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Our creolized tongues

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It is often assumed that creole languages represent 'exceptional' language development in which a contact language or a variety largely spoken by late L2 learners nativizes and becomes the main language of a community. It is therefore not uncommon that scholars of contact languages or revitalized languages (e.g., Hebrew) ask whether such languages are creoles or not. The common assumption is that so-called creoles exhibit certain specific linguistic features which distinguish them from other non-creolized languages, and which could be used as a yardstick to evaluate the status of other languages as creoles. But, what if any given language is a creolized form of a pre-existing language spoken by previous generations? In this paper, I argue that language acquisition always happens in a situation of contact comparable to creole contexts, in which learners are faced with heterogeneous inputs and recombine competing linguistic features into new linguistic items. Under this view, all natural languages involve a hybrid grammar. I further discuss how recombination leads to linguistic variation both at the learner's and population level.

1. Introduction

In linguistic textbooks, creole languages are commonly defined as nativized vernaculars that emerged out of 'intense' contact situations in which adult speakers (and their offspring) develop a new language in order to meet their communication needs. In ordinary situations, language instinct drives L1 acquisition: the development of a mental grammar whose extension may serve communication. Common L1 learners therefore do not have to worry too much: an ancestral language is transmitted to them through their parents. The received doctrine is that creole children (together with their parents) have a different task: the development of a brand new linguistic system that primarily serves communication within a community that has no common language. Since there is no intergenerational transmission involved, creole languages would illustrate a break in transmission or radical transmission failure as well as linguistic creation (cf. Aboh & DeGraff 2016). As such, these

languages would require a different explanation from the one generally provided to account for successful linguistic transmission from older generations to new ones, the kind of transmission on which the traditional *stammbaum* tree is based. In addition, creoles display selected grammatical aspects of the typologically different languages that came into contact during their formation. Traditional linguistic theory has no descriptive tools for such contact-induced linguistic development. The peculiar status of creoles within linguistics is apparent even in descriptions that are otherwise nuanced, such as the one offered by Vellupilai's (2015:66) summary:

> Creoles are languages that arose in situations of intense contact. They are mother tongue languages of entire communities and can fulfil any and all functions of human language. They typically derive the main part of their lexicon from one or a few languages, typically that (or those) which was spoken by a politically dominant minority in the settlements […] Creoles are typically assumed to be less complex than their input languages, with a simplified phonemic and morphological system, and a semantically more transparent grammar and lexicon.

Once we remove the expressions 'intense contact', 'less complex' 'simplified', or 'transparent' which often co-occur with the word *creole*, it appears that this definition would suit any spoken or signed standard language. Given what we know from evolutionary biology, migration and contact have always been at the heart of human evolution. Accordingly, the notion of contact *per se* does not make creoles any different from other human languages. However, since some scholars assume implicitly or explicitly that creoles are somehow different, various expressions (e.g., intense contact, simpler or transparent grammar, e.g., Bickerton 1981, 1988, 2008) are recruited in defining the linguistic contexts in which creoles emerge, and their grammatical structures in comparison to other languages. Yet, we have no metric of intensity of contact or linguistic simplicity/complexity/transparency that would support the relevance of such expressions in the definition of creoles. Once we abandon these definitions of creoles, however, we can take a different perspective and ask ourselves, what these relatively young languages can tell us about general human cognitive processes that explain acquisition and language change. What if all languages are creolized forms of pre-existing languages spoken by previous generations? That is, what if the development of any community language necessarily involves a situation of contact between individuals (and sometimes between populations with different cultural and linguistic backgrounds) in which language learners restructure the inputs they are exposed to, and in which some variants are retained while other are lost?

I contend that answering these questions provides us with a unique chance to understand language acquisition and speciation: how grammars emerge in the mind of a learner, and how new vernaculars evolve into community speech.

Understanding creole formation therefore not only informs us on the human language capacity, but sheds light on the roots of typological variation. The view I am defending here suggests that traditional methods of establishing language filiation in which language offspring descend from a single mother node, must be refined to include contact and restructuring as important factors in acquisition and language diversification. In order to make this point, Section 2 discusses the notion of creolization and shows that the process is in fact contingent on language acquisition. I argue that so-called creole languages emerged in multilingual situations that are not qualitatively different from those of modern urban societies. In creole societies as well as in modern urban societies, learners are engaged in the same cognitive process during acquisition: recombination of linguistic features. This basic cognitive process allows learners to select relevant linguistic features from a heterogeneous input which they recombine into new linguistic elements. Because recombination operates on heterogeneous inputs, it yields hybrid grammars. Section 3 further discusses the notion of linguistic hybridism, how syntactic recombination leads to the creation of new variants, and how such variants may spread within a speech community given the right circumstances. I argue that during acquisition, learners are exposed to heterogeneous inputs from which they select relevant linguistic features that are recombined into their mental grammar whose extension is their idiolect. While the latter shares some family resemblance with other idiolects within the population, each idiolect embeds subtle differences or innovations. Because learners may make similar learning hypotheses about the inputs, some innovations may converge, and when they do, their cumulative effect may lead to language change (at the population level). Section 4 deals with the formalism of recombination of syntactic features given current morpho-syntactic theories. The discussion there shows that if we adopt the traditional views that functional morphemes embed three components to be acquired (i.e., morpho-phonology, morphosyntax, semantics), and that functional morphemes drive syntactic derivations, then acquisition of each functional morpheme systematically generates variants that compete within the inputs. While the discussion in this section may suggest that the process of recombination is completely free, Section 5 investigates possible constraints on recombination. It is shown on the basis of typological studies, that the process of recombination is not free. Indeed, the discussion there indicates that languages display a rigid Tense, Mood, and Aspect (TMA) system in which temporal, modal, and aspectual expressions follow a rigid semantic hierarchy cross-linguistically. It is therefore proposed that the TMA system might be immune to recombination. In this regard, Section 6 suggests that the constraints on the TMA system seem not to hold for the complementizer domain (CP). This view is supported by partial evidence from Saramaccan. This creole language emerged in Suriname in the 17th century out of the contact between Portuguese Jews and their slaves who

migrated from Brazil, English (and possibly other European) colonists, and successive cohorts of enslaved Africans, speakers of Niger Congo languages, namely, Bantu languages (e.g., Kikongo) and Kwa languages (e.g., Gbe) of West and Central Africa. The discussion shows that while Saramaccan TMA system complies with the general pattern found in its source languages as well as in typological studies, number agreement within the CP domain of relative clauses indicates a new morphosyntactic pattern that is not found in the input languages. This is taken to be evidence that the CP domain may be subject to more structural variations underlying typological variation. Section 7 concludes the paper.

2.   Everyone speaks a creolized language

The first two lines of Vellupilai's (2015: 66) summary quoted in Section 1, restate the common assumption that creoles emerge from nativized Pidgins or contact languages. As this author discussed extensively in Chapters 1 and 2 of her book, the idea is not new nor is it uncontroversial. In Hall's (1962) description, for instance, creoles are said to differ structurally and socially from Pidgins because they were nativized by children who spoke them as their primary languages. The accepted wisdom is that nativization explains how and why creoles acquire features of natural languages that are assumed to be missing from Pidgins.[1] The latter are regarded as makeshift communicative strategies created by adults for specific functions (e.g., trade, work, war, etc.). Accordingly, a Pidgin does not have a native speaker, while a creole does. Hall's Pidgin-to-Creole Cycle is depicted in Figure 1.

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[1]   There have been several books on the structural make-up of pidgins, in comparison to creoles and other languages assumed not to have emerged out of contact (e.g., Bickerton 1984, 1988, 2008; Arends et al. 1995; Spears & Winford 1997; Siegel 2008, and references therein). These studies typically characterize pidgins in terms of grammatical properties that they lack (see e.g., Vilupillai 2015 Chapter 1 for an overview). To the best of my knowledge, however, no study has shown that an existing pidgin lacks predication. Yet, any language with predication can virtually express all humanly conceivable meanings. It therefore appears that the general assumption that pidgins are extremely restricted languages is only based on the fact that they do not exhibit overt grammatical morphology (or distinctions) that are generally observed in Indo-European languages.

