However, Bickerton’s prediction is about syntax. He explicitly states that creole grammars are capable of the same semantic work as other grammars, but accomplish it with different tools: SVCs in place of infinitives and participles. Semantic similarity to English constructions does not, therefore, prove syntactic similarity, and certainly does not prove Bickerton wrong. However, whether verbs with *e* are participles or not, Sebba’s observations about TMA-sharing, object-sharing, and the semantic unity of SVCs all still suggest that Bickerton’s hypothesized syntactic universals need to be reexamined.

6.2. *Serial Verbs and Substrate Transfer*

We have already seen that the structure of SVCs may pose problems for Bickerton’s generative grammar of UG. The LBH is much more seriously called into question by McWhorter’s (1992) attack on the assumption that SVCs are products of the

creolization process at all, suggesting instead that they are the result of substrate transfer. His claims support Siegel's (2008) model of substrate influence.

McWhorter points out that the Suriname slave population's most common substrates, Kwa and Nigerian languages (of which the Gbe languages are a subcategory) all had SVCs very like the ones that emerged in their daughter creoles. McWhorter focuses on Saramaccan, which was Bickerton's prize example of a 'radical' creole, divorced from its lexifier by marronage. His arguments are equally valid for Saramaccan's close cousin, Sranan, however. He argues that the strategies Saramaccan employs instead of European-style prepositions are transferred wholesale from the fairly homogenous syntax of their substrates.

He shows that the work of prepositions being done by verb-like words that can take verbal inflection is not unique to creoles, but also occurs among the substrate languages, citing examples of Ewe vocabulary with both prepositional and verbal meanings (McWhorter 1992:25):

de 'reach' or 'to'.

di 'lay down' or 'down.'

tó "pass through" or "through"

fo xlā "surround" or "around"

McWhorter finds commonalities not just in the lexicons, but in sentence patterns. He demonstrates that SVCs from several substrate languages parallel the ones in Saramaccan. For example, Saramaccan and Ewe have almost identical syntax in instrumental (33) dative (34) and directional (35) constructions.

Saramaccan:

33a. a tei goni suti di pingo
 he take gun shoot DET pig

#a. 1. a tei goni suti di pingo
 ‘He shot the pig with the gun.’

Ewe:

33b. Àyí kè àtó tsò wónù
 Ayi take ladle pour soup
 ‘Ayi poured soup with a ladle.’

Saramaccan:

34a. Kofi bai soni da di mujee
 Kofi buy something give DET woman
 ‘Kofi bought something for the woman.’

Ewe:

34b. É- flè só ná -m
 he bought horse gave -me
 ‘He bought me a horse.’

Saramaccan:

35a. A waka go/kon a di opulani
 he walk go/come LOC DET airplane
 #c.1 A waka go/kon a di opulani
 ‘He walked to/from the airplane.’

Ewe:

- 35b. Wótsone yi Keta
 One.take.him go Keta
 ‘ One carries him to Keta.’

[McWhorter 1992:25]

The 11 potential substrate languages he surveys for SVCs like Saramaccan’s are as follows: Twi, Fon, Yoruba, Gã, Yatye, Igbo, Ijo, Nupe, Gbari, Fula, and Hausa (McWhorter 1992:6). He takes this list from Byrne (1987). He claims with Byrne that the majority of the slaves brought into Suriname during the period of the creole’s formation (i.e. before 1700) were from the West coast of Africa between Ghana and Nigeria, or from the interior of Nigeria, and bases his list of potential substrates on the language groups of that region.

Based on his survey of these languages, McWhorter concludes that while lexicons varied widely, the syntax, especially in regards to SVCs, is quite similar. He hypothesizes that the homogeneity of the substrate allowed common features (like SVCs) to be preserved in the pidgin and ultimately transmitted to the daughter creole (McWhorter 1992:20).

