

What African Linguistics Can Contribute to Evolutionary Linguistics

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1. Introduction

Inspired by *evolutionary biology*, the term *evolutionary linguistics* has been used recently by linguists such as Croft (2008), McMahon & McMahon (2013), and myself (Mufwene 2013a, 2013b) to characterize the kind of research being done today on language evolution that focuses not only on the phylogenetic emergence of language but also, or alternatively, on language speciation and the emergence of linguistic diversity, on the actuation of change, or on language vitality and loss. The alternative term *language evolution* is as ambiguous as *biological evolution*, because it applies to both the subject matter and the research area itself, though it is often interpreted quite specifically as *the evolution of language*, in reference only to the phylogenetic emergence of language(s). However, since Darwin's (1859) *On the origins of species*, evolutionary biologists too have been as much concerned with speciation and the emergence of new species as with how changing ecological conditions affect extant species and thus with the endangerment and loss of some, although questions of vitality have become the central preoccupation of macroecology.

Selectively seeking inspiration from evolutionary biology, self-proclaimed evolutionary linguists have been interested in how findings in biology-based paleontology (and indeed also in various other research areas characterized as *paleo-*, such as *paleo-neurology*) can inform our speculations about how and when the earliest ancestor(s) of modern languages must have emerged in mankind. Their research questions have included the following among others: What particular kind of architectures may the primordial language(s) have had? How different were those systems from those of modern languages, notwithstanding the various ways they now vary typologically? How did they evolve into modern complex systems, under what particular ecological pressures? Was the transition from the presumably simpler architecture of the primordial linguistic communication to modern language(s) incremental or saltatory (in a kind of catastrophic way, as claimed by Bickerton 1990, 2010)? One way or another, how does the "language organ" or Universal Grammar fit in this evolutionary scenario?¹

* I am grateful to Bonny Sands for useful feedback on a draft of this paper. I am solely responsible for all the remaining shortcomings.

¹ I will not address here various issues related to the nature of Universal Grammar, as they are discussed in Mufwene (2013a, 2013b). Useful references can be found in these essays, including especially the following: Jackendoff (2002), Lieberman (2006), MacNeillage (2008), Bickerton (2010), Fitch (2010), Corballis (2011), Hurford (2011), McNeill (2012), and Tallerman & Gibson (eds., 2012). See a wider but still selective list of useful references in Mufwene (2013b). I use Bickerton's (1990, 2010) term *protolanguage* here simply to suggest that it can be operationalized to refer usefully to common properties of the embryonic languages developed by our hominine ancestors at different places (Mufwene 2013a), regardless of the particular structures associated with them, provided these are suggestive of the primordial stage of the emergence of linguistic systems. As in Mufwene (1993, 2010), I take issue with the specific structures Bickerton (1990) (see also Calvin & Bickerton 2000) assigns to it, especially the structural similarities, he claims, obtain with incipient pidgins and child language up to 20 months of age, as well as with the speech of feral children and communication with the so-called "linguistic apes" (Terrace 1979), which he characterizes as modern "fossils of language." Evidence is mounting now from the history of European colonization that highlights the role of interpreters in the early trade interactions between Europeans and non-Europeans; it casts doubt on the emergence of pidgins from incipient-pidgin antecedents rather than by basilectalization from earlier approximations of their lexifiers (Mufwene 2005; Mufwene 2013c; Mufwene, ed., to appear).

I suggest “ancestors of modern languages,” in the plural, because, as explained in Mufwene (2013a), there is a kind of oversimplification in speaking of the evolution of language in the singular, or rather in the non-individuated form of reference, focusing exclusively on common characteristics of modern languages and on what makes them products of the same human-specific biological endowment. After all, how likely is it that just one *Homo sapiens* colony would have developed one language, which would have then spread and diversified successively into so many modern languages while it was copied/learned with modification by other *Homo sapiens* colonies and from generation to generation?² Alternatively, how likely is it that, at the relevant magical phase of hominine evolution, the whole *Homo sapiens* population started with an Adamic language (as told in the book of *Genesis*) and this diversified in a way consistent with the Biblical narrative, regardless of whether or not one includes the Tower of Babel in their scenario?

While both views favor the role of learning in introducing change, they don’t quite do justice to the ecological pressures that social life appears to have exerted on the hominine species to produce language (Tomasello 2008) as well as to maintain or give up particular languages in specific settings. As population phenomena, languages can also be expected to be naturally inter- and intra-communally variable, just like biological species (Mufwene 2001). We must definitely consider the possibility that different colonies of *Homo sapiens* produced their respective protolinguistic systems at the same stage of anatomical and mental evolution, under similar socio-ecological pressures, but these emergent communicative systems did not follow identical typological specifications. It is largely, but not exclusively, in this context that I turn to African (genetic) linguistics to address some issues having to do with language diversification and language vitality. This is not because Africa is likely to provide or suggest alone answers to questions arising about language evolution but simply because scholars working on Africa can contribute their share of the knowledge needed to inform research at that level of abstraction where we generalize about Language rather than about particular (groups of) languages.

As becomes evident below, just because African languages are spoken in Africa does not imply that they are older and perhaps closer to the primordial languages. I simply wish to consider the extent to which the scholarship in African genetic linguistics, practiced on languages without written records, can help us realize the complexity of issues that arise from some current speculations on the phylogenetic emergence of languages, more informed as these certainly are than research on the subject matter up to the early 20th century. This chapter is essentially programmatic, articulating several questions to which I have no definitive answers, if any at all, to offer. I simply hope to make the reader aware of a number of difficult questions dodged in evolutionary linguistics and of the need to be more critical of various conjectures on the subject matter. The essay can also be interpreted as an invitation for more Africanist linguists to join in this research area.