Taking Indo-European as a unique language matrix, as is often done in linguistics, is misleading. Likewise, modern morpho-syntactic theory has shown that absence of overt morphology or grammatical marking does not necessarily correlate with absence of structure (i.e., grammar). I therefore conclude that while terms such as Pidgins, Creoles, Mixed Languages may be conveniently used by some authors to refer to languages that develop in particular ecologies, they tell us nothing about the structural make-up of these languages, and even far less about whether these languages involve simplified or complexified structures (cf. Aboh (ed.) 2017).
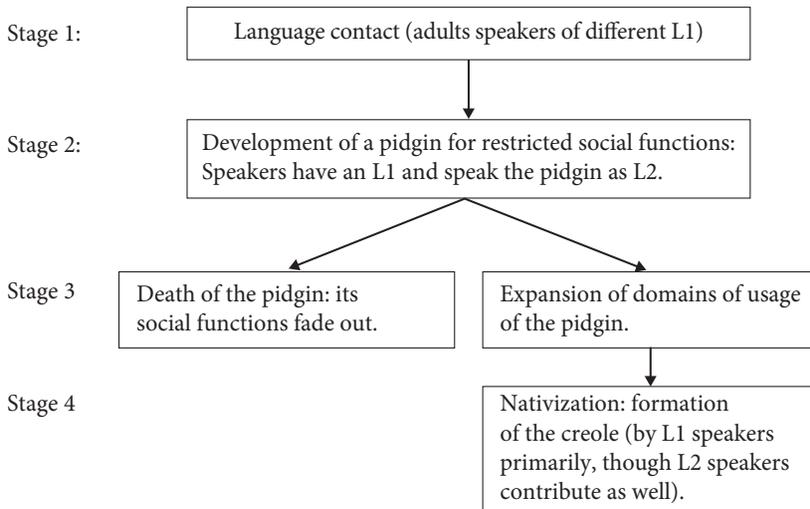
Stage 1:
┌───┐
│ Language contact (adults speakers of different L1) │
└───┘

Stage 2:
┌───┐
│ Development of a pidgin for restricted social functions: │
│ Speakers have an L1 and speak the pidgin as L2. │
└───┘

Stage 3
┌─────────────────────────────┐   ┌─────────────────────────────┐
│ Death of the pidgin: its   │   │ Expansion of domains of usage │
│ social functions fade out. │   │ of the pidgin.   │
└─────────────────────────────┘   └─────────────────────────────┘

Stage 4
                                    ┌─────────────────────────────┐
                                    │ Nativization: formation   │
                                    │ of the creole (by L1 speakers │
                                    │ primarily, though L2 speakers │
                                    │ contribute as well).   │
                                    └─────────────────────────────┘

Figure 1. The pidgin-to-creole cycle.

In this representation, stage 3 is crucial in determining whether the pidgin will acquire new speakers, extend to new domains, and become a target of acquisition by children growing up in the community. Hall's Pidgin-to-Creole scenario belongs to a school of thought that emerged in the 17th century (e.g., Pelleprat, Father Pierre 1655) and was revived in the 20th century (e.g., Hugo Schuchardt 1914; Leonard Bloomfield 1933; Bickerton 1981, 1988, 2008). In terms of this view, creoles carry their origin on their sleeves: they exhibit specific linguistic features which distinguish them from other non-creolized languages, and which could be used as a yardstick to evaluate the creoleness of other languages, including 'new' languages (e.g., sign languages). Often mentioned creole features are a near absence of contextual agreement (e.g., gender, verbal morphology), a rigid TMA system involving free morphemes, a lack of adpositions somehow compensated by serial verb constructions, and a tendency to analytic structures that seem to correlate with compositional (and transparent) semantics.

The Pidgin-to-Creole scenario has generated a lot of discussion in the literature, which I will not recapitulate here, other than saying that the fact that some emerging vernaculars nativize over generations (e.g., Tok Pisin) seems to be a common developmental path in language evolution. Yet, we need not assume that such an evolution requires a pidgin phase (i.e., an extremely simplified makeshift language). I refer the interested reader to Muysken (1988, 2013), DeGraff (1999, 2001, 2005, 2009), Mufwene (2001, 2005, 2008, 2010), Aboh (2015a, 2016a), Aboh and DeGraff 2016), and references cited there for a discussion. Here, I only stress that theories of creolization that posit a pidgin phase (cf. Figure 1) raise numerous questions hardly

discussed in the literature: What is the profile of early pidgin L1 learners: are they monolingual or (simultaneous) bilingual learners? What type of inputs is necessary for acquisition in a pidgin-setting (keeping in mind that pidgins are assumed to be extremely restricted)? What makes pidgin L1 learners aware of the gaps in the linguistic system they are exposed to, and drives them to compensate these gaps by developing a full-fledged language? If we think of the totality of human thoughts that learners might need to communicate through language, it is obvious that all natural languages fail to provide us with ready-made grammaticalized means to communicate all possible human thoughts. Yet, children do not generally engage in filling in these potential gaps to make their language more fit. Therefore, how does the pidgin child know her language is deficient and can be fixed by adding more complex structures?

These questions require us to step back and reflect on the contexts in which new contact vernaculars later to be labelled as creoles emerged. As already discussed in the literature, creoles generally emerged in multilingual societies and cannot be said to have nativized because their speakers lacked the linguistic resources needed for communication, or else were in need of a unique communal language. Instead, creoles develop because the speech community to which they belong accepts them as a legitimate speech form and uses them in daily activities. In terms of Aboh (2015a, 2016a), such favourable social contexts allow new vernaculars in general to expand and compete with other community languages, and subsequently become a target for L1 learners. This process of competition and selection allows an increasing number of learners of different profiles to appropriate the emerging vernacular, thus enriching its lexicon and grammatical structure.

This view is compatible with the fact that Caribbean creoles emerged from an interaction between learners of different profiles in multi-language societies involving various interactions between the colonist community and the enslaved community as described in Figure 2. Note that the multilingual nature of these communities is similar to that of modern urban societies (whose development we owe partly to 17th–18th plantation societies preceding the industrial revolution).

These tables should be read as describing more dynamic adult-adult, child–child, and adult-child interactions within and across the different communities on the plantation. Such interactions are partly determined by socio-cultural and political factors, and partly by population dynamics on the plantation (e.g., newly arrived versus prior settlers or locally born inhabitants cf. Aboh 2015a, Chapter 4). The interaction between these different learner profiles (i.e., L1-learners, simultaneous bilinguals, and consecutive bilinguals) produced a continuum of three language varieties that generally developed in colonial settings:

COLONIST COMMUNITY	
Adult and young L1 and L2 speakers of different varieties of the colonial language. Contact between colonial varieties leads to the emergence of a colonial standard.	2L1 children exposed to: – Emerging colonialstandard – L2 approximations produced by non natives – African languages

ENSLAVED AFRICAN COMMUNITY	
Adult and young L1 and L2 speakers of different varieties of: – African languages – L2 approximations of the emerging colonial standard	2L1 children exposed to: – Emerging colonial standard – L2 approximations produced by non natives – African languages

Figure 2. Multilingual plantation societies

i. A colonial standard (e.g., American English, Australian English, Jamaican English).
ii. A distant variety based on L2 approximations (e.g., African American Vernacular English, Kriol, Jamaican creole).
iii. Vestiges or archaic forms of Indo-European, African, or Amerindian languages (typically used in symbolic contexts or specific communities, e.g., High German in Amish communities, e.g., Kraybill et al. 2013 or African languages in Maroon communities of Suriname, e.g., Price 2008).

As this description suggests, plantation societies did not produce creoles because of lack of a common language (as often claimed in the literature). These populations formed multilingual communities in which individuals entertained various competing vernaculars that were useful in different social contexts. The process of competition and selection between these vernaculars which, in many instances would have favoured code-switching, further led to the emergence of new varieties later to be defined as creoles. I submit that, on the plantation colonies in the Caribbean as everywhere else, such varieties emerge gradually from the cumulative effect of converging idiolects, which produce similar outputs serving as inputs for subsequent generations of learners. As has already been shown in the literature, however, the structure of the population can affect the speed of such a linguistic development as well as the structure of such a language (cf. Nettle 1999; Kusters 2003; Dahl 2004; Wichmann & Holman 2009; Lupyan & Dale 2010; Trudgill 2011). With this caveat in mind, I conclude that the emergence of a new vernacular in a multilingual setting is an instantiation of creolization: the development of individual

mental grammars based on the recombination of linguistic features selected from heterogeneous inputs: a process that leads to hybrid grammars. But how do these hybrid grammars develop in the first place?

3. Language acquisition and creolization: Linguistic hybridism

In light of Aboh (2015a), this paper makes the following working hypotheses:

1. During acquisition, leaners are exposed to heterogeneous inputs from which they learn to master multiple linguistic sub-systems allowing communication in the community.
2. Learning partly results from a basic cognitive process: *recombination*, which enables learners to merge linguistic features selected from the inputs into new variants.[2]
3. Recombination feeds on heterogeneous inputs, its outputs are hybrid constructs, hence the emergence of hybrid grammars.

