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Aboh, E.O.

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12 Recombination, Feature Pool, and Population Structure

Three Factors Bearing on “Grammaticalization”

Enoch O. Aboh

12.1 Introduction

One of the most investigated questions in linguistics concerns how to explain typological variation in relation to language structure and language use, and how these inform the scholarship on language evolution. How do new linguistic forms evolve from old ones? This question, also central to creolistics (e.g., Bickerton 1981, 1984, 1990, 2008; McWhorter 2001; Mufwene 2001, 2008; Bakker et al. 2011; Bakker 2014) is not new. In the Christian tradition, the current seven thousand languages or so, and the spontaneous emergence of new languages, such as creoles, has its roots in the Tower of Babel:

Now the whole world had one language and a common speech [. . .] Then they said, “Come, let us build ourselves a city, with a tower that reaches to the heavens, so that we may make a name for ourselves; otherwise, we will be scattered over the face of the whole earth.

But the LORD came down to see the city and the tower the people were building. The LORD said, “If as one people speaking the same language they have begun to do this, then nothing they plan to do will be impossible for them. Come, let us go down and confuse their language so they will not understand each other.” (*Genesis* 11: 1–7).

Depending on one’s religious beliefs one could stop here: God gave us language with limited variation, but one would be hard pressed to account for why, upon close inspection, the range of linguistic variation has remained so narrow, and why patterns of change commonly observed in historical linguistics seem to follow certain specific evolutionary trajectories. Why is grammatical change not always arbitrary? Why does the human mind exhibit some biases such that all natural languages (not just creoles) display a rigidly ordered Tense, Mood, Aspect (TMA) system (Muysken 1981; Bickerton 1984; Foley & Van Valin 1984; Baker 1985; Hengeveld 1989; Cinque 1999)? Why does God-given open-ended human creativity, obvious in other domains (e.g., computer technology, space technology), appear to be so restricted regarding language? After all, given the rate of language variation and change, seven thousand languages over millennia of human evolution does not seem to be an astonishing number.

The evolutionary linguist, who might also be an atheist, faces these very same questions. Assuming that the language capacity emerged as a consequence of a “great leap forward” (Hauser et al. 2002; Chomsky 2005), a genetic mutation that triggered a rewiring of the brain, it must be the case that this mutation happened in a few individuals before spreading through our whole species. This would mean that whatever rudimentary linguistic systems that emerged then were much less diverse and numerous than modern languages. Once again, one is faced with the hard question: Why does the variation observed today, which seems overwhelming when we consider the surface properties of the world’s languages, fade away once one scratches the surface to consider deeper syntactic properties such as TMA? Why is language variation constrained the way it is, and why does one find similar evolutionary processes across time, space, and generations?

Creole languages make this question even harder to answer, since their observable morphophonological and morphosyntactic differences coexist with strong similarities (e.g., TMA-mapping systems) with non-creole languages as well. Accordingly, creole languages show that similar crosslinguistic syntactic patterns emerge spontaneously even in contexts where new languages are created by enslaved laborers assumed to be speakers of different and “inferior” languages. Thus, the enslaved Africans, who were commonly regarded as simple-minded and less evolved beings, even in the nineteenth century (Charles Darwin 1871), produced grammatical patterns relatively identical to those of their putatively more evolved masters who were accordingly endowed with sophisticated minds. This is remarkable if we consider the fact that the enslaved Africans must have suffered severe psychological traumas from the Middle Passage and their abject living conditions. The human mind therefore appears extremely resilient and seems to produce some invariants when it comes to language. How can we explain the prevalence of such crosslinguistic invariants despite the observable wide crosslinguistic variations (Aboh 2020; Lightfoot 2020 and references therein)?

A traditional (but not uncontroversial) view is that such invariants are the result of *grammaticalization*: a unidirectional and linear evolution from a denoting lexical item to a functional (or grammatical) semantically bleached item. The process is commonly assumed to be particularly slow (e.g., the formation of the future and conditional verbal endings in Romance). Since most creoles discussed in the literature developed in a much shorter time period, it has been proposed that aspects of their grammar evolved through “accelerated grammaticalization.” Under this characterization, creoles require an exceptional explanation based on the speed of the linguistic processes underlying their formation. Based on the uniformitarian view adopted in this volume in which the same type of linguistic change processes operate in similar ecologies, this chapter deconstructs the notion of grammaticalization.

In Section 12.2, I argue that assumptions about grammaticalization as a theory of change are misleading. Based on conceptual and empirical arguments, I demonstrate that the process that is generally referred to as “grammaticalization” represents a sequence of distinct synchronic linguistic behaviors within a speech community at a certain point in time. Put together, as is often done in historical linguistics, this succession of independent and arguably unrelated linguistic group behaviors presents us with a neat picture of a diachronic change, in a way similar to kaleidoscopic motion. This discussion is grounded in a longstanding critique of grammaticalization going back to at least the late 1970s with work by Lightfoot (1979, 1991, 1999) and much related work on diachronic syntax as well as series of studies by Joseph (1992, 2001, 2003, 2004, 2011) and Fischer (2009, 2011), among many others. These studies demonstrate that there is no theoretical ground for grammaticalization as an independent, unidirectional, and linear linguistic phenomenon driving language change and linguistic variation.

In Section 12.3, I propose that the structural change traditionally identified as “grammaticalization” involves three interrelated factors: The first, *recombination*, is an innate human cognitive capacity which allows speaker/signer-learners (SL) to select specific linguistic features abstracted away from the inputs and recombine them into new syntactic variants. Recombination, and the constraints applying to it, define the range of variation between different competing variants in the inputs. The second consists of the feature pool including the variants that SLs are exposed to, which is subject to a process of competition and selection (Mufwene 2001). In this approach, syntactic elements created by SLs are mere competing variants with no predestined evolutionary fate (Aboh 2019a, 2015). The third (inaccurately referred to as “grammaticalization”) relates to population factors impacting collective behavior (e.g., proportion of L1 vs. L2/3 learners, social network, prestige, population size) which may favor or hinder the spread of specific variants across a speech community about which an E-language can be postulated. Accordingly, different communities may converge or diverge regarding the morphosyntactic properties and conditions of use of specific grammatical elements.

For example, we are often told that various Romance conjugation forms have grammaticalized from Latin periphrastic constructions involving specific lexical items (e.g., the fusion of *infinitive* + *Habere* in Romance synthetic future). If, however, the nature of pro-drop is conditioned by verbal morphology (as argued in Rizzi 1982 and much related work), then one must explain why the grammaticalization of the Romance verbal morphology led to typologically different languages such that French is a pro-retention language, unlike Portuguese, Spanish, and Italian; while Brazilian Portuguese shows patterns absent in European Portuguese.

By changing our perspective on such classical examples of grammaticalization, this chapter makes it possible to dissociate purely grammatical phenomena at the individual and population levels from the role of *contact*, which is ubiquitous during acquisition and change. Section 12.4 concludes the chapter, further showing how a uniformitarian approach to language change across ecologies allows a unique perspective on factors of change without resorting to exceptional explanations for specific language ecologies.

12.2 Grammaticalization Theory: The Problem

When confronted with the question of language acquisition and change, linguists' traditional answers suggest that patterns of language use in human communication settings can affect the language system and language user in the long run, in such a way that linguistic forms and structures follow specific evolutionary paths or developmental cycles. Apparent cognitive biases leading SLs to make frequent choices of certain linguistic patterns further constrain language change by making other potentially efficient linguistic options less frequent, unavailable, or eventually too marked to learn. This has been the common implicit hypotheses in grammaticalization theories in which specific lexical items with denotational meanings are assumed to develop into grammatical meanings and become members of a closed class of functional/grammatical items, as indicated in Kuryłowicz's (1975) definition:

Grammaticalisation consists in the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status, e.g. from a derivative formant to an inflectional one (Kuryłowicz 1975[1965]: 52).

Often conceived of as a cycle (e.g., Otto Jespersen's cycle), the process is also characterized as involving a reduction in phonetic substance and a loss of syntactic freedom typical of referential lexical items (Narrog & Heine 2011, the introduction chapter).