2. How population movements and contacts complicate research on the origins of language(s)

2.1. The evolution of linguistic structures

The current position that mankind spread around the world out of East Africa has not dwelled enough on the fact the modern African populations too originated in the same East African region. Those residing today in this cradle of modern humans are there not necessarily because their ultimate ancestors remained in place but perhaps because post-exodus migrations since 30-50 kya brought them back there. This possibility is very much suggested by the various authoritative references on African genetic linguistics cited below. It does not look like our late *Homo sapiens* ancestors just migrated out of East Africa, never to return and leaving behind a minority of populations that would continue to reproduce themselves there. Rather, driven by changing ecological factors (see, e.g., Blench 2006, Dimmendaal 2011, Stringer 2012), at least some of the present residents of East Africa, returned to the cradle perhaps less than five thousand years ago (5 kya), looking for land that was more resourceful or

² For arguments against the alternative and unlikely position that modern humans descend from one single colony of *Homo sapiens*, see, e.g., Stringer (2012).

hospitable. East Africa is indeed a vast territory; and the Afro-Asiatic, Nilo-Saharan, and Bantu languages spoken there differ not only genetically (as suggested by their genetic linguistic classifications) but also typologically. Quite interestingly, the typological classifications are typically not coextensive with the genetic classifications. This mismatch underscores the role of language contact and the emergence of linguistic areas (Heine & Nurse 2008, Dimmendaal 2011).

Although one might claim that the Afro-Asiatic populations have always remained in East Africa, as they straddle both East Africa and Asia (but this is not sufficient evidence!), we also know that the Bantu people migrated eastwards and southwards about 5 kya from the proto-Bantu homeland situated “in the area between Cameroon and Nigeria” (Alves *et al.* 2011), several thousand miles to the West. This latter dispersal is significant, because it entails the reversal of an earlier westward migration, from East Africa, which must have taken place any time between 30-50 kya and about 5 kya. It’s another story whether precisely the same proto-Bantu population(s) had been involved in this earlier migration, as there may not have been any proto-Bantu people to speak of yet at the time of the earlier dispersal. In any case, because of layers of migrations in(to) and out of East Africa, as elsewhere, and owing to lack of written records and conclusive archaeological evidence, chances are that we will never know how much diversity or internal variation there was in the cradle of mankind 30-50 kya (see, e.g., Stringer 2012) and how their structures differed from each other’s.

We should not ignore the possibility that the migrant populations were segregated ethnolinguistically, assuming that the individuals that migrated together must have spoken the same language. Speaking the same language enabled them to support or cooperate with each other during and after the migrations, regardless of whether or not they formed well-organized political groups. We can probably also assume that they had ethnic or racial affiliations that may have set them apart from each other as distinct groups and these linguistic, cultural, and phenotypic differences were constructed to foster intra-group cohesion during their successive migrations and resettlements around the world. So, perhaps what we know today about the geographic distribution of diversity, especially in terms of how far one must travel on foot before coming across another language, may inform us about whether or not polygenesis is a plausible conjecture in accounts of the phylogenetic emergence of Language, indeed whether it is not more adequate to speak of the emergence of languages instead.

Among the facts we try to account for in positing such a construct as Universal Grammar is that all modern languages, which descend ultimately from those produced by our late *Homo sapiens* ancestors about 50 kya (Corballis 2010, Lieberman 2010), are very similar, if not uniform, in their fundamental architectures.³ They are all linear, depend on compositionality to express various complex meanings, and are generative, displaying certain productive patterns which make them easier to learn and especially reducing the amount of the phonetic communication technology that must be

³ As I have been reminded of by Bonny Sands (p.c., 1/1/2013), this date is still controversial, owing to the fact that the anatomy of the modern human appears to have emerged much earlier, 200-100 kya, although Lieberman makes the following observations:

Surprisingly, neck lengths that would support a fully human SVT are not apparent in the fossil record until the Upper Paleolithic, some 50,000 years ago, when a blossoming of complex tools and art appears in the archeological record [. . .] the sudden appearance of an array of advanced artifacts has been taken to be a sign of cognitive advance. [. . .] The presence of a human SVT in a fossil hominid can be regarded as an index for the reiterative neural substrate that makes voluntary speech possible. And that neural substrate also plays a critical role in making syntax, cognitive flexibility, and, yes, dancing possible. Speech, language, and some degree of cognitive flexibility surely were present earlier, but the presence of a SVT specialized for speech at the cost of choking places a date stamp on when brains like ours definitely existed [and presumably on when, or after which, modern languages did too] (175).

I am of the opinion that language evolved gradually in the hominine species. Although embryonic forms of spoken languages may have started even as early as with *Homo erectus* (consistent with Corballis 2002, Lieberman 2002), it may have taken all to way to 50 kya for modern languages to be fully in place. Whether or not this position is correct does not affect the rest of the discussions in this essay.

memorized. They also capitalize on recursiveness,⁴ which enables them to produce long and complex utterances by applying fewer principles than might otherwise be necessary. These architectural characteristics make it possible for us to learn another population's language, although with some deviations, and to translate from one language to another, despite the fact that some meanings are "lost in translation."

Even if one prefers a polygenetic over a monogenetic account of the emergence of languages, one must remember that the hypothesized primordial languages were presumably developed by populations at the same evolutionary stage, under similar ecological constraints of mental capacity and anatomical structure. Thus, the basic architectural similarities between modern languages should not be any more surprising than the fact that, say, "classic creoles," which emerged just about 300 years ago, resemble each other because they emerged from the contacts of typologically similar European languages with the same kinds of African languages during the same colonial period and under similar contact conditions, especially in the Caribbean⁵ (Chaudenson 1992, 2001, 2003; Mufwene 2001, 2005, 2008). Differences among modern languages should not be any more surprising than those in the implementation of the same design technology in the manufacture of cars or computers, which, while constrained by the particular materials they are made with, leave some room for variation in their appearances and in how particular functions are executed.⁶ Regarding languages, parameter-setting, if this is the most adequate way to account for typological variation, accounts processually for the emergence of linguistic diversity, though it does not say anything about the reason(s) why "the parameters are set" differently from one population of speakers to another.

Nonetheless, in all these cases, the similarities between languages (like between different kinds of computer systems or between different music styles played with the same instrument) appear to outweigh variation in design/implementation. They make it less difficult for speakers of particular languages to learn other languages. From this perspective typological variation must be as natural as variation in the production of other technologies, as all of them are cultural productions, regardless of the extent to which "biological endowment" is a prerequisite to the development of the relevant mental capacity that enables their emergence or invention.

We may thus be interested not only in patterns of typological variation among languages but also in what the limits are that reflect constraints imposed by the primary ecological factors which consist of the mind and the anatomy. Thus, are there any particular structures that the mind cannot process (easily)? And are there any mechanical activities that would be too difficult or impossible for the anatomy engaged in the production of language to execute (Mufwene 2013a)? These questions entail considering the possibility that abstract, syntactic constraints associated with Universal Grammar or the so-called "language organ"⁷ may have to do with how the mind works (Lieberman 2006, 2007;

⁴ I am not hereby endorsing the position that recursiveness is a property of languages alone (Hauser *et al* 2007). Lieberman (2006, 2010) and Corballis (2011) show clearly that it is a property of the same mind that produced other domains of culture, concurrently with language itself. See my discussion of this in Mufwene (2013a).