These working hypotheses derive from Aboh's (2015a) observation that acquisition necessarily happens in a situation of contact that involves idiolects of closely related languages (e.g., different varieties of English in England) or genetically and typologically different languages (e.g., English, Mandarin Chinese, and Cantonese in Hong Kong). To illustrate this point, Figure 3, based on Mufwene's (2001) ecological model, exemplifies a potential learning setting of a child acquiring her language in a multilingual environment.

    This figure is an idealised description of a much more dynamic learning context in which the learner may be exposed to different variants at different stages during acquisition.[3] In this figure representing learning contexts (e.g., in an urban zone), the upper bubbles represent three possible varieties that determine the pool of variants available to the learner (the middle bubble), and from which she develops a mental grammar (the lower bubble) (Mufwene 2001, 2008; Aboh 2006, 2009, 2015a; Ansaldo 2009; Aboh & DeGraff 2016). As the figure shows, the inputs appear too

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2. This view reminds us of Dana Lardiere's *Feature Reassembly Approach* to second language acquisition, but differs crucially in that it applies to both first and second language acquisition and generates hybrid grammars.

3. It is also important to realize that in most multilingual communities of the world, in which coexisting languages are mutually exchangeable in daily life, learners do not experience the 'one parent one language' restrictions typical of bilingual families in Western countries. For such learners therefore, co-existing varieties may all compete for the same communicative settings, thus resulting in a much more dynamic feature pool.
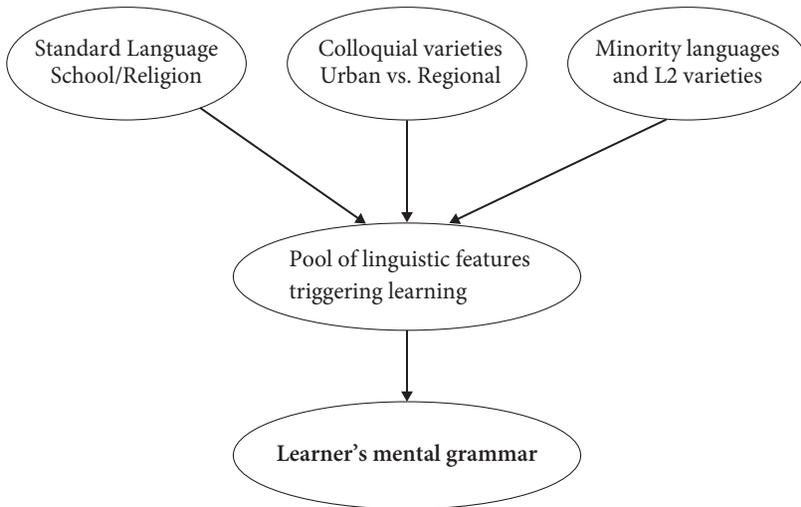
Figure 3. Potential learning contexts of a child

varied to be replicated faithfully. The learning task therefore consists in extracting from these varying inputs relevant subsets of combinations that yield grammatically converging outputs, which in turn guarantee successful communication. This is possible because the learner has the capacity of making and evaluating learning hypotheses based on the data pool: successful hypotheses are retained while unsuccessful ones are eliminated. Since not all learners are exposed to the same set of inputs and are therefore not necessarily engaged in the same learning hypotheses at the same time, we have an explanation for why languages change constantly. Learners do not derive identical mental grammars from the pool of linguistic features. Accordingly, language change (in the diachronic sense) occurs when more speakers converge toward a new communal norm (i.e., similar externalisations based on individual learning hypotheses). The emergence of such communal norms however should not hide the fact that at the individual level, learners develop distinct mental grammars that compete (Kroch 1989, 2001; Kroch & Taylor 1997; Roeper 1999; Wallenberg 2016). Language change at the learner's level is therefore contingent on learning: Everyone speaks a creolized version of an older language!

The following dialogue I overheard on a plane from Amsterdam to Paris on my way to Jerusalem – for the conference *Language Contact, Language Continuity and Change, and the Emergence of Modern Hebrew* – is a perfect illustration of the learning context depicted in Figure 3. I boarded the plane followed by a mother and her boy of about four years old. They were seating behind me, and below is an extract of their conversation.

(1)   Child: Mami, mami ik heb dorst!
              'Mum, mum, I'm thirsty!'

(2)   Mother: Lali, *reste tranquille, j'ai pas* **drink** *ici*,
              Lali, keep calm, I don't have any drink here,
              ils vont donner **drink-la** *après*, wacht, pardon!
              they will serve drinks afterward. Wait, please
              ….

(3)   Mother: Blijt stilt, [☺✋♟✈❋☝⌛!!!].
              keep calm [unidentified language]

In this dialogue, the child speaks in Dutch, but the mother responds using code-mixing. Her answer involves French (in italic) as well as the word *drink*, which could be a merger of Dutch and English.[4] This word occurs as a bare noun, and is not preceded by any quantifier as one would expect in the English example *I don't have any drink*, nor is this word preceded by a preposition as would be the case in the French example *je n'ai pas de boisson ici* (Lit. I don't have of drink here). Instead, it seems as if this French string follows the pattern of Dutch/English negative expressions like *ik heb geen drank* or *I have no drink*. In the following sentence, this speaker makes use of the postnomial determiner *la*, which has been shown to encode topicality as well as other discourse functions in Québéquois French (Dostie 2007), in many French-based creoles (e.g., Haitian, cf. Aboh & DeGraff 2014), as well as in the so-called *Français populaire* in Africa. Such an NP-*la* sequence is ungrammatical in standard French. As a continuation to her two sentences in (2), this mother continues in Dutch, followed by a string in some African language which I could not identify firmly, and which I represent here by the bracketed symbols [☺✋♟✈❋☝⌛!!!]. We can infer from this short dialogue that the child's dominant language is Dutch: his utterance contained no code-mixing, and I did not hear him speak any other language than Dutch during the hour flight to Paris. However, the mother's production includes code-mixing between Dutch, French, and some African language (cf. Muysken 2000). In addition, some innovative patterns (e.g., *drink-la*) occur in her French, which in some contexts seems to follow Dutch or English grammar. We therefore face a situation in which the child is continuously exposed to a relatively wide range of typological patterns on which part of his learning hypotheses will be based. Though this child will grow up speaking Dutch natively, it seems to me reasonable to assume that his mental grammar(s) will not emulate those of his mother. At the same time, these mental grammars will be different from those of a child exposed to a different set of combination, for instance, Dutch, Mandarin Chinese, and English, or Dutch, Frisian, and English,

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4.   The verb for 'drink' in Dutch is *drinken*, and the word for the noun 'drink' is *drank*.

etc. While children growing up as multilinguals in urban zones may appear to some as exceptions, I submit that the situation is far more common than usually assumed in studies on language acquisition. Language acquisition in such multilingual contexts is very common in urban zones in Africa and South East Asia. Due to rural exodus and world migrations favoured by globalization, such situations will necessarily increase and soon become the norm, hence the need for a theory that studies acquisition and change in its entire complexity. The view I develop in this paper is a step in this direction.

Indeed, various studies on the Flemish regiolect, *tussentaal* (De Caluwe 2007; Haegeman 2009; Ghyselen 2016), have shown that children growing up in a society in which closely related dialects are spoken on a daily basis along with the standard are also exposed to very heterogeneous inputs from which they may create a new variant. I conjecture that the same can be said of children living in societies in which various colloquial varieties (or registers) coexist with the standard. If we take Figure 3 to be representative of any natural context of untutored acquisition, it follows that recombination feeds on heterogeneous inputs that are in a state of flux, and its outputs are hybrid linguistic constructs. Summarizing the discussion thus far, I conclude that:

i.   Learners of a community (not being exposed to the same inputs) do not develop identical monolithic grammars, *hence individual variations.*
ii. Populations of learners are heterogeneous agents producing heterogeneous inputs to which subsequent learners are exposed (cf. Niyogi & Berwick 1995).
iii. Learners do not reproduce the input in its entirety: not all linguistic features present in the inputs will be selected under recombination. This further implies that linguistic features are not all equally successful during competition and selection.
iv. The language acquisition device does not seem to seek perfect replication of the relevant input in its entirety.[5]

The discussion further shows that with regard to the individual learner, the subject of linguistic inquiry, acquisition in a multilingual context (as described here) is

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5. The main point here is that language acquisition does not consist in reproducing all the properties of a given input faithfully. Even though children are remarkably good at detecting subtle aspects of the input and thus acquiring properties of language that are generally beyond adult L2 learners' aptitude (e.g., Wexler 1998; Miesel 2011; Weerman 2011), this should not be taken, however, as evidence that they reproduce all aspects of the input faithfully. Indeed, a learner designed to reproduce all aspects of the input will be necessarily very slow because subject to any change in this input. Such learner will also not be efficiently adaptive to human communication settings, which I have shown typically involve heterogeneous inputs in flux.

formally indistinguishable from acquisition in a so-called creole setting. With this in mind, let us now discuss how we can formalize the concept of recombination.