This view on grammaticalization adheres to the widely held Sausurean assumption that linguistic systems, *langue* in his terms, are existing autonomous entities which have a lifecycle of their own (i.e., independent of their hosts: the speaker or learner). According to Saussure (ed. 2005),

La langue n'est complète dans aucun [individu], elle n'existe parfaitement que dans la masse. En séparant la langue de la parole, on sépare du même coup : (i) ce qui est social de ce qui est individuel; (ii) ce qui est essentiel de ce qui est accessoire et plus ou moins accidentel.

'Language is complete in no individual. It only exists perfectly in a population. By separating language from speech, one also separates (i) the social from the individual, (ii) the essential from the accessory and more or less accidental' [my translation].

From this perspective therefore, the “accidental” behavior of individuals during speech acts is of no linguistic importance. Linguistics must focus on what exists *virtually* (as specified by Saussure) in the community of speakers/signers. Accordingly, one can only talk of language change, if this virtual communal system changes. By dissociating language from the individual this way, it has become possible to assume a language change that runs through several successive generations of speakers/signers without the “accidental” behavior of the latter (and their ecology) exerting any significant pressure on the direction of the change, hence the claims of the unidirectional grammaticalization in the field.¹

Heine (2003) reports that studies of grammaticalization started in the eighteenth century and were based on the assumption that grammatical elements, including affixes, did not emerge *de novo* but must have evolved from content words. This view, though counter-intuitive (given the compositional nature of language), was subsequently propagated by Givón’s (1971) seminal work,² in which the author concluded on the basis of typological evidence that “today’s morphology is yesterday’s syntax” (p. 25). The idea is that analytical forms in the past paved the way for affixal patterning observed in contemporary agglutinating and synthetic languages. This conclusion may have further strengthened the common assumption that analytic forms or structures are somehow “simpler” than (and predate) agglutinating or synthetic ones in which morphology appears exuberant and “complex.” Likewise, Givón’s view clearly grounded the position that lexical meanings emerged before grammatical ones. To the best of my knowledge, this common assumption in evolutionary linguistics has never been motivated on any principled ground. Nevertheless, Givón’s seminal study and much related work on morphosyntactic changes have led to the characterization of grammaticalization as involving the following developmental processes (Heine 2003: 579; Hopper & Traugott 2003; see also Heine & Kuteva 2005):

- (1) Mechanisms of grammaticalization
 - a. Desemantization (or “bleaching”): loss of denotational meaning;
 - b. Extension (or context generalization): use in new contexts;
 - c. Decategorialization: loss in morphosyntactic properties characteristic of the source forms, including the loss of independent word status, hence cliticization or affixation;
 - d. Erosion (or “phonetic reduction”): loss in phonetic substance.

¹ In this chapter, I use the term *ecology* as a cover term for external factors that may impact the SL’s mental grammar, such as, the inputs, SLs’ social network, social hierarchies, prestige, historical factors, language policy, communicative practices, for example, code-switching/mixing, population size, etc. It is beyond the scope of this chapter to discuss these factors in any detail, but the perspective taken here offers, I hope, the opportunity to evaluate their impact on the linguistic system.

² Given the classical observation that linguistic units derive from the combination of smaller units, as clearly shown by centuries of work on phonology, morphology, syntax, and semantics, the idea that smaller units, such as inflectional morphemes, develop from larger units (i.e., words) may come as a surprise. The rationale, however, is that such words first express a meaning, but subsequently acquire a grammatical use through a process of exaptation. The motivations of such an evolutionary trajectory are assumed to be found in communicative pressures.

Heine (2003) argues that these processes combine to produce an evolutionary trajectory that involves the stages in (2):

- (2)
 - a. There is a linguistic expression A that is recruited for grammaticalization.
 - b. This expression acquires a second use pattern B, with the effect that there is ambiguity between A and B.
 - c. Finally, A may be lost, and there is now only B.

The interaction of the processes of grammaticalization in (1) and the different stages in (2) lead to two main common claims in the field:

- (3)
 - a. Grammaticalization is a unidirectional process.
 - b. Grammaticalization is an independent language-internal process (though sometimes, it has been claimed to be contact-induced, e.g., in creoles, as by Bruyn 1995 and Heine & Kuteva 2005).

These descriptions suggest that grammaticalization is an explanatory theory of language change (but see Joseph 1992, 2001, 2003, 2004; Fischer 2009, 2011, for critiques). This state of affairs also seems to align nicely with a common assumption underlying linguistic *Stambaum* (tree representations): language (i.e., *langue* in Saussurean sense) changes by itself or from within (i.e., the so-called internally motivated change), and the linguist can explain evolutionary changes by simply tracking different surface forms down to a single ancestor: the proto-form. This monoparental myth about the evolution of language, which might resonate closely with some purist conceptions about the evolution of language and maybe mankind (see Mufwene, Chapter 2 this volume for a critique), comes in handy because grammaticalization offers a simple solution to an old difficult question about the human mind. According to this simple universal solution, languages change not due to SLs' agency, but because there are universal rules that apply to linguistic elements and determine their fate under the appropriate communicative pressure.

This very widely accepted view in linguistics is however paradoxical. As Noam Chomsky remarked already in the early ages of generative syntax (1965, 1986), linguistic inquiry is about the SL rather than about the social act she engages in or the abstractions linguists can make of the social acts they refer to as *langue*. In the generative view, linguistic entities are part of idiolects (assumed here to be externalizations of I-language) and therefore only exist in the mind of their speakers. There can therefore be no linguistic evolution of a community of idiolects that does not have its source in the mind of their speakers. In the uniformitarian approach assumed in generative linguistics, what drives change are the "accidental" individual acts and how these distribute across a population. It is therefore misguided to say that a certain form X has grammaticalized into Y, since Y can only be posited abstractly (or virtually, to use a Saussurean expression) as a constellation of partial individual behaviors involving X in a specific population at a specific point in time. Indeed, explanations of linguistic change in terms of grammaticalization raise many theoretical and empirical problems discussed extensively in Lightfoot (1979, 1991, 1999), Joseph (1992, 2001, 2003, 2004,

2006), Joseph & Janda (2003), and Fischer (2009, 2011). I recapitulate some of the drawbacks here, but the reader is referred to these references for detailed discussions.

A point often ignored in grammaticalization theories is that new generations of SLs do not have knowledge of the history of “accidental” behaviors leading to their community’s current state of their language (i.e., E-language in a Chomskyan sense). Therefore, SLs cannot be assumed to simply carry over linguistic changes initiated by accidental behaviors of their ancestors. This is particularly evident once we realize that future generations are not exposed to the same inputs as their predecessors and usually may not speak the same set of languages or varieties as the latter.

For instance, Ledgeway (2011) lists a number of grammaticalization patterns from Latin into Romance languages. These include the development of indefinite articles from the weakened form of the Latin numeral ‘one’ *unum/-am* (M/F) (> Catalan/Italian/Spanish *un/una*, French *un/une*, Portuguese *um/uma*, Romanian *un/o*), the development of definite articles from the weakened form of the Latin distal demonstrative *ille* (> Catalan/Spanish *el/la*, French/Occitan *le/la*, Italian *il/la*, Portuguese *o*, Romanian *-(u)l/-a*), or the development of various verbal paradigms (e.g., future tense) from Latin phrasal patterns involving VP + [VP_{habere}] > FUTURE suffix or AuxP + VP.