⁵ I use the term *Caribbean* loosely here to also include places such as French Guyane, Guyana, and Suriname, although, strictly speaking, they are in South America. The Society for Caribbean Linguistics includes them; and both Guyana and Suriname belong in the Caribbean Community and Common Market (CARICOM) alliance.

⁶ Likewise, the kind of instrument one uses imposes some constraints on the kind of music one can produce, such as differences between the piano and the guitar, or between the guitar and the accordion used for the same song. Such differences are comparable to those between speech and signed language. On the other hand, I submit that the characterization of variation across populations in the styles of music produced with the same instruments, say the accordion, as cultural is also applicable to differences between different kinds of spoken or signed languages developed by different populations (Mufwene 2013a). This position is independent of whether or not one invokes some specific "biological endowment" as a prerequisite to the emergence of language.

⁷ The latter term appears to be a misnomer for "biological endowment for language," which need not be a single or discontinuous organ. The question remains open about whether it is really genetic (a position disputed by scholars such as Lieberman 2006, 2010), anatomical, or mental (Jackendoff 2010). See relevant discussion in Mufwene (2013a, 2013b).

MacNeilage 2008, Corballis 2010) rather than with properties specific to Language as an abstraction from the common properties of languages.

The polygenetic scenario may actually be more plausible than the monogenetic assumption that differences among the world's languages are just consequences of the separation that followed the exodus out of East Africa (Mufwene 2013b), regardless of whether or not one factors in the post-exodus contacts that Cavalli-Sforza (2001) and Stringer (2012) remind us of, as also confirmed by Africanist genetic linguists such as Dimmendaal (2011) and Bahuchet (2012) and the historian Belcher (2005).⁸ Lest one invokes the Adamic origin and the Tower-of-Babel scenario to explain why the protolanguage would have evolved into so many typologically different languages, one must assume, consistent with variational evolution (the dominant paradigm in biology!), that the original language was not uniform. Putatively, populations migrating in different directions took different varieties or combinations of variants (varying significantly regarding which variants were dominant) with them. This kind of differential dispersal would have generated modern typological variation. Post-exodus contacts, made more evident by the history of colonization and imperial expansion (Ostler 2005, Mufwene 2008) and by the development of linguistic areas (Heine & Nurse 2008), would have made more complex the putative evolution into typologically diverse languages out of a typologically heterogeneous common ancestor, what Ruhlen (1994) identifies as "proto-world."

Assuming that only one population invented that putative protolanguage or proto-world and every other population learned it from them, we can think of that variation simply as inter-idiolectal. Thus, we must think of particular ecological factors that favored the post-spread lexical, morphological, and typological speciation of languages.⁹ It's not clear what ecological factors other than imperfect learning (from the current speakers) would account for it, in addition to the likelihood that different populations would manage their inter-idiolectal variation differently and converge to norms that would differ from one population to another. The question is what particular evidence, in the first place, suggests this strict monogenetic scenario according to which only one population would have invented the putative proto-world. How likely were the late *Homo sapiens* populations to travel from one colony to another and learn that primordial language? Or did the speakers of the putative primordial language colonize all the other populations and subject them to learning it, albeit imperfectly?

Alternatively, it may be claimed that the variation obtained also across groups and may be characterized as dialectal, assuming that speakers of neighboring dialects understood each other, although we have no idea what the overall population structure was before the Exodus. In their quest for new resources as climatic conditions changed, different groups of our ancestors 30-50 kya migrated in different directions and, as suggested by Cavalli-Sforza (2000) and Stringer (2012), among others, they sometimes came in contact with each other. According to this evolutionary scenario, the dispersal out of East Africa would also have provided the possibility for our ancestors to influence each other's

⁸ Belcher often mentions long-distance trade as the principal activity of populations such as the Fulani, the Hausa, and the Songhay, to mention but a few. One must wonder why history does not mention any pidgins associated with them. Did modern pidgins, on which creolistics has focused, emerge under contact conditions specific to European trade and exploitation colonization? Incidentally, the Bazaars of Asia and North Africa, which involved contacts between speakers of diverse languages, especially during the Arabs' trade expansion, did not produce pidgins, though people speak of "Bazaar Malay." This topic needs more investigation.

⁹ More difficult to account for in this case is lexical diversification, as the vast majority of words with similar denotations in different modern languages (e.g., HEAD, FACE, NOSE, and TOOTH) do not appear to be cognates traceable to common reconstructions in the putative proto-world, even if they are cognates in the same language (sub)family. Ruhlen (1994) does not appear to have been particularly successful in this enterprise. Since it is unlikely that our hominine ancestors developed their phonetic inventories independent of the expansion of their vocabularies (Mufwene 2013a), we may assume that cross-linguistic phonemic and morphological variation is a consequence of the different ways in which different populations chose to expand their vocabularies. The variation regards which specific sounds they chose to use in their emergent vocabularies, whether they used fewer or more sounds than other populations, and which particular kinds of combinations they chose (Mufwene 2013a).

languages when different groups came in contact, leading to the kind of mixed typology noted by, for instance, Blench (2006) and Dimmendaal (2011) in the case of Africa.

From the point of view of global rather than parametric typology, this scenario offers an explanation for why several languages have mixed typologies, such as having a head-last structure in the noun phrase but a head-first structure in the verb phrase. By the same token, it would have made it possible for some speakers or groups to shift from their heritage language to another, thus for one language to drive another or others out to extinction, under conditions probably similar to those articulated, for instance, by Buhachet (2012) between the Bantu and Pygmy populations in central Africa and by Dimmendaal (2011) and Sands & Gülderman (2009) between the Khoisan and non-Khoisan languages, or even between the Khoisan languages themselves, in eastern and southern Africa.

The question then is whether this scenario is significantly different from the polygenetic scenario proposed above. After all, since the distinction between DIALECT and LANGUAGE is not based primarily on how morphosyntactic structures differ from each other and since mutual intelligibility is no more guaranteed between dialects than between languages,¹⁰ what do we gain in trying to distinguish the polygenetic emergence scenario that assumed diverse languages from that assuming only diverse dialects?