McWhorter argues that similarities between substrate and creole SVCs are highly significant, since not only are SVCs typologically rare and marked among the world’s languages, but African and Saramaccan SVCs share traits that set them apart from other SVC-using languages. He attempts to prove this with a cross-linguistic survey of SVCs,

looking at Austronesian SVCs as represented in Tolai, at Southeast Asian SVCs as represented by Thai, and at Mandarin SVCs. He argues convincingly that Tolai SVCs are typologically distinct from SVCs of the Saramaccan/Nigerian/Kwa type. However, in the case of Mandarin, he argues that it differs from Saramaccan primarily in having a greater number of verb-like prepositions which can indicate direction. Similarly, he differentiates Thai SVCs from those of Saramaccan on the basis of the Thai SVC system's greater complexity. Since Saramaccan is a creole, by his own definition it emerged from a compromise between many related SVC systems. It is only logical that the least common denominator of multitudinous substrates would end up with a simplified SVC system. Therefore its simplicity should not be taken as a conservative typological feature indicative of the system's origin. McWhorter does not compare the complexity of Chinese or Thai to that of any of the Kwa/Nigerian substrates. Even if he had, the argument that a more elaborate system based upon the same core strategies is clearly typologically distinct from its simpler counterpart is questionable at best.

I observe that Mandarin Chinese, for example, parallels Saramaccan prepositional syntax nearly as well as Saramaccan's Kwa/Nigerian substrates do. Like Saramaccan, Chinese uses SVCs where English would use prepositions to show direction, instrument, and dative case. Chinese resembles Saramaccan in another way as well: both languages use post-positions combined with a pre-nominal locative marker to show location (36-37)

Saramaccan location phrases:

- 36a. A wosu baka
 LOC house back
 'behind the house'

- 36b. A wosu dendu
 LOC house inside
 ‘inside the house’
- 36c. A wosu liba
 LOC house top
 ‘on top of the house’

(McWhorter 1992:35)

Compare the Saramaccan data in (36) with Chinese locational phrases (37).

- 37a. zài zhuōzi shàng
 LOC table top
 ‘on top of the table’
- 37b. zài jiā lǐ
 LOC house inside
 ‘Inside the house’

The structure is identical, despite the lack of any genetic relationship between the two languages. Likewise, Chinese SVCs can parallel Saramaccan ones very closely, as can be seen by comparing 34a and 35a with Chinese data (38).

- 38a. Tā nǎ shǒu cǎ hàn
 he take hand wipe sweat
 ‘He wipes sweat with his hand.’

- 38b. Wǒ gěi nǐ zuò chǎo fan
 I give you make fried rice
 ‘I’ll make you fried rice.’

[McWhorter 1992:22]

This flies in the face of McWhorter’s claim that Saramaccan, related creoles, and their substrates form a unique type of SVC-using language unattested outside their genetic family. However, this means that McWhorter’s argument is weaker, not that his hypothesis is necessarily incorrect.

Bickerton, in his (1994) rebuttal of McWhorter’s criticisms, points out that McWhorter’s model of the process of transfer from substrate to pidgin is remarkably vague. According to Bickerton, the creators of pidgins are faced with an incomprehensible and impenetrable mass of languages they do not speak, and are in no position to construct any sort of consistent syntax for the emerging pidgin, much less one that reaches a harmonious compromise between the countless substrate languages present. This leads inevitably to the structureless and chaotic syntax universal among pidgins (Bickerton 1994:67).

Having mocked such a concept of organized, deliberate functional transfer into the pidgin, Bickerton formulates a more reasonable model that would accommodate McWhorter’s hypothesis: each individual transfers structures from his own language, but if these relexified grammatical structures prove incomprehensible to the majority of his fellow pidgin-users, they are discarded, so that only the common syntactic patterns of the substrates are retained in the creole long-term (Bickerton 1994:68). In fact, this is somewhat like an embryonic version of Siegel’s (2008) model of functional transfer. Siegel similarly proposes that transfer proceeds in stages: at the individual level,

structures are transferred from the speaker's native language to the pidgin. This creates a pool of syntactic variants. Selection then operates on this pool on a community level, reinforcing those variants that everyone understands and uses and discarding the others.

Bickerton, having set up a model roughly like Siegel's, immediately criticizes it, citing an example where transfer did not unfold as such a model would predict:

Reinecke's (1971) study of the French-lexified pidgin *Tây Bồi*. *Tây Bồi*'s substrates are Vietnamese and a handful of closely related languages. But its grammar is neither like theirs nor like that of French, but inconsistent and rudimentary like any other pidgin (Reinecke 1971, cited in Bickerton 1994:68). If the substrate was so homogenous, why did transfer not occur? Is Siegel wrong?

In fact, Siegel's model fully takes into account the confusion and lack of syntax-building that Bickerton ascribes to early pidgin learners. Siegel posits that pidgins start out lacking syntax, but that when they expand and acquire fluent speakers who use the pidgin as their primary language, the demands on the pidgin's syntax increase. Speakers accordingly begin to spontaneously draw on their native languages for syntactic strategies to fill the gaps, and thus to transfer structures into the expanding pidgin (Siegel 2008:129).