In view of generative approaches to language acquisition across populations, however, this analysis involving a direct development from Latin to these different Romance languages appears untenable. Let us assume Andersen’s (1973) model of acquisition and change cited in van Gelderen (2011) and further adapted here:

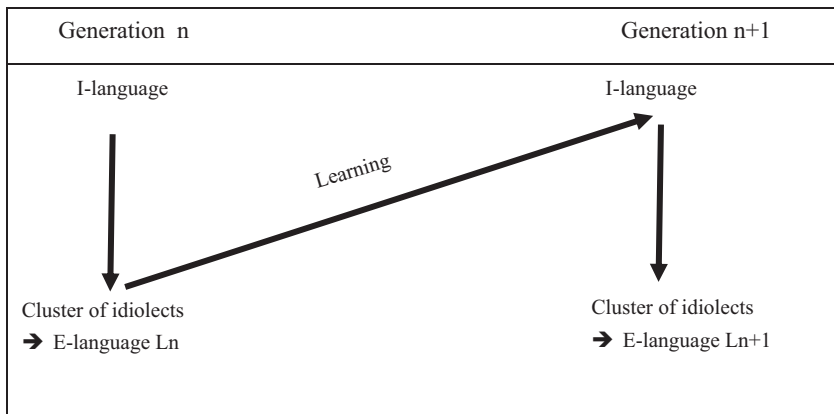


Figure 12.1 Model of acquisition and change adapted from van Gelderen (2011).

This model highlights the fact that acquisition within one and the same community is not the linear transmission process presupposed by grammaticalization. Instead, it leads to “mini” breaks in transmission through which the child SL must develop a mental grammar from heterogeneous inputs that are significantly different from those of preceding generations. Indeed, the cluster of idiolects from which the E-language L_n can be abstracted is qualitatively different from the cluster of idiolects from which one can construct the E-language L_{n+1} . Learning, as illustrated in this figure, interfaces between these two states of L: L_n and L_{n+1} . This observation is clearly stated by Fischer (2009: 153) who says:

Logically, diachronic processes cannot exist because diachronic grammars do not exist. Each speaker makes up his own grammar afresh on the basis of data surrounding him, and on the basis of his general cognitive abilities or strategies (or, so one wishes, on the basis of some innate Language Acquisition Device). So why should a grammaticalisation process necessarily run from a to b, to c etc.? Why should there be unidirectionality?

In this respect, just as the clusters of idiolects forming L_{n+1} share family resemblance (Mufwene 2001, 2008), the grammars underlying them in the minds of SLs need not be the same.

One can already infer from Figure 12.1, that the neat picture presented in grammaticalization scenarios of a smooth transition “from a to b, to c” integrates arguably unrelated linguistic events (Saussure’s “accidents”) on a diachronic line, thus amalgamating them into a single event uniting different populations of assumed monolinguals. For such a smooth iterative transmission to hold, one would have to posit that even though E-languages change across and within generations and across space, there are aspects thereof which resist change, and which serve as cues for new generations of SLs to further engage in processes started by previous generations. In other words, changes initiated by former generations are relatively stable for successive generations to pick up and move on. This is obviously questionable, given how versatile SLs are across generations and how unstable inputs can be under the pressure of population movements, multilingualism, political crises, or other catastrophic events (e.g., tsunami, pandemic).

Considering multilingualism, for example, the rich literature on changes in World Englishes indicates that changes in a specific ecology (e.g., South Africa, Australia, America) does not immediately carry over to learners in other ecologies (e.g., Canada, Singapore, India). Yet, this is the rationale of theories which hold that Latin lexical items grammaticalized into verbal affixes in the Romance languages. Indeed, it is not immediately clear to me how subsequent generations of multilingual SLs in different geographical zones (i.e., different ecologies) can converge on the exact same learning hypotheses that led their presumed unique ancestral language models to trigger a grammaticalization process so that a linguistic expression develops through stages

a, b, and c, across different contexts of acquisition. In the case of the Latin examples, for instance, one may wonder why the Celts who contributed to the emergence of French wisely carried on a grammaticalization process from Latin, a language they were presumably not native speakers of (and maybe had no real interest in speaking fluently in the first place). The death of Latin certainly suggests that SLs across the Romance area were not engaged in maintaining it intact. Rather, they seemed keen to adapt to their multilingual ecologies thus allowing the emergence of new varieties. How could such SLs therefore prolong an earlier grammaticalization process without bringing to their mental learning table their own language baggage, viz., their substratum? Given these questions, theories of grammaticalization can only derive their explanatory power from an additional set of hypotheses about the stability of ongoing linguistic changes during grammaticalization and how such processes obliterate SLs' profiles (e.g., L1-speakers, simultaneous bilinguals, L2/3 speakers, etc.). This is a peculiar state of affairs, since SLs make language, not the other way around, and studies of change must primarily focus on how SLs create language.

In this regard, it is worth remarking as well that one cannot, as is often done in the so-called *Afrikanistik*, compensate for the absence of historical data in one context (e.g., communities without written tradition), by postulating evolutionary paths based on comparable grammaticalization processes across typologically similar or areal languages. Such views ignore the specific linguistic ecologies of the relevant SLs (e.g., whether they engage in code-switching/mixing or not) by assuming that the same linguistic causes lead to the same effects everywhere according to so-called linguistic laws of change. We now know from ecological approaches to language (e.g., Mufwene 2001 ff.) that this is not the case, and that developmental scenarios become more intricate once one looks closely into the contexts in which SLs engage in creating language (what some linguists characterize as "languaging") in multilingual situations.

Another shortcoming of grammaticalization theories lies in the fact that language change is the result of a wide range of (re)analyses across syntax, semantics, morphology, and phonology, all of which cannot be subsumed under a comprehensive theory of grammaticalization based on a predestined cycle or unidirectional path (Joseph 2004, 2011). Plantation creole languages show this clearly since they represent new languages which emerge out of contacts between European colonists and enslaved Africans in the case of colonies around the Atlantic and in the Indian Ocean. Compared to their source languages, plantation creoles display sharp changes in all domains of grammar (including phonology, morphology, syntax, semantics, pragmatics). In creolistics, a subset of these changes falls under the umbrella of contact-induced grammaticalization, in which the notion of contact is understood as

the degree of multilingualism in the community. In this regard, Heine & Kuteva (2005: 13) observe that:

The kinds of contact-induced processes that we will discuss are by no means independent of the sociolinguistic situations in which they occur. In particular, they can be said to require a certain degree of intensity of language contact, where the latter can be described roughly in the following way [. . .]: Grammatical replication is most likely to occur if there is a large degree of intensive and extensive bilingualism among the speakers of the replica language and if contact extends over a longer period of time.

The words “intense,” “intensive,” and “extensive” are very common in discussions on language contact. To the best of my knowledge, however, there is no formal metric for the “intensity” of contact in the mind of SLs. There is a vague sense in which, by observing SLs’ behaviors in a community, and by extrapolating from their E-languages and/or their propensity to engage in multilingual discourse, one can speculate that such communities involve certain types of SL profiles, including bi/multilinguals, a certain proportion of L2 learners, etc. One can also invoke the histories of such communities to understand their multilingual practices. Yet, such knowledge tells us nothing about the cognitive processes in which these SLs engage during communication. We do not know from such broad descriptions of populations if the cognitive processes which underlie grammaticalization in the minds of individual SLs are distinct in presumed monolingual versus multilingual communities. Likewise, we do not know how “intensive” and “extensive” contacts take place in the minds of SLs. Do they translate into permeable or fused mental grammatical systems in the minds of such SLs, as opposed to less permeable or less fused systems in ecologies with less “intense” or less “extensive” contact?