The issue is actually the same as with assuming a single proto-Bantu without positing internal variation within it and claiming that it diversified simply because its speakers spread all over central, eastern, and southern Africa, where its modern offspring are spoken today, and the diversification would have been the consequence of “internally-motivated change.”¹¹ Lack of motivation, or ecological causes, for the relevant phonetic/phonemic and grammatical transformations during the spread of the putative proto-language simply makes the evolutionary scenario implausible, because we must ask why any change would have occurred at all if the original system was not disturbed. Assuming variation in the proto-language may provide a simple internally-motivated-change kind of causation, viz., that migrations caused different (sets of) variants, with the variants varying in how they dominated in particular allopatric populations or in whether or not they were attested at all, to evolve into new systems and thus to produce speciation. The account becomes more plausible once we factor in the fact that the Bantu populations relocated to places inhabited by Pygmy or Khoisan populations and interacted with them. Although the invaders’ languages prevailed in most cases, they were also influenced by the substrate languages, as is evident by the presence of clicks in otherwise Bantu languages such as Xhosa and Zulu in South Africa.¹²

¹⁰ As a matter of fact, typological differences can obtain between two dialects, for instance in English, such as regarding whether or not double negation or negative inversion (attested in African American vernacular English) is permitted, and regarding what lexical categories can head a predicate phrase in the syntax of main clauses (thus whether the copula can be omitted before, say, a predicative adjective), and whether double modals (such as *might could*) are acceptable.

¹¹ The distinction between “externally-“ and “internally-motivated” change has been posited in a very curious way in historical linguistics, assuming that, unless a population speaking a particular language has come in contact with another, the change is *ipso facto* “internally-motivated.” It is as if speakers, who indeed are part of the ecology of a language (Mufwene 2013a), were part of the language itself and as if a language can display no-internal variation when it is spoken by a presumably homogeneous population. Traditional historical linguists have overlooked the fact that changes in the patterns of interaction within a population speaking an internally-variable language may trigger changes in the system of the language. Since social interactions are external to language and count as an ecological factor, the ensuing structural change is “externally-motivated.”

¹² Citing other genetic linguists such as Güldemann & Elderkin (2010), Dimmendaal (2011: 343) suggests that clicks are attested in some Cushitic languages because the Khoisan languages may have originated in East Africa and the Cushitic languages were in contact with them. On the other hand, Sands & Güldemann (2009: 215) argue as follows: “There is some slight evidence that Dahalo speakers may once have spoken a language similar to the east African click language Sandawe (...) and then shifted to a Cushitic language.” Thus, rather than borrowings, clicks in the relevant Cushitic varieties may be substrate survivals from language shift. According to Güldemann (2008), such shifts may have occurred several times in the history of Khoisan languages, with some populations borrowing from or transferring features to each other. The clicks themselves may not be conservative retentions of languages spoken in African prehistory (see below). Distinguishing borrowings from substrate retentions remains a serious challenge necessitating informed documentation of population movements and their social consequences.

That the Pygmy languages are all extinct today and the Khoisan languages are survived only by a handful of them is likewise reminiscent of contacts between populations speaking different languages since the exodus out of East Africa. This is likewise true of the Indo-European expansion, as is evident from the displacement of Celtic languages by Latin in southwestern Europe and the concurrent emergence of the Romance languages, as well as by continental Germanic languages in England and the concurrent emergence of English (Mufwene 2001, 2008). Regardless of whether or not proto-Bantu was homogeneous and did not vary internally, contact with the Pygmy and Khoisan languages must have contributed to its speciation, notwithstanding later contacts between, say, earlier western and eastern offspring of Proto-Bantu (Newman 1995), which would have contributed to more differentiation (Blench 2006, Heine & Nurse 2008, Dimmendaal 2011).

The nature of interactions between the invading Bantu populations and the indigenous Pygmies appears to have been usually intimate, ending in economic interdependence (Bahuchet 2012). While the fact that the Bantu were demographically superior contributed to the loss of Pygmy languages, the intimacy of their interactions, to the point where Bantu men often married Pygmy women, was certainly favorable to substrate influence, which may have contributed to (further) speciation of the Bantu languages. Unfortunately, the absence of information on these substrate languages (as the Pygmies preceded the Bantu populations in the region) makes it difficult to determine the extent of their contribution to the speciation of the superstrate languages.¹³

These histories of language contacts during the dispersal of Bantu and other Black African populations appear to favor a polygenetic account of the emergence of languages over the monogenetic alternative, especially if one imagines that 30-50 kya human populations lived in small isolated bands but not in the kinds of politically organized societies that developed after the emergence of agriculture. The rest of the story, especially since the emergence of chieftainships, kingdoms, and empires appears to be that of successive colonial expansions, therefore of population contacts, and language competition, language loss, and sometimes language births (as in the case, more recently, of Kikongo-Kituba and Lingala in central Africa), though we should not overlook cases of well-managed language coexistence, as is also evident all of over rural Africa today.¹⁴

The presence of language isolates in several places in Africa (Blench 2006, Dimmendaal 2011, Hombert & Phillipson 2009, Sands & Güldermann 2009), a category that may in fact also be extended to genetically classifiable languages spoken by pockets of populations within otherwise different ethnolinguistic groups, is another piece of evidence suggesting the contribution of migrations both to the emergence of linguistic areas and to differing forms of typological diversity. They are evidence that migrating populations were not all of the same size, did not all relocate at the same time, and did come in contact with each other (though they did not all necessarily assimilate to the larger communities), or did not all have equal economic or political power. The latter factor may have caused language shifts leading to the extinction or just the demographic contraction of some others (see especially Blench 2006, Dimmendaal 2008, Sands & Güldermann 2009). The language isolates also make evident the fact that modern languages are the outcomes of continual reshaping of themselves under various ecological pressures and may be connected to the original languages of some 30-50 kya only very indirectly, thus making the reconstruction of the proto-world envisioned by Ruhlen (1994) a

¹³ I use the terms *substrate* and *superstrate* here in a way truer to the history of migrations to sub-Saharan Africa, and more faithfully to their usage in Romance linguistics, than in creolistics, where, as observed by Chaudenson (1992, 2001) and Goodman (1993), the relation has been articulated, since Hall (1958, 1966) less in diachronic than in socio-political terms of power distribution. Based on Bahuchet (2012), it is not true that the Bantu populations have always dominated the Pygmies socially or politically, though the Pygmies have been marginalized and even stigmatized in some places.