4.   Recombination of syntactic features

I assume, following the generative tradition, that functional items drive syntactic derivation (Borer 1984, 2005; Chomsky 1995). Aboh (2015a) explains how recombination of linguistic features underlies the emergence of the lexicon in contact languages (e.g., creoles). Suppose lexical items (including functional elements) embed three components: phonology, morphosyntax, and semantics.

During acquisition, features pertaining to these components are recombined individually, based on the learner's hypotheses over the inputs she is exposed to. This process is responsible for variation within and across individuals (see also Embick 2015 and related work in Distributed Morphology on decomposing the morpheme, and Seifart 2015 on affix borrowing).

Phonological recombination results in different pronunciations across speakers or dialects. A case in point is the realization of the Dutch sound /r/. Sebregts (2015) identifies some twenty variants within and across speakers, some of which correlate with stylistic and sociolinguistic factors.

Morphosyntactic recombination can be exemplified by the *zij/hun* alternation in subject position in Dutch (e.g., *zij/hun hebben het gedaan* 'they have done it') in which some speakers restructure the standard pronominal system thus allowing *hun*, an object form, in subject position (cf. Weerman 2003).

Semantic changes are exemplified by the variation between *goûter* 'taste' in standard French versus Belgian French where one can say *Cela vous goûte-t-il*? (lit. 'Does this taste you?') to mean 'Do you like it?' in a way similar to Belgian Dutch (*Smaakt het*? 'Does it please you?' p.c. L. Heageman 8-8-2015).

Finally, Aboh (2007, 2009, 2015a) shows on the basis of Saramaccan (a Suriname creole of which the main source languages include English, the Gbe, and Kikongo languages, cf. Smith 1987; Arends 1989) that all three aspects of the triplet in Figure 4 can be affected during language creation, as suggested by the verb 'eat' described in Figure 5.

In this description, the features of three different languages recombine to form a single item: *njan*. Phonology is presumably retained from Wolof, *ñam* (N. Smith p.c. 15-05-2013). In Wolof, this word functions as a generic noun meaning '*food*' but it can also be used as a transitive verb meaning '*to taste something*'. Morphosyntax is retained from English: Saramaccan *njan* occurs in (in)transitive contexts unlike in Wolof and in Gbe. In Gungbe, for instance, the verb *ɖù-nú* 'eat-thing' is strictly transitive because it belongs to the class of so-called inherent complement verbs,
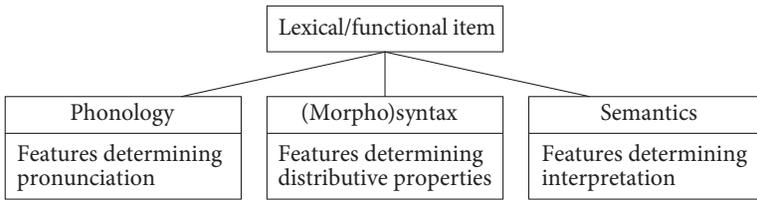
Lexical/functional item		
Phonology	**(Morpho)syntax**	**Semantics**
Features determining pronunciation	Features determining distributive properties	Features determining interpretation

Figure 4. Lexical/functional item

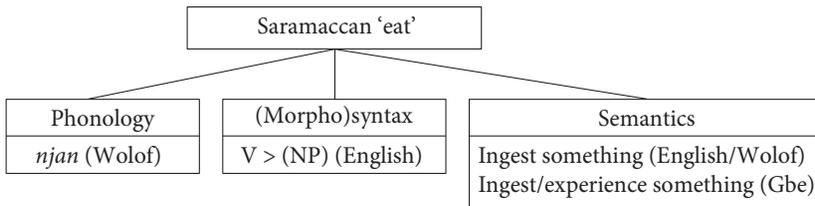| Saramaccan 'eat'		
Phonology	**(Morpho)syntax**	**Semantics**
njan (Wolof)	V > (NP) (English)	Ingest something (English/Wolof) Ingest/experience something (Gbe)

Figure 5. The verb 'eat' in Saramaccan

which require an object in their citation form, hence the NP *nú* (thing) functioning as object (cf. Essegbey 1999; Aboh 2015b). Despite such a morphosyntactic difference, Saramaccan and Gungbe productively use the verbs *njan* and *ḍù* in constructions like (4) which show that these verbs share semantic features not covered by English 'eat'.

(4) a. Maku   njan mi.   [Saramaccan]
    b. Òmú   ḍù   mì.   [Gungbe]
       Mosquito eat   me
       'A mosquito bit me.'
    c. Hedi ta   njan mi   [Saramaccan]
       head PROG eat   me
    d. Tà   nɔ̀ ḍù mì   [Gungbe]
       head HAB eat me
       I'm having a headache/I usually have headache.'

5. Capturing variation and constrains on variation during recombination

Facts like these illustrate a major puzzle about language acquisition. If we assume that all three aspects of lexical and functional items can vary independently due to acquisition, there are eight possible logical combinations for every item to be learned. This is schematized in Figure 6 where the digit 0 represents the target language while 1 represents a point of change.
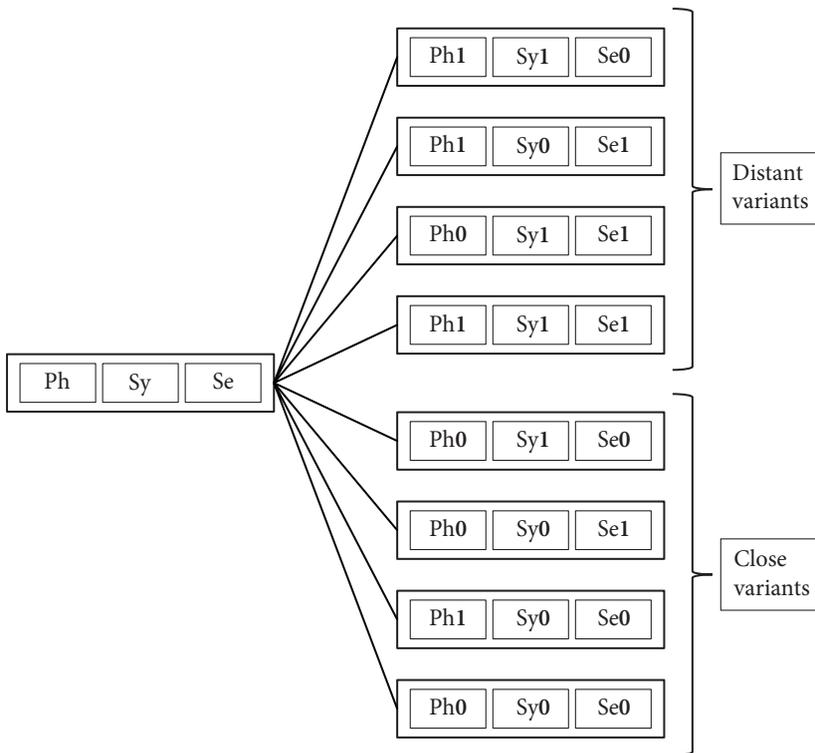
Figure 6. Possible combinations in learning a lexical item

Figure 6 shows potential variation in the inputs due to learner-speaker's approxima-
tions. If indeed all three aspects of a lexical/functional item can vary independently
during acquisition, we are led to conclude that aside perfect replication, that is, the
box with three digits "0", the learner can also produce seven competing variants
three of which are close enough to the target to allow efficient communication. The
learner may also derive less close combinations referred to here as distant variants.
Even though these variants are UG compatible, they may be regarded as marginal,
degraded or unacceptable, depending on the established linguistic norms in the
society. Despite these norms, both close and distant variants belong to the input
and represent latent triggers for change: any of these variants may spread across
the population given the right circumstances (e.g., the spread of double negation
in American English).