Currently linguists have little understanding of these issues. Accordingly, the common distinction between internally motivated and contact-induced grammaticalization processes seems to have no cognitive basis.³ Indeed, this distinction builds on another controversial division in cognitive approaches: the idea that perceived monolinguals engage in language-sensitive/specific cognitive processes that are formally distinct from those of bi/multilinguals. Since we cannot measure the “intensity” of contact objectively, we cannot tell the extent to which the linguistic behavior of such bi/multilingual communities is formally different from that of perceived monolingual communities in which speakers putatively navigate smoothly between different registers or variants, some of which involve sharp morphosyntactic differences that are potential

³ A point orthogonal to this discussion regards the opposition between simplicity and complexity. If grammaticalization is the process that creates language complexity as claimed by some authors in creolitics and typology, then everything said here also contributes to showing that such a rationale is flawed (Aboh & Smith 2009; Aboh 2017).

triggers of change. These so-called registers typically hide specific grammars described in typology and comparative syntax studies. For instance, one could think of the contrast between American Standard English and African American Vernacular English in the domains of TMA or negation (e.g., Green 2002). One can also invoke differences between American Standard English and American Southern English regarding modals, where the latter variety allows double modals (e.g., Mishoe & Montgomery 1994). Examples from other languages include Romance varieties spoken in Italy where there is variation in the distribution of clitic pronouns, as documented in several studies, including especially Rizzi (1986) and Poletto (2000). Also, within Romance, one can note that French non-standard varieties display intricate placement rules regulating in-situ versus ex-situ Wh-questions, which make these varieties akin to Wh-in-situ languages like Mandarin Chinese (e.g., Cheng & Rooryck 2000). All these examples point to the fact that while E-languages are often seen as monolithic by linguists, grammars developed by individual SLs are not (cf. Mufwene 1992). Indeed, individual SLs are exposed to heterogeneous inputs subject to competition and selection, a consequence of *contact* in the feature pool, and develop hybrid grammars (cf. Aboh 2015, 2020). Given this stance, the notion of CONTACT-INDUCED GRAMMATICALIZATION becomes misleading.

In their discussion of contact-induced grammaticalization, Heine & Kuteva (2005) report an example in which speakers of Pipil, an endangered Aztec language of El Salvador, extend the use of a relational nominal affix into a preposition and a clausal conjunction, hypothetically under the influence of Spanish (cf. 4a–b).

- (4) Pipil, Aztec, Uto-Aztec, cited in Hein & Kuteva (2005: 16)
- a. *Juan i- wan Maria*
John her- with Mary
'John and Mary' or 'John with Mary'
- b. *ne ta: kat k- itskih ne mich wan ki- kwah.*
the man it- caught the fish and it- ate
'The man caught the fish and ate it.'

While these examples seem convincing *a priori*, it is important to note that nominal relators have long been shown language-internally and cross-linguistically to share fundamental properties with adpositions, namely in possessive-like predicates. This can be illustrated with French *de* or English *of*, both of which function as nominal relators in (5):

- (5) a. the door *of* the house
b. la porte *de* la maison

Both are also locative adpositions in (6) (Den Dikken 2006; Aboh 2010):

- (6) a. they came out *of* the house
b. Ils sont sortis *de* la maison

Given that such correspondences or analogies can emerge in different constructions in the languages or varieties spoken by SLs assumed to be monolingual, the role of Spanish as the source of the change in Pipil becomes less straightforward. At best, it becomes an additional facilitator, but it is not the necessary trigger. We can therefore shift the focus from asking whether the phenomenon is “language-internal” or “contact-induced.” Instead, we should focus on properties (viz., construction types) that the feature pool must contain which may allow SLs to make hypotheses that group nominal relators (*aka* linkers or connectives) and adpositions within the same paradigm. In the case of Pipil, as in French and English, the source of this analogy must be the different variants competing in the contact feature pool between the varying dialects that populate the inputs SLs are exposed to.

Another scenario, sometimes associated with creole formation, is “accelerated grammaticalization.” As is usually the case with creole languages, the universal view commonly applied to “natural” languages is claimed not to hold here. Grammaticalization is generally characterized as a slow and long process running across several generations of speakers assumed to form homogeneous and stable communities experiencing smooth language transmission (i.e., undisrupted iterative learning). Putatively, this view does not square well with the young age of creole languages, their multi-cultural and ethnic communities, their relatively short formation period (roughly fifty years), and the received doctrine that they emerged out of failed language transmission (see DeGraff 1999, 2001a, 2001b, 2003, for a detailed critique of exceptionalist theories). Like the notion of INTENSE CONTACT, that of ACCELERATED/RAPID GRAMMATICALIZATION (e.g., Plag 2002; Bakker 2008; Michaelis & Haspelmath 2020) has not been defined formally. Aside from some narratives on the course of events in history, linguists have not developed formal tools for measuring the speed of a change happening in the mind of individual SLs or in a population. Claims of acceleration or rapidity of the process are based on E-languages abstracted away from population behaviors which, as we know, are subject to numerous language-external factors. Hence, the undefined notion of ACCELERATED GRAMMATICALIZATION has too readily been applied to creoles as an exceptional process involving a grammaticalization transferred from one language to serve a new function.

12.2.1 *Interim Summary*

Current approaches to grammaticalization appear to focus on population behaviors, thus ignoring the role of the SLs in the communicative process and in the creation of grammar. One reason for this empirical choice appears to be that grammaticalization studies are generally based on traditional historical descriptions from which it is difficult to extract individual variation (within a

population). Another reason may be an idea that has been influential in modern linguistics, viz., that speakers of a community are generally monolingual. Thus contact-induced changes observed in multilingual communities are the exception rather than the norm. One can still see the effects of this view in the traditional *Stammbaum* trees or family-tree models that are used to explain language diversification, and which are commonly found in the typology literature. In such monoparental models of language diversification, a single ancestor language evolves into different dialects/languages, thus making change an independent language-internal process exemplified by sound laws. The same rationale underlies claims in the literature in which Latin forms (e.g., *habere* 'have') grammaticalize straightforwardly into different functional elements in Romance languages, with the reader never being told that the creators of these evolutions from Latin were not monolingual speakers of the latter in the first place.

Indeed, a major drawback of current grammaticalization theories based on reconstructed portions of E-languages is that they do not relate linguistic change to acquisition or learnability since the different mechanisms and stages involved (see mechanisms and stages 1–2) are focused on the cycle involving the lexical item only. Therefore, they suggest that the observed change is an inherent property of a lexical item independent from learning strategies SLs engage in.

12.3 Feature Pool: Competition, Selection, and Grammaticalization

The theoretical and empirical shortcomings discussed in Section 12.2 show that there is need for a uniformitarian approach to language change that applies to both creoles and non-creoles alike and to different linguistic domains. Such a model must also distinguish the process of (re)analysis, that is, the creation of a new structure in the mind of individual SLs, from the propagation of this form across the population. While these two levels (i.e., the mind and the external world) feed into each other, they are subject to different factors that should not be conflated in a unified theory of evolution or unidirectional grammaticalization. By distinguishing between these two levels, the proposed approach is sensitive to both language-internal and language-external factors that may influence the speed of a change at the population level and in different ecologies.

Drawing on Aboh (2015, 2019a, 2019b, 2020), I argue that such a model of change integrates three factors:

- (i) *Recombination*, an innate human cognitive capacity which allows SLs to select specific linguistic features from the inputs they are exposed to and integrate them into new hybrid grammatical and/or semantic combinations that feed back in the inputs through utterances.

- (ii) Competition and selection which operates on the linguistic features (i.e., abstract constructs) that SLs can extrapolate from these variants in the inputs (Mufwene 2001).
- (iii) Aspects of the ecology that may favor or hinder the propagation of a specific variant or recombination across the population. The latter has been wrongly characterized as grammaticalization in the field.

Under the proposed approach, the concept of GRAMMATICALIZATION becomes a sequence of distinct synchronic linguistic recombinations within a speech community at a certain point in time. Such recombinations enter in competition with the original inputs and other variants in the changing feature pool. When historical linguists focus on the evolution of one variant across successive generations, they end up compressing these individual linguistic events into a chronological succession of events. My proposal is in line with the following observation of Fischer's (2009: 152):

I still cannot see that there is room for a separate or "independent" process of grammaticalisation. Where most linguists see a unidirectional process from concrete to abstract, a process that cannot be cut up into segments, I can only see a more or less accidental concurrence. The processes underlying grammaticalisation may lead one way as well as another, i.e., there is no necessary link between one segment of the chain of grammaticalisation and another.

In what follows, I interpret Fischer's "accidental concurrence" as a result of recombination as well as competition and selection processes interacting to partially regulate SLs' communicative choices.