Bickerton acknowledges that relexification of substrate structures with pidgin vocabulary sometimes occurred among "more-or-less fluent bilingual" speakers of a substrate and the pidgin (1994:67), which is just what Siegel hypothesizes; however, Bickerton does not even address the view that such transfer on the part of fluent pidgin speakers could radically shape the developing pidgin. He rightly scoffs at the idea of newly-arrived, linguistically floundering pidgin learners relexifying complex

constructions from their L1s into the pidgin as they acquire it. However, the fact that McWhorter does not provide a concrete model of transfer still does not invalidate his hypothesis, since the process of transfer is fully elucidated by Siegel.

The mechanics of transfer are not the only thing Bickerton accuses McWhorter of neglecting, however. He also points out that McWhorter's facts on the demographics of Suriname's pre-1700 slave population are out of date. More recent and thorough research (Postma 1970) reveals that 52% of the slaves were of Angola/Loango origin. The pool of Slave Coast languages that McWhorter surveyed and found to contain Saramaccan-like SVCs actually makes up 41% (Bickerton 1994:71). Therefore McWhorter's model of a homogeneously SVC-using substrate is grossly inaccurate.

Does this mean that the SVCs in Saramaccan and related creoles cannot be the result of transfer? If SVC-using languages made up a minority of the substrate, how could such transferred constructions be reinforced and retained in the pidgin? Yet again, applying Siegel's theories lets us resolve the problem. Relative number of speakers of the source language is not the only criterion for a variant's reinforcement. Also important are perceptual saliency and transparency – how easy a variant is to recognize and understand. Some kinds of morphemes, namely stand-alone words with invariant phonological forms, are naturally easier for L2 learners to acquire, all other things (such as parallels in L1) being equal.

McWhorter discusses this in terms of 'relative markedness', markedness referring to innate difficulty of acquisition. He takes the creole language Saõtomense and its substrates, as described by Ferraz (1979) as an example. Half of the substrates were isolating Eđo dialects with independent TMA markers. Half were highly agglutinative

Kikongo languages. The resulting creole developed independent TMA markers paralleling those of Edo, seemingly proving that it was easier for Kikongo speakers to learn to isolate than for Edo speakers to agglutinate. Nor was this a case of universal creole features, McWhorter argues. He cites Mufwene (1986) who showed that the uniformly agglutinating Kikongo substrate of Kituba gives it an agglutinative verbal system normally uncharacteristic of creoles (McWhorter 1992:18)

Thus, even if SVCs were transferred into the expanding pidgin by only a minority of speakers, they may have proved perceptually salient enough to be reinforced and retained, making their way into the creole. However, there is no proof that this is what occurred.

McWhorter attempts to prove with a cross-creolistic survey that creoles with SVC-using substrates are prone to use SVCs themselves, whereas those lacking SVC substrates are not (McWhorter 1992:27). However, there are other factors complicating the development of any creole, such as contact between the original pidgin and the lexifier, and later de-creolization. Such factors directly influence to what extent a creole has non-European features like SVCs, and make it hard to make comparisons between creoles with dissimilar sociohistories. In any case, the majority of creoles he surveys do have either West African, Chinese, Southeast Asian, or Austronesian substrates, and thus some opportunity to transfer, reinforce, and select serial verbs. The only ones that do not are Phillipine Creole Spanish and Senegal Creole Portuguese (McWhorter 1992:29). These languages do indeed both lack SVCs. However, that could easily be because of extensive lexifier influence in both cases. Bickerton points out that Portuguese and Spanish slave owners, though equally cruel, tended to distance themselves less from their

slaves than English and French, and thus provided more linguistic contact (1994: 74.) With only two examples, it is difficult to determine with any certainty whether lack of SVCs is due to lack of substrate models or to too much lexifier input.

McWhorter's assumptions about substrate languages may have been erroneous, his arguments for a unique African/Caribbean SVC type weak, and his survey of SVCs across creoles inconclusive. However, he may nonetheless have been correct. SVCs may be a syntactic feature that transfers from substrate to expanding pidgin according to Siegel's model. If it is reinforced because of its perceptual saliency, permanent transfer into the creole would occur even when SVC-users are a minority of pidgin-speakers. This would explain the presence of SVCs in so many creoles, even ones where the numerically dominant substrate lacked SVCs.