   If we think of grammaticalization and change from this perspective, it appears
that issues of grammaticalization must be understood as an interaction between lin-
guistic creations (or recombination) based on individual learners' hypotheses and
external factors such as population structure. I conclude from this that languages

do not change, but populations do. As Aboh (2016b, forthcoming) shows, we can describe the evolution of the language of a community in terms of the hypothetical scenario depicted in Figure 7 in which individuals of different colours represent different linguistic variants of different age and sociological backgrounds.
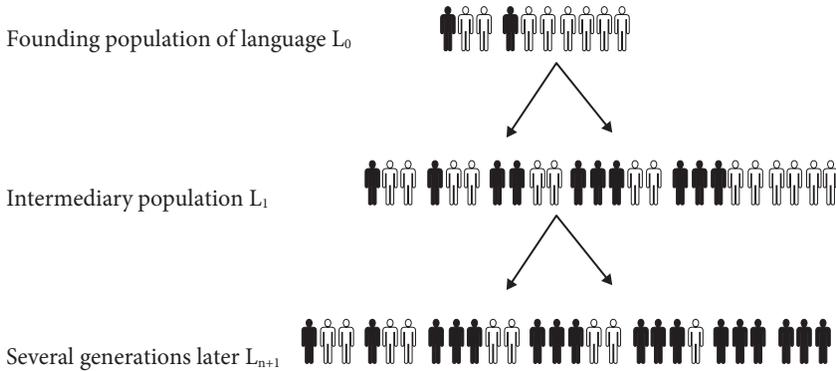
Founding population of language L_0

Intermediary population L_1

Several generations later L_{n+1}

Figure 7. Hypothetical evolution of a community language

This developmental scenario assumes that the founding population involves some minor variation: the majority of the community consists of speakers of the white variant, while speakers of the black variant are a minority. At L_0 no linguistic factor can predict the fate of the black variant. As the years pass, however, and given favourable socio-cultural, economic, or historical circumstances, the black variant slowly spread across the population and eventually became the dominant variety within the population. Spreading here depends on how many new speakers (i.e., L1, L2, 2L1) and speakers of the white variant adopt or switch to the black variant. We can therefore conceive of the spreading of a linguistic feature as resulting from a third factor in terms of Chomsky (2005). In the present scenario, the variety spoken by the founding population was replaced progressively by a competing variant that was already present in the founding population. At this stage, it is not important to establish whether the black variant was introduced through language contact in the traditional sense or due to language-internal factors. In terms of the proposed framework one cannot distinguish formally between these two notions because contact between different idiolects yields contact between different linguistic features: the source of variation within the linguistic pool on which language learning is based. The different idiolects forming the pool of linguistic features can include closely related or distant variants depending on genetic and typological variations. At the individual level therefore, acquisition and change is always formally triggered by a contact between features, on which linguistic recombination feeds. It appears from this discussion that diachronic language changes must first be understood as

caused by changes in the population of speakers rather than as independent linguistic changes in the strict sense, the latter always happen in individual learners' minds (see also Lightfoot 1979, 1999).

Since work by William Labov in the early sixties, sociolinguists have noticed that population factors may impact linguistic variation within and across communities. One way to address these questions has been to develop quantitative analytic tools sometimes presented as alternatives to formal views of acquisition and change. In this paper, I pledge for a more informed collaboration between sociolinguists and formal linguists in order to develop a comprehensive view of language acquisition in a multilingual context.

While the proposed multi-language approach is compatible with findings in sociolinguistics, typological and acquisition studies show that there are limits to Figure 6, and the different routes of evolution in Figure 7. Assuming variation within and across the learner-speaker does not imply that the process is free. UG appears to be the ultimate filter of converging recombination: Learners recreate language in ways that indicate the existence of limits on recombination. A good example of constrained recombination is linguistic reanalysis that subsequently leads to grammaticalization (i.e., convergence within the population). One could think of such a process as free (i.e., each learner can generate an infinite number of possible outcomes), yet only a few patterns have been observed in human history (cf., Heine & Kuteva 2005; Hengeveld 2012). For instance, motion verbs tend to develop into a sequential or future marker cross-linguistically. In French, English, and Dutch *aller*, *go*, and *gaan*, respectively, are used in periphrastic future tenses. Similar developments involving different semantic classes and grammatical functions suggest that learners exhibit biases which delimit the contours of recombination and variation.

Work by Simon Fischer and colleagues have shown that such biases can emerge 'culturally', out of spontaneous reorganization of agents within the community. In Aboh (2015a, 2016b), however, I adopt a more linguistic position and hypothesize that such learning biases might result from the fact that not all areas of the clause structure allow recombination. I argue that features related to the discourse-syntax interfaces are prone to recombination contrary to features that belong to the expression of tense, mood, and aspect, which seem to follow a pre-defined hierarchy. This would mean that features expressing the TMA field would be more stable across languages than those related to the clausal left periphery. Several typological and creole studies on TMA indicate that this is indeed the case. Aside from morphological specifications, languages exhibit rigidly ordered markers in which modal expressions (e.g., evaluative, evidential or epistemic mood markers) precede

tense specification, which in turn precedes root modality, which dominates a series of aspect markers (e.g., habitual, progressive, inchoative, prospective, etc.). In all languages therefore, we reach a structured sequence in which aspect markers are closer to the verb stem, followed by root modality, tense, and higher modal markers.

This rigid hierarchy is illustrated by Hidasta (Siouan) in (5a), Ute (Uto-Aztecan) in (5b), and Guyanese Creole in (5c). These examples show that whether in a creole or a non-creole context, recombination perpetually yields the same TMA hierarchy (cf. Bickerton 1981, 1988; Muysken 1981; Foley & Van Valin 1984; Baker 1985; Bybee 1985; Hengeveld 1989; Cinque 1999).

(5)   a.   Wíra i apaari **ki**   **stao**   **ski**
           tree   it grow   INCHOATIVE REMOTE.PAST EVID
           'The tree **must have begun** to grow a long time ago.'
                                                                      [Hidatsa, Hengeveld 2006: 53]
      b.   Tukua-tuka-na-puga-vaaci.
           meat-eat-HAB-PAST-EVID (hear say)
           '(She) used to eat meat (so I hear).'   [Ute, Uto-Aztecan, Cinque 1999: 56]
      c.   Jaan shuda bin kyaan   get   fu   gu.
           John MOOD PAST MOOD-NEG MOOD PREP go
           'John should not have been able to be allowed to go.'
                                                                      [Guyanese Creole, Gibson 1986: 585]

These examples show that despite their different morphologies, Hidatsa (5a) and Ute (5b) display similar ordering (Verb-Aspect-Tense-Mood). This order is the mirror image of English as indicated by the translation of (5a) which in turn is comparable to the order in the Guyanese creole example (5c). Based on Baker's (1985) mirror principle according to which the ordering of morphemes in the morphological component mimics their licensing order in the syntactic component, we can conclude that the TMA sequencing in Hidatsa, Ute, English, and Jamaican creole suggests a unique underlying structure constrained by semantic hierarchy (cf. Hengeveld 1989; Cinque 1999). These languages show that recombination within the TMA domain is immune to the conditions of acquisition. All languages involve the same hierarchy even though surface variation may result from language-specific morpho-syntactic operations. This observation is compatible with Cinque's (1999) seminal characterization of the TMA field as mapped on the following hierarchical sequencing:

(6) *The universal hierarchy of clausal functional projections (a second approximation)*
[*frankly* $\text{Mood}_{\text{speech act}}$ [*fortunately* $\text{Mood}_{\text{evaluative}}$ [*allegedly* $\text{Mood}_{\text{evidential}}$ [*probably* $\text{Mod}_{\text{epistemic}}$ [*once* T(Past) [*then* T(Future) [*perhaps* $\text{Mood}_{\text{irrealis}}$ [*necessarily* $\text{Mod}_{\text{necessity}}$ [*possibly* $\text{Mod}_{\text{possibility}}$ [*usually* $\mathbf{Asp_{habitual}}$ [*again* $\mathbf{Asp_{repetitive(I)}}$ [*often* $\mathbf{Asp_{frequentative(I)}}$ [*intentionally* $\text{Mod}_{\text{volitional}}$ [*quickly* $\text{Asp}_{\text{celerative(I)}}$ [*already* T(Anterior) [*no longer* $\text{Asp}_{\text{terminative}}$ [*still* $\text{Asp}_{\text{continuative}}$ [*always* $\text{Asp}_{\text{perfect(?)}}$ [*just* $\text{Asp}_{\text{retrospective}}$ [*soon* $\text{Asp}_{\text{proximative}}$ [*briefly* $\text{Asp}_{\text{durative}}$ [*characteristically(?)* $\text{Asp}_{\text{generic/progressive}}$ [*almost* $\text{Asp}_{\text{prospective}}$ [*completely* $\text{Asp}_{\text{SgCompletive(I)}}$ [*tutto* $\text{AspP1}_{\text{Completive}}$ [*well* Voice [*fast/early* $\text{Asp}_{\text{celerative(II)}}$ [*again* $\text{Asp}_{\text{repetitive(II)}}$ [*often* $\text{Asp}_{\text{frequentative(II)}}$ [*completely* $\text{Asp}_{\text{SgCompletive(II)}}$.
                                                    (Cinque (1999: 106)

Whether every language has such a rich inflectional system responsible for the ordering of TMA markers and adverbs is an empirical question, but the relevant observation here is that this systematic mapping of adverbs and TMA markers apparently constrains possible reanalyses of data by learners: certain semantic classes of adverbs or verbs only are reanalysed into corresponding classes of grammatical TMA markers. Accordingly, the fact that individual learners of a population may tend to reanalyse the verb 'stay' into a marker of frequentative, repetitive, or habitual aspect could be driven by the hierarchy in (6) in which these three aspect phrases (here in boldface) are contiguous.