12.3.1 *Recombination: The Individual Level*

Based on empirical data from a wide range of research areas including creole languages, code-mixing/switching, and neuroatypical SLs, Aboh (2015, 2019a, 2019b, 2020) concludes that the driving force of acquisition is our instinct to select different linguistic elements from the inputs and recombine them into new linguistic entities. This instinct enables *recombination*, which is a fully automated cognitive process whereby SLs detect and select relevant linguistic features from the heterogeneous inputs they are exposed to and merge them together into hybrid linguistic units or structures in their mental, idiolectal grammars. I will not expose the details of the argumentation here, and the interested reader is referred to the references listed.

In terms of this approach, recombination, an innate capacity, is an instance of general MERGE (as defined in Chomsky 1995) applied to linguistic features relating to different components of the grammar (i.e., phonology, morphology, syntax, semantics, Aboh 2020: 6). Applying this to the word level (as traditionally defined in linguistics) this would mean that recombination targets three

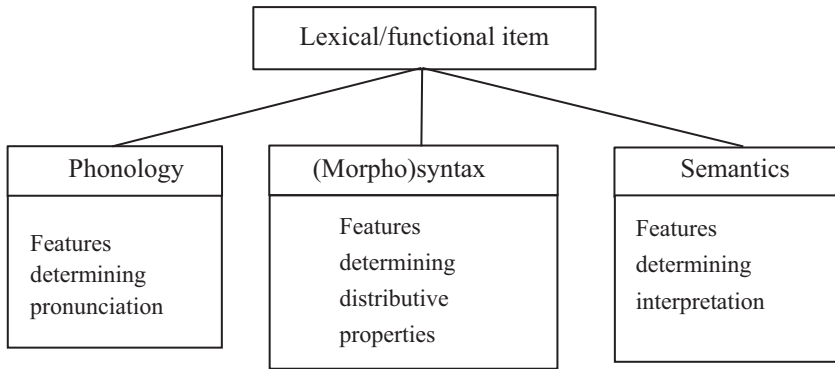


Figure 12.2 Lexical/functional item.

main aspects of a word (or lexical/functional item): phonology, morphosyntax, semantics, described in Figure 12.2 (cf. Aboh 2019a, 2019b, 2020).

In this description, a lexical/functional item consists of three components minimally: phonology involving rules regulating pronunciation and combinations of sounds, morphosyntax dealing with distributive properties, and semantics including constraints about possible combinations of smallest meaning units and rules underlying interpretation. Language acquisition involves discovering the abstract properties that are associated with these components of lexical/functional items. Aboh (2015, 2019a, 2019b, 2020) argues that SLs of all languages live in a multilanguage environment because the inputs they are exposed to, and through which they can access abstract properties of the lexical/functional components described here, are generated through different registers, idiolects, dialects, and sometimes typologically distinct languages.⁴ Accordingly, these inputs will make available linguistic features from various sources which cannot all be subsumed under a single monolithic grammar (cf. Mufwene 1992; Roeper 1999; Aboh 2015, 2020).

Therefore, during acquisition, SLs recombine relevant features from the diverse and competing inputs into new bundles that can be spelled out by lexical or grammatical items as part of their mental grammars. One can hypothesize that recombination applies to lexical components (i.e., phonology, morphosyntax, semantics) individually, or in some specific cases (e.g., syntax-semantics interfaces) jointly. Let us assume the first scenario for the sake of the discussion. In this case, the acquisition of a lexical item can generate eight

⁴ Another source of variation lies in differences among the populations of speakers that individual SLs have been exposed to. Accordingly, the sets of inputs differ, minimally in the strengths of the different variants, but possibly also in the presence/absence of some variants (Mufwene 2008: 120, 126).

potential outputs of which only one replicates the target perfectly (Aboh 2020: 9). The other seven competitors, which can be seen as Fischer's or Saussure's "accidental occurrences" represent the source of individual variation within and across SLs. These variations at the individual level may reside in any component of the lexical/grammatical item, depending on the inputs each SL is exposed to, and the learning hypotheses that she entertains.⁵ Thus, recombination is a source of variation within and across individuals, which in turn represents potential triggers for a change at the population level, as I discuss in Section 12.3.2. Two main conclusions can be drawn at this point:

- (i) Language acquisition is only possible through the contact of idiolects within a community of SLs. Because contact, thus defined, is ubiquitous in the mind of SLs, notions such as "language contact" become superfluous. One can even argue that it is undesirable, since language in the Saussurean sense is an abstraction, and such abstract constructs cannot be in contact whether understood literally or metaphorically.
- (ii) Recombination is a source of change. A straightforward answer to the actuation question therefore is that the origin of a change is to be found in the different idiolectal variants created by SLs in the course of acquisition, and how some of these "accidental occurrences" during recombination may spread across the population.

The discussion in previous paragraphs may suggest that recombination is a free process that can generate any conceivable outputs. Aboh (2019a, 2019b, 2020) shows, however, that this is not the case. The process appears to be constrained by UG-related constraints and/or general learning biases.

UG-based constraints are structural (e.g., ban on long-distance recombination, minimality violation) and aspects thereof may turn out to be inbuilt. Regarding general learning biases, a case in point that is relevant to studies of grammaticalization is the expressions of tense, mood, and aspect, commonly referred to as TMA in creolistics or TAM in descriptive grammars or typological studies (Aboh 2019a, 2019b, 2020). Indeed, a domain of language that appears to constrain recombination and therefore seems immune to variation is the cross-linguistic expression of TMA. Studies of language acquisition have shown that verb-inflection morphology is particularly vulnerable in contexts of second language acquisition. The literature on creole languages, for instance, shows that these languages did not retain the conjugation forms or agreement patterns of their Romance and Germanic lexifiers or their Niger-Congo substrates. Instead, they developed TMA expressions that are rigidly ordered according to the format: Mood+Tense+Mood+Aspect+V. Common

⁵ Such learning hypotheses may be subject to various (cognitive) factors which go beyond the scope of this chapter.

explanations for this fact invoke grammaticalization. However, Muysken (1981) argues that the TMA format observed in creole languages derives from a universal category AUX whose internal organization and interpretation are regulated by an unmarked universal semantic principle according to which speech act modality and/or epistemic modality scopes over tense, which in turn scopes over root modality, which scopes over a series of aspect expressions, etc. In this regard, the rigid sequencing identified across creoles would derive from universal semantic scope relations innate to every SL. Alternatively, Bickerton (1981, 1988, 1999) hypothesizes that this rigid ordering is determined by the Language Bioprogram, a specific human endowment for language.

Once we contextualize the creole debate in a broader inquiry about TMA expressions across languages of the world, it immediately appears that cross-linguistic studies by, for example, Foley & Van Valin (1984), Bybee (1985), Hengeveld (1989), and Cinque (1999) report the same rigid TMA pattern, now schematized in (7).

- (7) Mood[speech-act]-Mood[epistemic]-Tense-Mood[root]-Aspect-(Voice)-Verb.

In other words, the TMA sequencing is a universal property of human languages, regardless of morphosyntactic type. While creole languages appear to have discarded some verb-inflection morphology of their source languages, they all faithfully exhibit TMA expressions common to human languages. Therefore, we can reasonably assume that (7) relates to a learning bias internal to human SLs (Aboh 2019a, 2019b, 2020). This format, championed by some authors as exceptional to creole languages, can now be regarded as a strong human learning bias that conditions the development of grammatical expressions encoding the semantics of TMA. This was amply demonstrated by Cinque (1999), who as it were, confirmed Muysken's (1981) intuition based on creole languages: the observed hierarchy correlates with the ordering of adverbs in Romance and Germanic. A portion of Cinque's (1999) very detailed hierarchy relevant to this discussion is represented in (8).⁶

- (8) [*usually* Asp_{habitual} [*again* Asp_{repetitive(I)} [*often* Asp_{frequentative(I)} [[Asp_{proximative} [*briefly* Asp_{durative} [*characteristically(?)* Asp_{generic/progressive} [*almost* Asp_{prospective} [*completely* Asp_{SgCompletive(I)} [*tutto* Asp_{PICompletive} [*well* Voice [*fast/early* Asp_{celerative(II)} [*again* Asp_{repetitive(II)} [*often* Asp_{frequentative(II)} [*completely* Asp_{SgCompletive(II)} (Cinque 1999: 106)

⁶ The repetitions (e.g., completive I vs. II) express the different positions that aspectual markers encoding these semantic distinctions can occupy cross-linguistically, sometimes with subtle semantic variations.