¹⁴ I am not hereby denying the fact that a few African languages have been driven out to extinction by other African languages, as documented in, for instance, Brenzinger (1992, 1998).

monumental, if not impossible, endeavor, if one subscribes to the monogenetic scenario of the phylogenetic emergence of languages. The endeavor to reconstruct the putative proto-world is complicated by several population movements and layers of language contacts that ensued, the displacement of some of the languages, the Pyrrhic victory of the prevailing ones, and the emergence of new ones. This scenario, which is supported by the African demographic history of the past 5,000 years or so, makes it very difficult to tell where and when the less common features originated. As suggested above, one must even question the common assumption that the Khoisan populations are the oldest residents of Africa and their languages therefore the oldest. As far as their association with clicks is concerned, Sands & Güldermann (2009: 218) conclude convincingly:

The possibility is very real that the emergence of clicks as phonemes in Africa represents a later episode in the diversification of human speech, or that clicks may have developed multiple times throughout human history.

The bottom line is that we cannot ignore migrations and contacts in accounts of the current geographical distribution of languages in Africa and how they have influenced the evolution of linguistic diversity, especially if we assume a polygenetic emergence of languages. It is not evident that modern African languages are direct continuations of the same ones that were spoken at the time of the exodus out of East Africa. The Bantu migration routes south- and eastwards, and later ones in all directions that brought some later generations into contact with each other (Newman 1995), also suggest that the dispersal out of the late *Homo sapiens*' homeland was not a rectilinear radial expansion north-, west-, and southwards without reversals of directions by descendants of some of the same populations. Those who assume a monogenetic emergence of language and have been interested in reconstructing the putative "proto-world" ancestor of modern languages from the distribution and typological characteristics of words or stems in the latter cannot ignore this fact, which can also be surmised from layers of imperial expansion in Europe (Mufwene 2008).

Some fundamental questions remain regarding what modern linguistic diversity in Africa suggests about its phylogenetic emergence: Are there any structures that suggest which typological options are more primordial than others? If such a set of features exists, are they part of language universals? Are there any of them that have been lost in some languages and why? Do clicks, the feature most commonly invoked as a characteristic of Khoisan languages, fit in this category?

One must also re-examine a conjecture, voiced in the late 19th and early 20th centuries by otherwise highly respected philologists and linguists such as Dwight Whitney (1875) and Otto Jespersen (1922), both in the footsteps of Jean-Jacques Rousseau (1755). According to them, tones and/or agglutinations are more primitive, i.e. older, than fusional, analytical, and toneless structures. Is there anything that suggests that toneless languages represent the ultimate stage of evolution from erstwhile tonal systems, just as one may argue, following Givón (1971: 12), that "Today's morphology is yesteryear's syntax"? Is there any correlation between tones and agglutination? What to make of the fact that isolating Kwa languages, just like Mandarin (most of whose words are monosyllabic in fact), are also tonal?

On the other hand, unlike Whitney (1875), Müller (1873) claimed that languages with an isolating morphosyntax were not only simpler but also more primitive. This latter claim leaves us to wonder what to make of the fact that some agglutinating Niger-Congo languages, such as Swahili and Wolof, are not tonal? While addressing these questions, how do we overcome the European 19th-century ideology, according to which European languages represented the ultimate outcome of evolution?¹⁵

It appears that the often repeated position that hunter-gatherers such as the Pygmies and Khoisans are the oldest populations in Africa, if not in the world, and that the surviving Khoisan languages are

¹⁵ Even Charles Darwin, who revolutionized approaches to evolution by promoting variational evolution over transformational evolution (still visible in the practice of traditional historical linguistics), was trapped in this 19th-century colonial ideology that claimed Europeans to be more evolved than other populations. *The descent of man* (1871) contains passages that, contrary to his opposition to racism, claim some non-European populations and their languages, including those of Africa, to be "less evolved" than their European counterparts, while he also argues that there is no evidence of such ranking of races, which he equates with "sub-species." However, he does not hesitate to characterize some people as "savage" and "primitive."

therefore the oldest ones may reflect an entrenched attitude toward marginalized populations that have often been treated as inferior. As remarked by Güldermann (2008), we should be more critical of such a hasty conclusion. In other words, knowing that, like the cultures that produce them, languages are not as immutably associated with their speakers as genes are, and knowing all the population contacts that have occurred since the exodus of modern *Homo sapiens* out of East Africa, can anyone conclude for sure that the Khoisan languages, now spoken in residual areas of the Bantu and Cushitic expansions, are those that are most conservative? Can today's cultural variation, which has to do largely with economic practices adapted to specific geographical ecologies (*viz.*, agriculture vs. hunter-gathering vs. pastoralism), really entail differences in the ages of particular populations? How can anyone subscribe to this position, when, as noted by Dimmendaal (2008, 2011), some populations may have shifted their economic practices a few times during their adaptations to changing climatic conditions?

According to Belcher (2005), the populations of Black Africa appear to have relocated several times over in at least the past millennium. Based on Güldermann (2008) and Bahuchet (2012) in particular, the Bantu populations are not the only ones that have relocated over the past 5,000 years or so in sub-Saharan Africa, even if we do not factor in the colonization of the continent by Europeans. Güldermann hypothesizes that the Khoisan populations, which should more properly be divided into Khoe, Kwadi, and other subgroups, have themselves migrated from East Africa to the south and southwest of the continent and from the south to the more northerly areas. They have thus been in contact not only with non-Khoisan populations but also between themselves. They have adapted their cultures, including their economic systems, to changing climatic conditions. Sometimes they have also shifted from their languages or adapted them to those of the populations they came in contact with. Bahuchet (2012) reconstructs a similar scenario for some Pygmy populations, such as the Kola of Cameroon. After living together with Bantu speakers of languages of group A80 and shifted to the Bantu life style, the Kola migrated with some of them from the forest of southeastern Cameroon to the Atlantic coast. Although they have since come in contact with speakers of other Bantu languages, the Kola people still speak the Bantu language of their earlier homeland in the forest as their vernacular. This also tells us that, while the language currently spoken by a particular Pygmy people may be different from that of the surrounding Bantu or Sudanic population, it need not be a survival of their ancestral language.