With regard to the clausal left periphery, which Aboh (2015a) assumes may be a source of typological variation, there have been cross-linguistic studies based on Rizzi's (1997) cartographic approach indicating that languages generally display the peripheral structure in (7).

(7) ForceP …InterP…TopP*…FocP…TopP*…FinP…TP…VP.

In terms of Rizzi (1997), the clausal left periphery, delimited by ForceP and FinP, represents the interface between the propositional content and the discourse, hence the syntax-discourse interface. This layer therefore encodes clause-typing (ForceP), topic and focus features (TopP, FocP) and finiteness features (FinP) that match those of the embedded tense phrase (TP). Several studies now exist on the clausal left periphery in typologically different languages, but because this is a young field, we still do not know how variation plays out in the CP domain and whether the type of stability observed in the TMA domain also holds true of the CP domain as well. Available studies, however, already show some typological variation.

For instance, while Rizzi (1997) shows that Italian allows recursive topic phrases (indicated here by an asterisk) before and after the focus phrase, Aboh (2004) reports that Gungbe allows one topic phrase only which must precede the Focus phrase. In addition, Aboh (2010) argues that the Gbe left peripheral system involves a negative phrase as well as a specificity phrase which project below the focus phrase as indicated in (8).

(8)   ForceP…InterP…TopP…FocP…SpecificP…NegP…FinP

Within Germanic, discussions on V2 versus V3 patterns and variations in a contact situation indicate that there are subtle differences within the clausal left periphery across these languages as well (cf. Walkden 2017). Finally, the sharp differences between V2 and non-V2 languages (e.g., German/Dutch vs. English) indicate that change within the CP domain may yield radical typological variations. Such variations do not seem to exist with regard to the TMA domain.

Cross-linguistic variations within the clausal left periphery may point to fundamental cross-linguistic structural differences even though all languages seem to involve the same TMA architecture as argued for by Cinque (1999). Though further study is needed, these preliminary observations are compatible with the suggested variation asymmetry between the TMA domain and the CP domain, which in turn appears to be in line with recent findings in the acquisition literature. Indeed, several recent studies suggest that external interfaces, namely the discourse-syntax interface (i.e., domains of morphosyntax governed by pragmatic/semantic factors), represent vulnerable domains during acquisition (cf. Haznedar & Schwartz 1997; Hulk 2000; Hulk & Müller 2000; Lardiere 2000; Prévost & White 2000; Goad & White 2004; Sorace 2005; Tsimpli & Sorace 2006). Because the CP domain is vulnerable during acquisition, it may allow a wider range of recombination possibilities and therefore favour variation.

In this regard, Aboh (2015a) argues that creole languages and other new languages may provide us with the relevant empirical domain to investigate such variations further. In the following section, I discuss an instance of structural variation between Saramaccan and its source languages (Gbe, English), even though the TMA domain seems quite stable across these languages.

6.   Recombination within CP: The case of Saramaccan

Several studies on TMA expressions in creoles show that Saramaccan conforms to the rigid hierarchy in (5) (e.g., Veenstra 1996; Aboh 2006). The following examples taken from Van der Vate (2011: 251) illustrate this:

(9)   a.   A   ó   sa   ta   kulé gó a   sikóo.   [Saramaccan]
           3SG MOOD MOOD IMPERF run go LOC school
           'S/he will be able to run to school.'
      b.   A   bi   ó   sa   ta   sún.
           3SG PST MOOD MOOD IMPERF swim
           'S/he would have been able to swim regularly (but s/he does not).'

c. Senni bi musu ta dé a wósu.
   Senni PST MOOD IMPERF BE LOC house
   'Senni was obliged to be able to be at home (but he was not at home).'

Even though standard English does not readily allow a combination of TMA markers, the English translation of example (5a) which contains the sequence '…*must have begun to…*' indicates that when possible, modal markers precede aspect-related expressions in this language. The following example in Gungbe indicates that this language is much similar to Saramaccan in allowing co-occurrence of several TMA expressions.

(10) Súrù ɖóná sìgán nɔ̀ yì wéxɔ̀ mὲ   [Gungbe]
     Suru MOD MOD HAB go school LOC
     'Suru must be able to regularly go to school.'

With regard to expressions of tense, mood, and aspect, these data suggest that English, Gungbe, and Saramaccan obey Cinque's universal hierarchy even though these languages differ with regard to the extent to which they allow co-occurrence of the TMA markers.

    The clausal periphery, however, suggests a different picture. The following data on number agreement on the Saramaccan relativizer, arguably an aspect of the complementizer system, indicate that this language developed a new concord system within its clausal periphery. Before getting on to this, let us first briefly describe number agreement within the DP in Saramaccan.

    A recurrent claim about creole languages is that they do not involve contextual agreement morphology, such as nominal, adjectival, or verbal affixes. While such claims have been shown to be untenable in the literature (e.g., DeGraff 2003), it suffices to say that claims about absence of agreement in creoles often rely on absence of morphological expression of agreement. Yet, as Booij (2005) carefully argues, agreement can take different forms that do not involve affixes. In example (11a), for instance, the quantifier *híi* 'all' matches with a plural determiner *dee*, even though the head noun *mii* 'child' remains bare. In examples (11b) and (11c), the plural and singular determiners *dee* and *di* match with the relevant numeral, *three* and *one*, respectively.

(11) a. Híi dee mii u 7 jaa   [Saramaccan, Rountree 1992, Chart 1]
         all DET.PL child of seven year
         'all those/the seven year old children'.
     b. dee dii womi
         DET.PL three man
         'those/the three men'.

c. di   wan kodo womi
  DET.SG one single man
  'the one single man/the only man'.

I assume these facts instantiate agreement under government (cf. Booij 2005). The Saramaccan DP is partially represented as in (12) (cf. Aboh 2006, 2015a).

(12)

NumP

spec   Num′

      Num   FP~NUMERAL~
      dee

            spec   F′~NUMERAL~
            N~RL~P

                  F~NUMERAL~   **NP**
            dii

                              womi
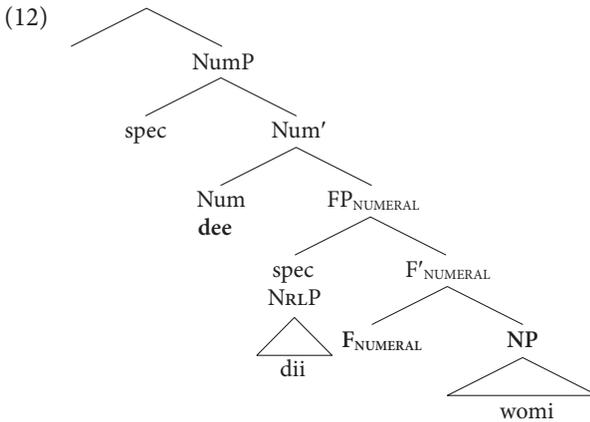
In this representation, agreement is established between the head of the number phrase Num, spelled out as *dee*, and F~NUMERAL~, which heads the functional projection whose specifier is realised by the numeral phrase N~RL~P (cf. Cinque 1996; Aboh 2004). In terms of this description, F~NUMERAL~ licenses the N~RL~P *dii* 'three' in its specifier under spec-head agreement. Let us now return to Saramaccan relative clauses which display similar agreement patterns between functional heads.

The data are taken from Huttar, Aboh & Ameka (2013). In the subject relatives under (13), the form of the determiner associated with the head noun matches with the relativizer, hence the form *di* for singular in (13a) and *dee* for plural in (13b).

(13) **Subject relatives**
  a. Di   mujëë di   kisi dee   fisi da mi sisa   [Saramaccan]
    DET.SG woman REL.SG catch DET.PL fish COP my sister
    'The woman who caught the fish is my sister.'
  b. Dee   mujëë dee kisi dee   fisi da mi sisa
    DET.PL woman REL.PL catch DET.PL fish COP my sister
    'The women who caught the fish are my sisters.'

The sentences under (14) indicate that the same pattern is found in object relatives.

(14) **Object relatives**
    a. Di   fisi di   mi tata kisi bigi   [Saramaccan]
        DET.SG fish REL.PL my father catch big
        'The fish which my father caught is big.'
    b. Dee   fisi dee   mi tata kisi bigi
        DET.PL fish REL.PL 1SG father catch big
        'The fish which my father caught are big.'