Whether every language embeds the rich TMA domain described by Cinque (1999) in its grammar remains an empirical question. The relevant observation here is that the systematic mapping of adverbs and temporal, modal, and aspectual expressions (or some lexical items encoding equivalent semantics) does not only restrict the range of variation during acquisition. It also constrains possible recombinations that SLs can engage in when learning the mapping of semantic classes of adverbs or verbs on specific structures. Accordingly, the fact that individual SLs of a population may reanalyze/analyze/recombine the verb *stay* (which expresses a prolonged action or a state) into a marker of habitual, frequentative, or repetitive aspects (each of which representing a different facet of duration) is constrained by the semantic hierarchy in (8). This hierarchy determines the contiguous sequence of functional projections responsible for these aspectual expressions. The same is true for the recruitment of the verb ‘finish’ or the quantifier ‘all’ as a marker of completive aspect.

The examples just mentioned can be found in many languages, including the Gbe languages of Benin as well as Suriname creoles (van den Berg & Aboh 2013). In Gungbe, for instance, the verb *nɔ̃* ‘stay’ also serves as a marker of habitual aspect, as shown in the sentences in (9). Sentence (9a) illustrates the verbal usage, meaning ‘to stay’. Example (9b), on the other hand, instantiates the habitual marker. Example (9c) shows that both the lexical and the grammaticalized uses of the same item can co-occur, adjacent to each other, in the same sentence.⁷ What is notable in Gungbe is that the form of the verb does not change in these different usages: there is no audible sign of phonetic erosion or cliticization, not any more than with the verb *aller* ‘go’ in French.

- (9) a. Àdámá nɔ̃ mí dè. [Gungbe]
 Adama stay 1PL place
 ‘Adama stayed at our place.’
 b. Àdámá nɔ̃ wà àzɔ̃n mí dè.
 Adama HAB do work 1PL place
 ‘Adama used to work at our place.’
 c. Àdámá nɔ̃ nɔ̃ mí dè.
 Adama HAB stay 1PL place
 ‘Adama used to stay at our place.’

In Fongbe, a closely related Gbe language, the verbs *fɔ̃* and *vɔ̃* ‘finish, end, complete’ can be used lexically, as shown in (10) (Da Cruz 1995: 362):

- (10) a. Kɔ̃kú fɔ̃ àzɔ̃ ò. [Fongbe]
 Koku finish work DET
 ‘Koku finished the work.’

⁷ Such cooccurrences are relatively common as suggested by the following colloquial French example including the verb *aller* ‘go’ used as a future marker and a lexical verb.

- (i) Je vais aller faire un tour au marché
 1SG go.1SG go.INF make DEF round PREP market
 ‘I will dash to the market.’

- b. Kòkú v̀̀ m̀̀finkún ́.
 Koku finish rice DET
 'Koku finished the (plate of) rice.'

These verbs can also be used as completive markers, as indicated in (11):

- (11) a. Kòkú wà àz̀̀ ́ f̀̀.
 Koku do work DET finish
 'Koku finished doing the work.'
 b. Kòkú ò̀̀ m̀̀finkún ́ v̀̀.
 Koku eat rice DET finish
 'Koku finished eating the rice.'

While Gungbe displays the constructions in (10), similarly to Fongbe, note that the Gungbe equivalents of the Fongbe examples in (11) involve the quantifier *kpó*, roughly 'all'. This is shown in the examples in (12):

- (12) a. Kòkú wà àz̀̀n l̀̀ kpó. [Gungbe]
 Koku do work DET all
 'Koku finished doing the work.'
 b. Kòkú ò̀̀ l̀̀sì l̀̀ kpó.
 Koku eat rice DET all
 'Koku finished eating the rice.'

Gungbe and Fongbe illustrate in a straightforward manner how learning biases, arguably constrained by the hierarchy in (8), can lead to the emergence of different grammatical categories in different languages and communities. However, the process underlying the emergence of such new categories (that is, the spell out of a bundle of functional features), in this case HABITUALITY or COMPLETION, using the same root as a lexical category, does not involve the mechanisms of grammaticalization (stages 1–3) which have commonly been claimed in the literature to be the typical trajectory of the change. The main factors seem to be (i) a general learning bias toward TMA expressions, itself conditioned by (ii) a presumably innate semantic hierarchy of modifiers for states and events. The case of COMPLETION appears interesting in this regard since Fongbe SLs converge on expressing this quantificational aspect of the event by a verbal root while the Gungbe SLs do so by selecting a general quantifier. Yet both communities of SLs select lexical items that can be said to encode completion of an unfolding event or ongoing state.⁸

12.3.2 Recombination: Competition and Selection at the Population Level

In this section, I argue that the interaction between such learning biases, recombination, and the inputs affect learning, thus determining subtle grammatical changes in the minds of individual SLs. Given that each SL introduces

⁸ The variation just described across Gbe is reminiscent to the variation between auxiliaries *haber* and *tener* across the Romance languages and explains their related language-specific properties.

subtle minimal changes to the inputs, these minimal changes may (or may not) ultimately spread across the population depending on specific sociohistorical, economic, or geopolitical factors. The differences between the choices made by the Gungbe and Fongbe communities regarding the expression of COMPLETION aspect therefore boils down to which particular variant spreads across which community, and under which circumstances.

In terms of the competition-and-selection model adopted here (see especially Mufwene 2001, 2008), the more SLs of a certain population follow the same learning biases through recombination, the greater the chance that their similar outputs (the hybrid forms resulting from recombination, see Aboh 2015, 2019a, 2019b, 2020) will spread across that population. The aggregation of these subtle changes creates a family resemblance of patterns on the surface even though underlying individual mental changes may show subtle differences. The differences within the family may in turn become more pronounced and lead to major shifts within the population and thus produce language change. That is, a change happens in what the observer linguist defines as a particular E-language or *langue* in the Saussurean sense. Accordingly, grammaticalization, as commonly understood in the literature, must be seen as the cumulative effect of similar recombined outputs generated by individual SLs.

At this stage, a crucial point in this approach that I must stress once again is that SLs in a community are continuously exposed to varied inputs in constant flux, while SLs themselves are versatile in terms of their social networks. Therefore, SLs in a community are not all exposed to identical sets of inputs. As a result, SLs develop mental grammars that can produce similar outputs but need not be isomorphic underlyingly. These observations are not new. They have been familiar to sociolinguists and dialectologists since the works of William Labov in the 1960s. By insisting on variation within and between individuals and how this state of affairs impacts E-languages, my hope in this chapter is also to integrate more insights from historical linguistics and sociolinguistics in formal approaches to morphosyntactic change.

Indeed, if what characterizes acquisition most is variation both at the individual and population level, then a successful acquisition cannot consist in reproducing faithfully (or cloning) the grammars that generate these varying inputs in flux. This view may seem contrary to most current acquisitionist studies based on group averages and controversial notions such as common target, native speaker, etc. (Tsehaye et. al 2021 and references therein). It is these controversial notions that led to the disenfranchisement of creoles as illegitimate offspring (Mufwene 2001) of their source languages.

Likewise, it is unlikely that SLs would develop an overarching monolithic grammar (Mufwene 1992) that generates all the registers that are needed for efficient communication within the SLs' community networks. Instead, it must be the case that SLs develop a set of "mini" grammars or sub-grammars that

represent a selection of relevant features of the inputs that they are exposed to (Roeper 1999; Aboh 2015, 2020). This ensures that each SL of a community is unique even though she can put her mental grammars to use to produce outputs that other members of the community recognize as familiar and can comprehend (Mufwene 2001, 2002, 2005, 2008, 2014).