7. Conclusion

Both in the domain of TMA marking and of SVCs, Sranan conforms fairly well to both Bickerton's and Siegel's predictions. Although the overall pattern did not conclusively show either to be incorrect, Bickerton's analysis proved more vulnerable to criticism.

In the case of TMA marking, Winford and Migge detected substantial substrate influence. They found Gbe parallels for four of Sranan's five TMA markers, the main deviation from Gbe substrate TMA patterns being the presence of anterior/relative past tense marking (*ben*). *Ben*, however, may be merely an auxiliary verb, as Adamson and Smith (1995:225) suggest. Bickerton's predictions about TMA were not born out: Adamson and Smith's proof that *ben* and *sa* are auxiliary verbs, not TMA particles,

means that of Bickerton's three predicted TMA particles, two (anterior tense and irrealis mood) are missing from Sranan.

In the area of serial verbs, Siegel's hypothesis also fares well: SVCs that structurally resemble Sranan's are common to a sizable portion of the substrate. If SVCs are more perceptually salient than case-marking, prepositions, and their other counterparts, their retention in the creole is fully explained by Siegel's model.

However, the presence of SVCs is also fully explained by Bickerton's model, wherein SVCs arise to fill gaps in the language bioprogram-generated creole grammar.

While the language bioprogram hypothesis fully explains why SVCs arise in creole grammars, it does not offer convincing explanations of the syntax underlying SVCs. The syntactic creole universals Bickerton proposes fit badly with the semantics of SVCs. Bickerton's syntactic claims are also hard to verify; their central prediction is that infinitives and participles are absent from creole grammars, but in languages with isolating syntax, like Saramaccan, Sranan, and other creoles, infinitives and finite verbs cannot be easily distinguished.

However, Bickerton's predictions are so vulnerable in part because they are simple and specific: he creates a single generative grammar and proposes a single system of verbal inflection for all creoles, and the only variation allowed for is in the direction of the lexifier. Siegel attempts to create equally specific predictions, but the sheer complexity of his model makes this difficult. When variants from all the substrates present compete to be selected, with each selection taking into account many rather abstract criteria (i.e. perceptual saliency, target availability), it is easy to explain any prediction errors as failures of the theory's application, rather than failures of the theory

itself. Were the correct substrates taken into account? Is each instance of transfer being traced to its proper source language?

Bickerton's bioprogram has weaknesses too: like any good theoretical explanation, it was constructed with the data in mind. The bioprogram is made to best fit relatively pure creoles like Sranan, so how significant is the fact that Sranan more or less bears out Bickerton's predictions? The less like Saramaccan a creole is, the more Bickerton judges it to be contaminated with lexifier influence. However, greater lexifier input is not necessarily the only factor differentiating languages like Hawaiian Creole (considered by Bickerton (1984:182) to be a less pure creole) from Sranan and Saramaccan.

Whether Bickerton's LBH is one hundred percent correct or not, however, its central message rings true: nativization seems to be an important factor in the evolution of creoles. Even Siegel's more substrate-based approach relies on L1-acquiring children to smooth out inconsistencies and create a cohesive natural language out of the expanded pidgin. It also seems to be true that whether because of preferential selection of unmarked substrate-derived features, or because of innate bioprogram-dictated settings, creoles tend to converge on a similar type – one characterized by independent TMA markers, isolating syntax, and often SVCs. Both Siegel's and Bickerton's explanations for the emergence of this type have merit. Mufwene's 'basilection' process of language evolution, however, does not explain why creoles tend to develop these features, whereas normally evolving languages only rarely do. Therefore it seems likely that the factors that shape creole genesis are either substrate features, bioprogram-based universals, or some combination of the two. Based on the results of this examination of Sranan TMA and SVCs, substrate influence plays a prominent role.