This history is actually reminiscent of that of language contact under the European colonization of extra-European territories over the last half-millennium. It casts significant doubts on the traditional assumption that languages spoken today still reflect structural properties of those spoken by the ancestors of the relevant populations at the time of the exodus from East Africa 30-50 kya. Far from reflecting evolutionary conservatism, hunter-gathering appears to reflect an adaptation to a particular geographical ecology at a particular point in time associated with a particular level of technological development. Thus, however rare they are in phonemic systems world-wide, click languages appear to be one of the many interesting outcomes of language evolution after long histories of migrations, language contacts, possible language shifts, and language restructuring, which may reflect substrate or superstrate influence, notwithstanding possible innovations.

Dimmendaal (2008) suggests that some populations (even among the Khoisan people) may have evolved out of and back to hunter-gathering practices simply in response to climatic changes. As a matter of fact, according to Güldermann (2008), the present Khoe populations of the Kalahari semi-desert may have practiced pastoralism previously, before they migrated to this region. Thus, as pointed out by Sands & Güldermann (2009), it does not seem that biological evidence about human ancestry alone can settle a cultural issue such as whether click languages are the oldest ones in human phylogeny.

We may also ask whether there is any evidence in African demographic history that suggests some correlation between economic life style and linguistic system beyond lexicon-based Whorfianism. Other than pre- and misconceived ideas inherited from the 19th century about the genetic and/or cultural inferiority of some populations, what is the suggested evolutionary trajectory from click to non-click languages based on? Given the extent of contacts between agriculturalists, pastoralists, and hunter-gatherers in the history of Africa (Dimmendaal 2008, Hombert & Phillipson 2009), is it still possible to tell, through some allegedly "conservative languages" or groups thereof, which structural features are more typical of hunter-gatherers and which ones are not? Even if it were true that some

Cushitic languages may have borrowed clicks from a Sandawe-type language that they came in contact with (Dimmendaal (2011), as in fact have some Bantu languages that have sustained long contacts with Khoisan languages, does this constitute evidence that the Khoisan languages have always had clicks? Can this scenario be constructed in support of the conjecture that the Khoisan languages are older than, and perhaps not as modern as, the non-Khoisan languages? In the context of the migration history of Africa, does the fact that the Khoisan populations preceded the non-Khoisan peoples in the territories where they came in contact constitute sufficient evidence for concluding that the Khoisan languages must be older and likely to provide evidence about the structures of primordial languages spoken at the time of the exodus out of South Africa?

In a different vein, if one continues to assume mistakenly that there is direct continuity since the exodus out of East Africa to modern languages, should the fact that clicks are found almost exclusively in parts of Black Africa suggest that the other populations that migrated to other destinations must have spoken languages that did not have clicks? Or did some of the other languages have them too but lost them simply because they evolved structures more and more different from the proto-language that putatively unifies them? If they had had them, what particular evolutionary factors account for their loss of these sounds? On the other hand, can the assumption that clicks must be among the primordial sounds in hominine evolution be extended to other rare sounds, such as pharyngeal, epiglottal, and epiglottal-pharyngeal consonants, in modern humans' phonemic inventories? Because the Khoisan languages lack these particular sounds too, does the putative evolutionary scenario not put us before an evolutionary contradiction? Are there any particular conservative grammatical features shared only by these putative descendants of the primordial languages? If the best answer to these questions is that the descendants of the primordial languages did not have to retain all the primordial sounds, is there any particular explanation for why the primordial languages would have included all these sounds that are assumed to be articulatorily more difficult to produce?

An attraction of the alternative hypothesis by Sands & Güldermann (2009), viz., that the Khoisan languages of southern Africa appear to have emerged late in modern human history, comes from the fact that the production of these sounds co-opts mechanisms that are not commonly used and may be physiologically more difficult to use. From an evolutionary perspective, this alternative presupposes mastery of the ability to produce the simpler sounds that are more common in modern humans' phonemic systems. This alternative is consistent with the assumption that, phylogenetically, languages have proceeded from simpler to more complex and presumably more difficult structures.

On the other hand, modern human history also offers evidence of evolution in the other opposite direction. For instance, one may argue that the morphosyntax of English and the Romance languages appears to have evolved from complex to simpler structures, with the loss or reduction of several inflectional paradigms associated with gender or noun declension classes, as well as the complete loss of the Noun-Adjective agreement pattern in English (compared to German, for instance). Thus, if there were any conservatism in the retention of clicks in the Khoisan languages, this could be explained by the fact that until they came in contact with the Bantu populations, which have played a greater role in their numerical attrition and structural changes than European languages, they had been in contact only among themselves and retained their uncommon clicks. The Pygmy languages, which had experienced contacts with the Bantu languages much longer, have already disappeared. However, this does not explain why indigenous languages of Oceania, for example, which had also remained isolated for almost as long, do not have clicks or some of the other rare sounds.¹⁶

In a more neutral way, why cannot we assume, in favor of polygenesis, that different *Homo sapiens* populations at similar evolutionary stages, thus endowed with equivalent mental capacities, would have independently co-opted their anatomies to develop ancestors of modern languages? As with the invention of modern technologies, the different populations would not have done exactly the same thing, although they must all have been equally constrained by the nature of the materials used in

¹⁶ An important question that should not be completely overlooked is whether in the first place the language families known to us today existed already at the time of the exodus out of East Africa. If they were not yet, as suggested by, for instance, the late emergence of the Romance languages, the conjecture that languages with rare sounds represent the oldest languages lacks (compelling) empirical justification.

this communicative technology (Mufwene 2013a), viz. the particular configuration of the human buccopharyngeal structure. For instance, the cooption, for the production of phonetic sounds, of an anatomy otherwise designed for breathing and eating did not entail manipulating the relevant organs, especially the tongue, in significantly different ways.¹⁷ The constraints follow from the fact that no more than one part of the tongue can be engaged as a point of articulation during the production of a phonetic sound and the supra-laryngeal cavity cannot be configured in two different ways at the same time either. These constraints account for why speech is strictly linear, unlike sign language (Mufwene 2013).¹⁸ Linearity would in turn entail syntax, or combinatorics, which enables combinations of units to yield more complex units, viz., words (out of combinations of sounds) or phrases (out of combinations of words).