Based on these individual differences, Aboh (2019a, 2019b) speculates about the evolution of change within a community in a way to understand how certain external factors (e.g., the size and structure of the population) can (dis)favor a particular variant. In his description, it appears that a variety spoken by a founder population may progressively be replaced by a competing one that was latent but has been advantaged by later ecological changes in the population structure. A competition between different variants need not necessarily result in the complete loss of one variety (as typically assumed in grammaticalization theories) nor does it mean that the variety that ends up being spoken by a minority will automatically become less prestigious. In many former European colonies, the so-called official languages inherited from the colonial power are highly prestigious even though they are spoken by a minority of the population, unlike the local varieties spoken by the majority of the population (e.g., creoles in the Caribbean and the Indian Ocean, and even the nonstandard English varieties spoken by more people than the standard ones in Southeast Asia or in Africa, or the so-called *français d'Afrique* in sub-Saharan Francophone Africa; see Mufwene 2001, 2008, 2014 for discussion).

A straightforward illustration can be found in the way in which Estuary English competes with Received Pronunciation in modern English societies, or the rise of *do-support* in English (cf. Han & Kroch 2000 and references therein).

An interesting recent development, discussed in Sienicki (2014), is the change of address phrase *you guys* in American English from a plural noun mostly referring to a group of men into a plural marker with no gender distinction. This form is in competition with other plural forms of address such as *y'all* (< *you all*). Students of French creoles will remember the evolution of the French noun *bande* 'group' into the nominal number marker *bann* in Mauritian Creole, as illustrated in (13). These examples are taken from Guillemain (2009: 24) who reports the first attestation of *bann* as a plural marker in 1885 (13a), followed by a combination with a specificity marker attested in 1888 (13b). These examples can be contrasted with earlier mentions, such as (13c) in 1855, in which the expression *ein band* 'one band' appears to be ambiguous between an indefinite noun phrase and an expression marking plurality (the gloss is mine).

- (13) a. *éne dan band profet*
 one in band prophet
 'one of the prophets'

- b. *tout ça bande malices là* (Baissac 1888: 107)
 all DEM band trick DET
 ‘all these tricks on you’
- c. *Semb’ ein band’ p’tits miletons*
 together one band/group small mules
 ‘together with lots of young mules’

Like the American English *guys*, these examples show that lexical elements or phrasal expressions denoting ‘group’ may be selected by speakers to encode plurality. Yet, such developments often happen in contexts where these variants compete with other current alternatives, and it is the selection of one such variant by a larger number of speakers that is subsequently analyzed as an instance of grammaticalization in textbooks. In the case of *you guys* the spread of American English across the world seems to create a favorable context: an increasing number of L2 speakers (including this author) adopt it, instead of *y’all*, whose morphosyntactic distribution might be harder to figure out by such L2 learners who are presumably less exposed to it. It is also disadvantaged by the fact that it is stigmatized by native English speakers who are not from the American South and is thus less represented in the larger feature pool of English speakers.

It therefore appears from these few cases that diachronic changes must first be understood as caused by changes in the population structure of SLs rather than by independent “almighty” linguistic laws leading to specific uniform evolutionary trajectories in which SLs are engaged. This conclusion is further supported by the emergence of creole languages and the germane debate about abrupt versus gradual development within creolistics.

12.3.2.1 A RAPID Gradual Change in Creole Formation The paradoxical title of this section tries to expose the two opposing views that are held in creolistics about the question regarding whether creoles developed abruptly due to a break in transmission, or whether they emerged through gradual successive restructuring (Chaudenson 2001; Mufwene 2001, Chapter 2 this volume).

According to Bickerton’s (1981, 1984, 1988, 1990, 1999, 2008) Language Bioprogram Hypothesis, creoles emerged abruptly out of a break in the transmission of the lexifier. According to this view, the cohorts of enslaved Africans, who spoke too many different languages that were generally not mutually intelligible, could not resort to a common African lingua franca. They were also not exposed enough to the power-wise dominant linguistic model of the plantation (the European colonists’ language called the lexifier) to be able to acquire it faithfully.⁹ Being deprived of a common language, these adult SLs

⁹ What the hypothesis has ignored is that no native speaker of any language has acquired the target perfectly, that is, there is no perfect replication ever (Lass 1997).

created a makeshift language, a pidgin, which, even though it putatively had no grammatical structure, was good enough for survival on the plantation. According to Derek Bickerton, such “degenerated” or “macaronic” inputs were inadequate for language acquisition to take place. Children born in these linguistically deprived communities were thus left with the only choice of creating a new grammar on their own. Accordingly, plantation children, guided by their biological endowment for language, turned the pidgin inputs to which they were exposed into a new language: the creole. Since these children in a survival mode developed the creole entirely based on their innate language capacity, the process must have been fast: within one or two generations at most. Bickerton (1984) tried to support his claims with his analysis of the genesis of Hawaiian English Creole.

There have been very many critiques of Derek Bickerton’s Language Bioprogram Hypothesis. I will not repeat them here; the interested reader is referred to Aboh (2015) and references therein for some recent discussion. Important for the argumentation here is the idea that children SLs create or regularize (new) linguistic structures relatively easily. While one may dispute whether creoles were indeed entirely created by children deprived of the learning experience typical of human SLs, there is already ample evidence in the literature, including that on emerging sign languages, showing that children indeed learn and accommodate new forms and structures relatively fast (compared to adults).

Arends (1989, 1995a, 1995b, 1998, 2009) studied the Suriname creoles against their sociohistorical and sociocultural background and concluded, contra Bickerton, that these languages could not have been created by children only, nor could they have developed abruptly. Some of the reasons that motivated Jacques Arends’ conclusion include:

- A very high mortality rate of children during the creole formation period. Indeed, archival research shows that plantation societies went through various transition phases that affected their population structure greatly. In the early years of the plantation, the colonists first relied on a supply of younger enslaved Africans, which appeared less costly. It took several decades before plantation societies established infamous slave breeding policies.
- The different transition phases of the plantation societies led to a highly fluctuating population, which left very little room for “breeding” a generation of young, enslaved Creole children who could have created a language at once as the vernacular that would subsequently be adopted by the whole plantation population, including the colonists and their children (Aboh 2015).
- The population structure of the plantations involving specialized squads, including a system of seasoning and wet nurses, would rather guarantee

language transmission to the newly born enslaved children rather than leaving them with the burden of creating a language of their own.

Put together these observations suggest that there could not have been a break in transmission in the Bickertonian sense. Instead, creole societies went through different transition stages (e.g., from homesteads to plantations, according to Chaudenson 1992, 2001, 2003) compatible with the hypothesis that their languages emerged gradually from L2–L1 interactions which led the so-called creoles to drift further away from the initial target, viz., the colonist's language (DeGraff 1992, 1999, 2001a, 2001b, 1999, 2003; Bruyn 1995; Mufwene 2001, 2005, 2008; van den Berg 2007; Aboh & DeGraff 2014, 2016; Muysken & Smith 2015).

While Jacques Arends' views appear plausible, work by Smith (2006) on a specific period relative to the development of Suriname creoles suggests yet another scenario: a *very* rapid development. According to Smith (2006), there is

[...] no reason for assuming that the creolization proceeds slowly. The evidence for gradual creolization makes assumptions about creole languages that are not proven. My conclusion is that we have a very rapid creolization [...] The sequence of successive events involved in the formation of Sranan and then Saramaccan is completely incompatible with gradualism, but also even with one-generational creolization.

Smith's (2006) argument is based on a timetable of the events that appears so tight and crowded that it leaves very little chance for children and adults alike to create the creole within a single generation, assuming the commonly accepted twenty to twenty-five years between the birth of a parent and the birth of a child was even less in the plantation phase. Smith (2006) presents the following timeline of specific events that are crucial for creole formation in Suriname:

- 1651: Settlement of Suriname by the English.
- ca 1665: Sranan creolized from Caribbean Plantation Pidgin English.
- 1665: Jewish settlers arrive from Cayenne with Portuguese Creole-speaking slaves.
- 1667: Treaty of Breda by which Suriname was surrendered to the Dutch.
- 1668–1675: More than 90 percent of the English settlers leave with around 1,650 slaves.
- ca 1680: Sranan partly relexified by Portuguese resulting in Dju Tongo (Jews' Language) on the Middle Suriname River plantations.
- 1690: Mass escape of slaves, who founded the Matjau clan of the Saramaccan tribe.