These sentences show that number agreement in Saramaccan DPs and relative clauses is visible on the D head associated with the noun head, though the latter must remain bare. Huttar, Aboh, and Ameka (2013) report that agreement with the relative marker *di/dee* is obligatory irrespective of the extraction site of the head noun (e.g., subject, object, oblique, commitative, instrument etc.). We can describe this agreement pattern informally, by stating that the relative marker *di/dee* is inflected for number as indicated in (15) in which the morpheme *-i* encodes singular while *-ee* encodes plural:

(15) $\text{Rel}_{[sg]} = \text{d+INFL}_{[sg]}$ → d-**i**
       $\text{Rel}_{[pl]} = \text{d+INFL}_{[pl]}$ → d-**ee**

Aside the agreement facts in examples (13) and (14), Saramaccan relative clauses are superficially comparable to English headed relatives. As the translations show, in both English and Saramaccan, the relative noun head precedes the relative clause introduced by the complementizer/relativizer. In this paper, I will assume Kayne's (1994: 90) analysis of wh-relatives illustrated in (16) (see also Bianchi 1999, 2000 for further elaboration). In this analysis, the relativized noun starts out as a relative DP including the wh-phrase. This phrase raises to [spec CP] after which the NP complement of the relative D raises internally to the specifier position of this relative DP.

(16) [$_{DP}$ the [$_{CP}$ [$_{DPREL}$ [$_{NP}$ bottle] [$_{DREL}$ which [$_{NP}$ ~~bottle~~]]] [$_{TP}$ John designed [$_{DPREL}$ ~~which bottle~~]]]

In what follows, I will not discuss the details of Kayne's analysis. What matters for our discussion here is the idea that the relativized noun starts out as a relative DP. With this analysis in mind, we can reasonably conclude from the examples presented in the preceding paragraphs that Saramaccan relative clauses inherited structural properties of English wh-relatives, as could be seen from the representation in (17b) which stands for the relative clause in (14a) and repeated here as (17a).

(17)   a. Di   fisi di   mi tata kisi   [Saramaccan]
          DET.SG fish REL.PL my father catch
          'The fish which my father caught.'
    b. [$_{DP}$ [$_{D}$ di [$_{CP}$ [$_{DPREL}$ fisi [$_{DREL}$ [$_{NP}$ ~~fisi~~]]] [$_{C}$ di mi tata kisi ~~[$_{DPREL}$ [$_{DREL}$~~
         ~~[$_{NP}$ fisi]]]~~]]]]

This analysis suggests that Saramaccan relative clauses involve wh-relatives in which the raised DP embeds a null relative D-element glossed here as D_{REL} (see Bianchi 2000 for the licensing of this element and its relation with the higher DP). While the morphosyntax of Saramaccan relative clauses shares some properties with English wh-relatives, this language contrasts with Gbe in which relative clauses display a formally different morphosyntax. Aboh (2002, 2005) indicates that Gbe languages involve relative constructions in which the relative clause (represented by the bracketed CP here) is sandwiched between the head noun and the determiners associated with it. The Gungbe example in (18a) instantiates a relative clause involving a bare head noun. Example (18b) illustrates a head noun that is specific and singular. Sentence (18c) exemplifies a head noun that is specific and plural. Finally, representation (18d) indicates that in Gbe relative clauses, the CP-clause must pied-pipe to [spec NumP] and [spec DP], respectively.

(18) a. náwè   [_CP ɖě wá]   nɔ̀ví   cè   wɛ̀   é   nyí.   [Gungbe]
      woman   REL come sibling my FOC 3SG COP
      'The woman who came is my sister.'

    b. náwè   [_CP ɖě wá]   lɔ́   nɔ̀ví   cè   wɛ̀   é   nyí.
      woman   REL come DET sibling my FOC 3SG COP
      'That (specific) woman who came is my sister.'

    c. [_DP náwè   [_CP ɖě wá]   lɔ́   lɛ́] nɔ̀ví   cè   wɛ̀   yé   nyí.
      woman   REL come DET PL sibling my FOC 3PL COP
      'Those (specific) women who came are my sisters.'

    d.
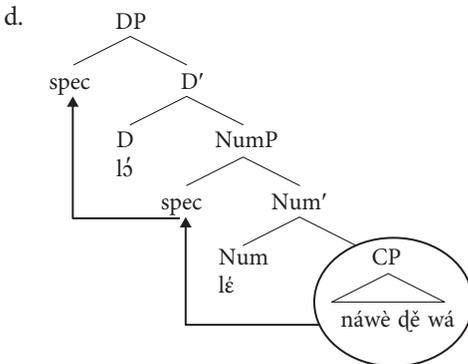
These surface differences Det/Numb-NP-CP in English/Saramaccan versus NP-CP-Det-Numb in Gbe clearly indicate that relative clauses in Saramaccan follow English morphosyntactic properties rather than Gbe ones. This is not surprising since English provided most of the Saramaccan basic lexicon and has had significant structural impact on various domains of its grammar (cf. Aboh 2015a). Unlike English, however, Saramaccan relativizer displays number agreement. Even though English displays case morphology on relative pronouns (e.g., *the boy who invited Bill* vs. *the boy whom Bill invited*), it does not exhibit number agreement on

relative pronouns, and I am not aware of any English dialect that has such agreement pattern. The question then arises how Saramaccan developed such a feature in relative clauses.

The theory of recombination proposed in this paper provides us with adequate tools to describe how this pattern could have arisen in Saramaccan. The agreement pattern between the relativized noun and the relativizer is widely represented in Bantu. The following example taken from Mchombo (2001) illustrates such a pattern: the relative pronoun *méné*, here in boldface, bears the same noun class marker as the immediately preceding relativized noun (see also Atindogbé & Grollemund 2017 and references therein for a detailed description on Bantu in general).

(19) Mkángo u-**méné** ú-ma-saká   mbûzi   ú-ma-wa-sautsa
      3-lion   3SM-REL 3SM-HAB-hunt 10SM-goats 3SM-HAB-2OM-bother
      alenje   a-**méné** á-ma-gwetsá mitêngo   [Chichewa]
      2-hunters 2SM-REL 2SM-HAB-fell 4-trees
      'The lion which hunts goats bothers the hunters who fell trees.'

Recall from the discussion in the introduction that Saramaccan emerged from the contact between English, Portuguese to some extent, Gbe (Kwa), and Kikongo (Bantu) (cf. Smith 1987 and much related work). It seems to me reasonable therefore to hypothesize that Kikongo (or Bantu in general) also contributed to the emergence of agreement patterns in Saramaccan. As the following discussion on relative clauses across Gbe suggests, agreement patterns in Saramaccan can be taken to illustrate a situation in which the morphosyntax of the substrate languages converge, thus making it even more likely for the relevant feature to be retained in the emerging creole.

Indeed, the Gungbe sentences in (18) illustrate the Gbe languages only partially, since those examples mainly correspond to Eastern Gbe languages (spoken in Southern Nigeria, Benin Republic, and partly in Togo). In Western Gbe languages spoken in Benin, Togo, and Ghana, however, relative clauses display agreement between the head noun, the determiner, and the relative marker. Crucially, however, number is never expressed on the head noun itself (similarly to Saramaccan). The following examples from Gengbe illustrate this pattern. (20a) illustrates a singular noun head while (20b) instantiates a plural noun head.

(20) a. Nyɔnu-a   **ke-ye** le   akpavi wãwa dada nye ye   [Gengbe]
          woman-DET.SG REL.SG catch fish   those sister my FOC
          'The woman who caught those fish is my sister.'
      b. Nyɔnu **ke-wo** le   akpavi wãwa dada nye ye   **wo** nyi
          woman REL.PL catch fish   those sister my FOC 3PL COP
          'The women who caught those fish are my sisters.'

The example in (20b) is interesting because it shows that even though there is no overt determiner that expresses number specification on the head noun, the plural marker on the relative marker encodes number in agreement with the resumptive pronoun *wo* 3PL, in the subject position of the clause, whose antecedent is the relativized noun *nyɔnu* 'women'. Note that in many Gbe languages, the number marker is homophonous with the third person plural pronoun as shown in (20). Example (21), also taken from Gengbe, further illustrates agreement between the head noun and the relativizer in this language. In this sentence, the relativized noun is an indefinite specific DP which includes the number marker *wó*. This marker is repeated on the relativizer *kè*.

(21) [**àvɔ́** xóxó ɖé **wó**] **kè-wó** mú gbà lè àsì jí ò à
      cloth old INDEF PL REL-PL NEG ADV PREP market PREP NEG TOP
      'Some of these old loincloths that are no longer available.'   [Gengbe]

In Gengbe relative clauses, therefore, number is not systematically marked on the determiner of the head noun though it is obligatorily marked on the relative marker. When present on both the determiner and the relativizer, number morphology must be identical.