Except for other constraints that may be cognitively or anatomically-based, there was room for variation from one population to another during the development of the speech technology, regarding especially the number of sounds used in the emergent system and what combinations of sounds were exploited in the phonology, as well as how these were associated with meanings in words.¹⁹ What practitioners of African genetic linguistics suggest is that it is simply an accident of history that clicks are found especially in Khoisan languages and some Bantu languages that have had intimate contacts with them, just like pharyngeal consonants are associated primarily with Afro-Asiatic and Caucasian languages and epiglottal consonants with Semitic and Native American languages of British Columbia. These differences in the phonemic inventories of modern languages are comparable to, for instance, computers developed on the same fundamental algorithms implemented with some variation, but each equally constrained by the nature of the same physical materials used in the technology.

Perhaps African linguistics may also help us address the question of whether some languages display more structural complexity than others. Though this question has often been dodged, on the grounds that all modern languages reflect the same stage of evolution and thus comparable levels of complexity, some linguists such as Hombert (2011) and Wang (2011) argue that this is not necessarily true. Just like other forms of technology, some languages may be more complex than others, especially if we assume polygenetic emergence in the phylogeny and accept that the histories that resulted in modern languages are not identical. History includes contact with other languages, to the extent that this may modify the system of a language by way of addition or loss of units/categories or structures. Is there some kind of evidence in African languages that can help us address this question?

2.2. Africa and language vitality from a phylogenetic perspective

What African genetic linguistics reminds us of, especially through its identification of language isolates, is the extent to which different languages have often competed with each other in geographical settings where they have coexisted. Language isolates remind us also of the significance of social integration as an important ecological factor bearing on language vitality.

Language contact, which obtains when speakers of the different languages actually interact with each other and do not just share a geographic space, has produced not only structural changes but

¹⁷ Although this example has typically been cited in linguistics to illustrate exaptation, it does not appear to be the only case of this phenomenon in human evolution. For instance, the hand, designed apparently for grabbing objects and moving them to particular locations it can reach, including the mouth, has also been exapted for aggressive functions such as slapping or punching. The legs and feet are likewise also used for kicking, while they appear to have been designed for standing and walking, running, and jumping.

¹⁸ I interpret coarticulated sounds, such as labiovelar stops, as single sounds produced by concurrent co-option of articulators that would otherwise be involved separately in the production of two different sounds. Interestingly in the case of labio-velar sounds, the cooption of, on the one hand, the velum and back of the tongue and, on the other, the lips is different from making simultaneous contacts with two different parts of the tongue, which is difficult.

¹⁹ This is part of the cultural aspect of languages, regardless of the extent to which they may ultimately be made possible by a “biological endowment” for language or Universal Grammar (Mufwene 2013a).

often also the loss of some languages and/or the emergence of new ones. What has been observed from the colonization of numerous non-European territories by Indo-Europeans over the last half millennium appears to be the last instance of history repeating itself. As a matter of fact, the Bantu expansion appears to have made its contribution to this aspect of language evolution too, as evidenced by the extinction of Pygmy languages and a large number of Khoisan languages. What we know less about is what happened when Bantu or Khoisan populations speaking different languages came in contact with each other, within the same language family, when they also lived integrated and one population assimilated the other. What were the linguistic impacts of various African kingdoms on the vitality of particular languages?

Note that the survival of many ethnic languages in pre-colonial African kingdoms also suggests that there is more to language endangerment than mere expansion of political and economic power. As we should remember, the colonization of the world by Europe over the last half-millennium has not borne uniform consequences regarding language vitality. More languages have been endangered or driven out to extinction in the settlement colonies of the Americas and Australia than in Africa and Asia. The negative effects of the Indo-European expansion outside Europe on the vitality of indigenous languages is really comparable to that the Bantu expansion in sub-Saharan Africa (probably before the emergence of such kingdoms and empires as Kongo, Benin and Mali) and the earlier Indo-European expansion in Europe and South Asia.²⁰ So, what can the political history of precolonial Africa tell us about dynamics of language vitality in geographically multilingual settings that we have not yet fully understood from the recent Indo-European territorial expansion? Can African linguistics help us answer the question of whether language endangerment and loss as experienced in its recent history is unprecedented either as a phenomenon or in the specific way in which loss of language vitality is materializing?

Impressionistically, one may conjecture that it is not evident that the number of languages is downright decreasing, since the scenarios just described calls for a balance sheet of losses and gains. Although a lot has been published, especially over the past two decades, about the negative impact of European colonization and world-wide globalization on the vitality of “indigenous languages,” we must remember that African languages in Africa have been much less affected by European colonial languages than their counterparts in the Americas and Australia. Besides, many more indigenous languages are still spoken in Black Africa, in the wake of pre-colonial expansion of the present language families, than in Europe, although the latter is more densely populated. Besides, the European colonization has contributed to the emergence of some new languages, such as Fanakalo in southern Africa and Kikongo-Kituba in central Africa, even though these have not been lexified by European languages. It has also contributed to the spread of languages such as Swahili and Wolof as major lingua francas without necessarily driving other languages out to extinction in the process.²¹

We must bear in mind that most of Africa was colonized in the exploitation, non-assimilationist style, receiving European languages as elite lingua francas associated with new ethnographic functions in the government and school systems. The Americas and Australia, on the other hand, were generally colonized in the settlement style, which, thanks to the introduction of a new socio-economic life style, favored the spread of European languages as the dominant vernaculars, even at the expense of other

²⁰ The latter is made more evident by the linguistic consequences of the Roman colonization of southwestern Europe and the Germanic colonization of England. In both cases, Celtic languages have been replaced by new languages, viz., the Romance languages and English, respectively. However, one must also think of pre-Indo-European languages of an unknown number that had been driven out to extinction between 6 kya and 1.5 kya, the last survivors of which include Basque and Sami.

²¹ The new languages remind us of the emergence of creoles in the Caribbean and on islands off the western coast of Africa and in the Indian Ocean, among other places, as well as of the emergence of various expanded pidgins which are now functioning as urban vernaculars and/or major lingua francas in places such as Nigeria, Cameroon, and Papua New Guinea. They invite us to nuance a narrative in linguistics that has been almost exclusively on losses, thus not so accurate about language evolution in contact settings, as it has overlooked the concurrent speciation of the expanding languages.

competing European languages (Mufwene 2001, 2005, 2008).²² Differences in colonization styles may also account for why most indigenous languages of North Africa, survived by Amazigh and Tuareg, for instance, have been displaced by Arabic.²³ South Africa is like the rest of Black Africa to the extent that the Afrikaners applied a style of settlement that was not assimilationist (Mazrui & Mazrui 1998), perhaps owing to the fact they too were colonized later by the Britons, this time in the exploitation style. Black Africa is also different from Europe in that it is less industrialized and has not been affected by the nationalist ideology of “one nation one language” that European governments embraced in the 19th century, although this has been challenged during the past few decades especially in Spain but also in France and even in the United Kingdom.²⁴

Africa has in fact experienced all forms of colonization, from contacts with Europe since the Hellenic Empire and internally with, in the best known case to me, the Bantu expansion. The Bantu colonized the Pygmies and the Khoisans on the settlement model, generally leading the latter groups to shift to Bantu languages, as noted above. This evolution has come to completion in the case of the Bantu-Pygmy contacts, although some Pygmy groups speak Sudanic languages as their vernaculars, which may also reflect the extent to which some of them have moved around (Bahuchet 2012).