As the perceptive reader must notice, this succession of events includes historical events as well as events that were reconstructed by linguists based on linguistic evidence. Thus, the settlement of the colony in 1651 is immediately followed by linguistic evidence fourteen years later that suggest the existence of a speech form recognized as significantly different from English. This language variety is quickly enriched by new speakers of

Portuguese varieties. The newly formed community, then goes through a turmoil of political events leading to a change of politics as well as the migration of a significant portion of the population, just twenty-four years after the foundation of the colony. This population change would continue in the following years as large numbers of enslaved Africans escaped from the plantation regime and founded their own communities with different languages: the languages of the Saramaccan tribes which show clear distinctions from varieties of Sranan emerged on the plantations. Given the rich set of varieties that emerged during the short period between 1651 and 1690, it seems logical to conclude that such linguistic developments must have taken less than a generation to complete.

The debate between Derek Bickerton, Jacques Arends, and Norval Smith (and the Creolist community at large) suggests that to the extent that children and adults SLs of different profiles are involved, the development of creoles appears to consist of different phases: a creation phase that seems relatively fast, and an expansion phase that is subject to external factors related to the “political regime” and the economic practices structuring the plantation population, among other factors. Indeed, a quick survey of the literature suggests that:

- (i) Most creoles fully developed within less than fifty years (an extremely short period of time given traditional claims about language change and grammaticalization).
- (ii) Diachronic studies (e.g., Adrienne Bruyn, Margot van den Berg on Sranan) indicate that newly created forms took several generations before becoming *conventionalized* within the community.

These two observations indicate that the debate on the speed of emergence within creolistics has been conflating the two levels of analysis argued for in this chapter: the individual and the population, hence the paradox indicated in the title of this section. The same two levels were ignored in traditional theories of grammaticalization leading to the apparent distinction between ‘normal grammaticalization’ versus ‘accelerated or contact-induced grammaticalization’. The uniformitarian approach adopted here about language change provides us with a different perspective.

While recombining features, SLs on the plantations constantly created new forms that further enriched the inputs. Competition and selection, however, regulate the distribution of these new forms across the population, such that it may take several generations before a selected form becomes the norm at the population level. Put differently, we must address the speed of the emergence of a creole (or a linguistic change) from the perspective of the interaction between different SLs profiles creating new forms in the inputs and external factors (e.g., change of plantation regime, escapes of large sections of the

enslaved population concomitantly with large imports of enslaved populations) which affect the distribution of these forms in the inputs. We can therefore resolve the apparent paradox in the title of this section by concluding that the creation of a variant is both very rapid (at the individual SL's level) and gradual (at the population level). A change at the level of SL is always abrupt: each SL recreates their language anew based on the inputs they are exposed to. Propagation of a feature within a community of SLs, however, is necessarily gradual, because it is subject to sociopolitical factors affecting the population. The latter point is further supported by Nettle's (1999a, 1999b, 1999c) seminal studies and many related studies showing that the size and structure of a population may correlate with the speed and type of linguistic change (see Kusters 2003; Dahl 2004; Wichmann & Holman 2009; Lupyán & Dale 2010; Trudgill 2010 for some discussion).

Given the sociocultural and political contexts in which creoles emerged on plantations, it seems reasonable to hypothesize that a change may spread faster than usual in such populations. This seems corroborated by the fact that linguistic changes which are typically characterized as a long process in much larger populations living over larger territories, appeared "accelerated" in the context of creoles, so that the following changes completed in different creoles in less than fifty years:

- | | | |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| (14) | <ul style="list-style-type: none"> a. <i>go</i> > <i>o</i> (FUTURE); <i>taki</i> > <i>taa</i> (Comp) b. <i>for</i> > <i>fu</i> (deontic marker) c. <i>who</i> > <i>o</i> > <i>oten</i> ('when'); <i>ope</i> (> <i>pe</i>) (where); <i>omeni</i> (how many); d. <i>acabar</i> > <i>kaba</i> ('completed', 'already') | <ul style="list-style-type: none"> [Saramaccan] [some English-based creoles] [Sranan] [Sranan] |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|

Another lesson that can be learned from these examples regards phonetic reduction, which we already showed in Section 12.3.1 not to be systematic. Three of the forms mentioned in (14a–d) instantiate phonetic reduction typical in grammaticalization studies. Based on the previous discussion and considering that phonetics involves laws of physics, it seems reasonable to suggest that such reductions are (i) language-specific (presumably sensitive to articulatory constraints governing assimilation and speech rate) and (ii) frequency of use. With regard to the latter, there is a consensus in the field that the distributive frequency of a word may affect its pronunciation such that high-frequency words exhibit more phonetic reduction than low-frequency ones (see Luef and Sun 2020 and references therein). Within the framework of recombination subject to competition and selection as proposed here, this would mean that the increasing frequency of a newly created variant selected by more SLs within a population may lead to further phonetic reduction of this variant given appropriate circumstances in the relevant language.

As has already been discussed in the literature, the distributive frequency of a word is subject to various linguistic and extra linguistic factors, including the discourse context, emotion, gender, social class, and SLs' individual

communicative strategies. Understood under the broad label of “population factor” (i.e., extra linguistic factors affecting individual choices within the population) in a specific ecology, we can further speculate that these factors play an important role in the phonetic form and the distribution of variants generated through recombination. Therefore, the apparent arbitrary presence or absence of phonetic reduction, unaccounted for in grammaticalization studies, can be better understood if investigated from the perspective of the interaction between language-specific rules regulating assimilation, speech rate, and population structure impacting frequency of use. What is particularly significant for the current discussion is that these phenomena are not part of the mental grammars of the SL, the subject of study of linguistics, even though they are part of Saussure’s *langue*, a virtual construct.

12.4 Conclusion

In this chapter, I have argued that a uniformitarian approach to the emergence of grammars based on recombination constrained by learning biases as well as competition and selection within the evolving feature pool allows us to propose a different perspective on theories of grammaticalization. It is proposed that traditional views of grammaticalization are not accurate, because they conflate the process of change at the individual and population levels. I have argued instead that (E)-languages change because of cumulative individual changes in population, which in turn can be interpreted as population changes. It appears that current studies of grammaticalization inform us about changes that might have occurred within a population of SLs, which led to the diffusion of a variant within that population, at the expense of other variants.

From this perspective, studies of change should rather inform us about the different competing variants available in a community at a particular point in time – and possibly the variants that are likely to be retained in a situation of competition and selection – rather than about the presumed unidirectionality of a postulated change. The observer linguist cannot predict what linguistic choices will be made by successive generations of SLs in a given population. While recombination may determine the range of possible morphosyntactic and semantic changes typically described in grammaticalization scenarios (e.g., based on the interaction between functional semantic hierarchy (8) and (ad)verb classes), we must resort to other explanations regarding the speed of the process, phonological erosion, etc. which now appear external to the core linguistic component.

Adopting Chomsky’s (2005) three-factor approach, I submit that the process that has been traditionally characterized as “grammaticalization” involves three interrelated aspects: The first, recombination, is an innate human cognitive capacity which allows SLs to select specific linguistic features and recombine them into new syntactic variants. The second represents the feature pool

of such variants that SLs are exposed to, and which is subject to a process of competition and selection (Mufwene 2001). The third, commonly referred to as *grammaticalization*, regards population factors (e.g., profile of SLs), which may favor or hinder the spread of specific variants across a speech community about which an E-language can be postulated.

List of Abbreviations

I, 2, 3 First, second, third person pronoun
 DEF Definite
 DEM Demonstrative
 DET Determiner
 HAB Habitual aspect
 INF Infinitive
 PL Plural
 PREP Preposition
 SG Singular

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