Other Western Gbe languages present us with slightly different patterns as summarized below: Examples (22a) and (22b) illustrate Standard Ewe and Inland Ewe, respectively. The sentence under (22c) exemplifies Aŋlo.

(22) a. afé   si-wó míe-ƒle lá   [Standard Ewe]
         house REL-PL 1PL-buy TOP
      b. afé   ke-wó-xé   míe-ƒle yi   [Inland Ewe]
         house DEM-PL-REL 1PL-buy TOP
      c. afé   yi-wó míe-ƒle lá   [Aŋlo]
         house REL-PL 1PL-buy TOP
         'The houses that we bought.'

The variation we observe among the Gbe languages must have been present in the inputs that led to the emergence of Saramaccan. This variation, however, should not hide the fact that Western Gbe languages require agreement between the relative noun head and the relativizer. This agreement is expressed on the determiner associated with the noun head and is copied onto the relativizer, hence the determiner and the relativizer exhibit an identical number morpheme. A similar pattern is observed in the Bantu languages in which there is agreement in noun class between the relativized noun and the relativizer (see example (19) above).

Furthermore, the example from Inland Ewe indicates that the relativizer in the Gbe languages is built on demonstratives (as in English) even though the forms of this marker in the different languages do not immediately point to this source.
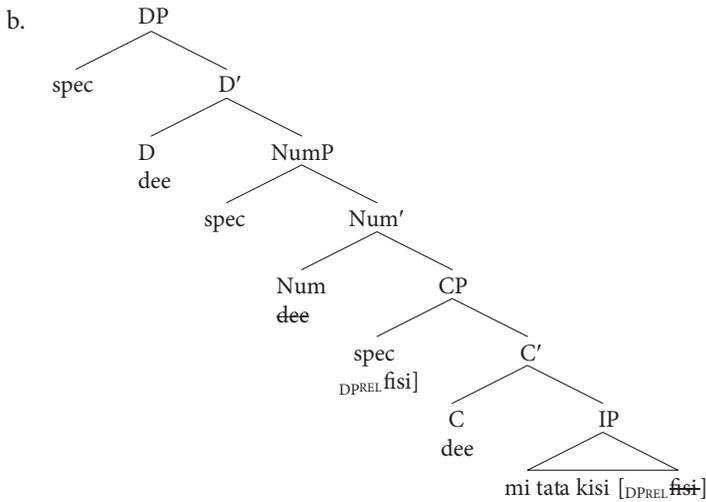
In Gungbe, for instance, most people use the shortened form *ɖě* in (18) in relative clauses. Beside this form, however, Gungbe also involves a complex form *ɖě-xè* (often used by older generations and found in formal texts e.g., biblical translations). This complex form includes the morpheme *xè* which expresses the feature [PROXIMAL] in demonstratives, hence the contrast between *éxè* 'this' and *énὲ*" 'that'. In a contact situation, therefore, it does not seem unreasonable to me to propose that some Gbe or Bantu learners of English could have made the hypothesis that English relative clauses involve similar agreement patterns as in Gbe and Bantu. Such learners could conclude that English relativizer includes the feature number similarly to Gbe. Such a learning hypothesis can be reinforced by the fact that both English and Gbe display bare nouns, even though to different degrees, and involve relativizers that are akin to demonstrative markers.

   In terms of the complementation analysis to relative clauses adopted here, this would mean that the Saramaccan DP system inherited part of its functions from English and from the Gbe (and Bantu) languages (Aboh 2015b). This leads to the typological generalization depicted in (23).

(23)   English: [DET-(PL) [NP-(PL)……REL………]….]
       (Western) Gbe: [[NP-(DET-PL)………..REL-PL…..]…. DET-PL]
       Saramaccan: [DET-(PL) [NP-(PL)……REL-PL…...]….]

Taking into account our analysis of Saramaccan relative clauses proposed above (cf. (17b)), I am led to propose that relative clauses in this language involve wh-relatives in which the raised DP embeds a null relative D-element that includes a number feature. As in English, DPREL raises to [spec CP] both in Saramaccan and in Gbe. The difference between English on the one hand, and Saramaccan and (Western) Gbe on the other resides in the fact that movement of DPREL to [spec CP] creates a spec-head configuration expressed by number agreement in these languages, hence the number morphology on the relativizer under C. The latter further enters an Agree relation with the upper Num, which encodes number within the split DP. Following Aboh (2006, 2015a), I argue that *dee*, merged in Num, subsequently raises to D, which is so lexicalized. Saramaccan therefore maps a (Western) Gbe/Bantu pattern onto English syntax, leading to the partial representation of sentence (24a), as in (24b) in which the determiner *dee* raises to Num and D (cf. Kayne 1994; Bianchi 1999, 2000; de Vries 2002, for the structural analysis of relative clauses).

(24)   a.   Dee   fisi dee   mi tata   kisi
            DET.PL fish REL.PL 1SG father catch
            'The fish that my father caught.'

b.

```
                    DP
              ┌──────┴──────┐
            spec           D′
                      ┌─────┴─────┐
                      D          NumP
                     dee      ┌───┴────┐
                            spec      Num′
                                  ┌────┴────┐
                                 Num        CP
                                 dee   ┌─────┴─────┐
                                      spec         C′
                                   DPREL fisi]  ┌───┴───┐
                                                C        IP
                                               dee   ┌───┴───┐
                                              mi tata kisi [DPREL fisi]
```

The discussion suggests that the relative complementizers in English, Gbe, and Saramaccan can be formally described as in (25):[6]

(25)

English	Western Gbe	Saramaccan
that	ke/si/yi	di/dee
REL-COMP[WH] [DP [CP [TP]]] WH-movement NUMBER: unspecified	REL-COMP[WH] [DP [CP [TP]]] WH-movement NUMBER: specified CP-pied-piping	REL-COMP[WH] [DP [CP [TP]]] WH-movement NUMBER: specified

These descriptions show that the relativizer in Saramaccan recombines morpho-syntactic features of noun class in Bantu, and number specification in Gbe with wh-features of the relativizer in English wh-relatives (cf. Kayne 1994). The result of this recombination process is that the Saramaccan clausal periphery involves morphosyntactic properties that are not found in any of the source languages. Indeed, relative clauses in Gbe languages involve wh-movement and relative complementizer agreement in addition to generalized pied-piping of the clause to [spec NumP] and [spec DP] as depicted in (18c). Such a generalized-pied-piping process is missing in Saramaccan, thus indicating that the feature that triggers this

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6. A possibility that I hope to explore in future work is that the typological differences between these languages relates to a difference in the type of relative markers they involve: complementizer relative makers (i.e., head) vs. relative pronouns (i.e., phrases). This difference in turn could suggest different agreement patterns e.g., spec-head agreement vs. head-head agreement (via movement).

movement in Gbe was not retained in Saramaccan. This language is unlike Bantu in which agreement is not limited to the head noun and the relativizer only but cuts across the whole inflectional paradigm. Instead, Saramaccan seems to have adopted English morphosyntax with the requirement that the head noun and the relativizer be specified for number in overt syntax (i.e., a Gbe feature).

7.   Conclusion

I argue in this chapter that language acquisition naturally happens in a situation in which different idiolects are in contact. These idiolects which sometimes represent closely related variants (e.g., dialects of Dutch) or typologically different languages (e.g., English, Portuguese, Gbe, Kikongo in the ase of Saramaccan) constitute the inputs, that is, the feature pool of linguistic features on which acquisition is based. Because these inputs are too varied and cannot be replicated in their entirety, learners must select relevant linguistic features that are recombined into new linguistic items (e.g., lexical or functional items). When the inputs are made of dialects or registers of the same language, the output of recombination shares a family resemblance with competing variants of the inputs. However, when the inputs derive form typologically or genetically different languages, as in the case of creoles, the result of recombination may be more structurally contrastive. I therefore conclude that every leaner develops a hybrid grammar, and is an agent of change: each new idiolect embeds subtle innovations (cf. Clark 1992; Clark & Roberts 1993).

Since learners may make similar learning hypotheses about the inputs, some innovations may converge. I argue that when this happens, the cumulative effect of such converging learning hypotheses may eventually lead to language change (at the population level). Certain aspects of language change are therefore understood in terms of the spreading of some learning hypothesis within a population of learner.

Another conclusion of this discussion is that bundles of features should not be taken in a holistic manner, as often done in the literature. Instead, the data on relative clauses in Saramaccan suggest that linguistic features underlying functional heads appear to be more composite than it might seem. This raises the obvious question of how to integrate this view in theories of syntactic computation and theories of acquisition. I leave these questions for future research.

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