Works Cited

- Aboh, E. O. (2004). *The Morphosyntax of Complement-Head Sequences: Clause Structure and Word Order in Kwa*. New York: Oxford University Press.
- Adamson, L., & Smith, N. (1995). Sranan. In J. Arends, P. Muysken & N. Smith (Eds.), *Pidgins and Creoles: An Introduction* (Vol. 15, pp. 219-132). Amsterdam: John Benjamins.
- Arends, J. (1992). Towards a Gradualist Model of Creolization. In F. Byrne & J. Holm (Eds.), *Atlantic meets Pacific: a global view of Pidginization and Creolization* (pp. 371-380): John Benjamins.
- Arends, J. (1995). The socio-historic background of creoles. In J. Arends, P. Muysken & N. Smith (Eds.), *Pidgins and Creoles: An Introduction* (Vol. 15, pp. 15-24). Amsterdam: John Benjamins.
- Arends, J., Kouwenberg, S., & Smith, N. (1995). Theories focusing on non-European input. In J. Arends, P. Muysken & N. Smith (Eds.), *Pidgins and Creoles: An Introduction* (Vol. 15, pp. 99-109). Amsterdam: John Benjamins.
- Bickerton, D. (1984). The Language Bioprogram Hypothesis. *The Behavioral and Brain Sciences*, 7, 173-221.
- Bickerton, D. (1994). The Origins of Saramaccan Syntax: A Reply to John McWhorter's "Substratal Influence in Saramaccan Serial Verb Constructions". *Journal of Pidgin and Creole Languages*, 9(1), 65-77.
- Cairo, E. (1969). Temekoe. Paramaribo.
- Chomsky, N., & Lasnik, H. (1993). Principles and Parameters Theory. In J. Jacobs, A. v. Stechow, W. Sternfeld & T. Vennemann (Eds.), *Syntax: an International Handbook of Contemporary Research*. Berlin, New York: Walter de Gruyter.
- den Besken, H., Muysken, P., & Smith, N. (1995). Theories focusing on the European input. In J. Arends, P. Muysken & N. Smith (Eds.), *Pidgins and Creoles: An Introduction* (Vol. 15, pp. 87-98). Amsterdam: John Benjamins.
- Ferraz, L. I. (1979). *The creole of Sao Tome*. Johannesburg: Witwatersrand University Press.
- Li, A. (1990). *Structure and Constituency in Mandarin Chinese*: Kluwer Academic Publishers.

- McWhorter, J. (1992). SUBSTRATAL INFLUENCE IN SARAMACCAN SERIAL VERB CONSTRUCTIONS. *Journal of Pidgin and Creole Languages*, 7(1), 1–53.
- Mufwene, S. S. (2009). Restructuring, hybridization, and complexity in language evolution. In E. O. Aboh & N. Smith (Eds.), *Complex processes in new languages* (pp. 367-395). Amsterdam; Philadelphia: John Benjamins Pub. Co.
- Mufwene, S. S. (2010). SLA AND THE EMERGENCE OF CREOLES. *Studies in Second Language Acquisition*, 32(3), 359-400.
- Muysken, P., & Smith, N. (1995). The study of pidgin and creole languages. In J. Arends, P. Muysken & N. Smith (Eds.), *Pidgins and Creoles: An Introduction* (Vol. 15, pp. 3-8). Amsterdam: John Benjamins.
- Postma, J. (1970). *The Dutch participation in the African slave trade*. (PhD), Michigan State University, East Lansing, Michigan.
- Sebba, M. (1987). *The Syntax of Serial Verbs; An Investigation into Serialization in Sranan and Other Languages* (Vol. 2). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Siegel, J. (2008). *The emergence of pidgin and Creole languages*. Oxford; New York: Oxford University Press.
- Taylor, D. (1961). New languages for old in the West Indies. . *Comparative Studies in Society and History*, 3, 277–288.
- Thompson, R. W. (1959). *A note on some possible affinities between the creole dialects of the Old World and those of the New*. Paper presented at the Conference on Creole Language Studies, London.
- Trefossa, H. F. d. Z. (1957). *Trotji. Puema*. Amsterdam.
- Voorhoeve, J. (1962). *Sranan Syntax*. Amsterdam: North-Holland Publishing Company.
- Voorhoeve, J., & Lichtveld, U. (Eds.). (1975). *Creole Drum: An Anthology of Creole Literature in Surinam, with translations by Vernie A. February*. New York, London: Yale University Press.
- Wilson, R., and Ann M. Peters. (1988). What Are You Cookin' on a Hot?: Movement Constraints in the Speech of A Three-Year-Old Blind Child (Vol. 64, pp. 249-273): Linguistic Society of America.

Winford, D., and Bettina Migge. (2007). Substrate influence on the emergence of the TMA systems of the Surinamese creoles. *Journal of Pidgin and Creole languages*, 22(1), 73 -99.