Africa is thus in a privileged position for a comparative study of population contacts within and with the outside world. Its history suggests that economy, which plays such a critical role in language maintenance and language shift, need not be the modern-style economy. It also tells us that the language a population shifts to need not be a prestigious one. It has typically been a matter of adaptation and survival rather than prestige (Mufwene 2003). The history of Africa puts us in a situation where we must wonder what specific ecological factors triggered or favored language shift before the introduction of modern-style economy, often adopted recently, with modification, in the form of “informal economy” (Vigouroux, to appear). Perhaps the same factors may explain why, unlike Europe, Black Africa has not yet shifted to monolingually-inclined nationalistic linguistic regimes and perhaps will not soon. Instead, it has favored a system of an elitist official language, usually a former colonial European language functioning at an ethnographic layer above the “national languages” (such as Lingala, Swahili, Hausa, and Wolof) which function as urban vernaculars and/or regional lingua francas, and also above ethnic languages, which continue to function as vernaculars in rural areas. Except among the minority elite who now use these European languages as their lingua francas and within even smaller groups that speak them as vernaculars, these languages are associated with ethnographic functions introduced with colonization. It is recently that they have faced competition from indigenous lingua francas in such domains as modern-style politics, the secondary school system, and judicial institutions. Note also that most of the indigenous, ethnic languages are far from being endangered by the more prestigious ones, despite their lack of prestige. When they face competition, the competitors are typically other ethnic vernaculars (Mufwene 2008, 2012).

²² The prevailing language varies depending on the dominant colonizer, viz., Portuguese in Brazil, Spanish in the remaining Latin America minus Surinam and French Guyane (and excluding the Francophone and Anglophone islands in the Caribbean), and English in most of North America north of Mexico, as France lost most of its “Nouvelle France” settlements to England and the United States, and English has been spreading at the expense of French and other European languages since the late 18th century. French is now competing vehemently with English in Quebec but has been losing to English in Louisiana and apparently in the “maritime provinces” of Canada.

²³ To be sure, these are indigenized varieties of Arabic, whose new forms and structures may reflect the effects of contact with the indigenous languages, including those that they replaced.

²⁴ As suggested above, the current linguascape of Europe is the outcome of layers of colonization, evident in part in the Germanicization of the British Isles, since England was invaded by Germanic populations in the fifth century. Another lasting example is the Latinization of southwestern Europe at the expense of continental Celtic languages. The former colonial venture anticipated the settlement colonization of the Americas and Australia, favoring the colonial languages as dominant vernaculars at the expense of the indigenous ones (Mufwene 2008). The second one was the consequence of the Roman imperial expansion, which was neither in the settlement style nor on the exploitation model. It raises the question of whether European languages may still replace indigenous languages in Africa, should the latter’s economy prosper some day and the colonial languages continue to function as prestigious and economically powerful ones. Latin replaced the Celtic languages actually after the collapse of the Western Roman Empire, thanks largely to its success in the prosperous Roman-style economy and urbanization (Mufwene & Vigouroux 2008).

The historical picture of language coexistence and competition becomes more complex once language isolates are also taken into account. How did such languages become isolates in the first place? Are they survivals from conquests by the larger populations surrounding them or are they consequences of lone migrations to foreign territories? Does the presence of many of them “at the fringe of so-called spread zones” (Dimmendaal 2011: 328) constitute evidence of isolated migrations or, rather, of the expansion of language families that drove them to the edge? Or do language isolates illustrate the fact that migrations within Africa have not always involved populations associated with large language families moving together on the model of Bantu people rather than small groups of speakers of individual languages? Or, as Dimmendaal (2008: 847) puts it, do they represent uneven dispersals from earlier ancestral territories that were marked by more linguistic diversity than is evident today? Is there something to be learned from attestations of small ancillary communities speaking languages totally different from the dominant ones spoken in the region and in the very villages next to which they are found? In many cases, at least in the Bantu area where I come from (Group B in Greenberg’s 1963 classification), the ancillary communities are related to populations speaking their language in another area from which they are isolated by some dozens of miles. What factors other than not being integrated in the larger surrounding or neighboring populations account for their survival and the isolation of these groups from the larger populations speaking the dominant languages?²⁵ What do local oral histories have to tell linguistics about territorial language coexistence?

3. Conclusions

The above discussion makes evident the complexity of some of the issues associated with evolutionary linguistics, especially regarding obtaining direct evidence in support of some hypotheses. African (genetic) linguistics can contribute to some of these issues, especially because it can prove the role of migrations and language contact in shaping the present linguascape of Africa. Language contact and its effects on structures and on the vitality of languages discourage any hope to identify particular modern languages in Africa as possible conservative survivals of languages spoken by our *Homo sapiens* ancestors who migrated out of East Africa 30-50 kya. More specifically, the state of the art in African genetic linguistics casts doubts on the conservative nature of clicks in Khoisan languages and on the hasty inference that they are survivals of the primeval languages in question.

The history of migrations also suggests that the languages spoken in East Africa today may not even be direct descendants of those spoken by populations that did not leave that cradle of modern humans at the time of the exodus. The migration trajectories have not necessarily been centrifugal. There appear to have been some returns to the cradle both from within Africa and from outside. African (genetic) linguistics can contribute to sparing us some unfounded inferences that evolutionary linguistics, a primarily speculative endeavor, may find compatible with paleo-evidence but may be questionable on other grounds. Showing how Africanists may participate in this revived research area, banned by the Société de Linguistique de Paris in 1866, was the goal of this modest contribution. I would be remiss to omit the contribution that African linguistics can make to our understanding of language coexistence and possible competition, as well as of the dynamics of language vitality, which may engender the processes of language endangerment and loss.

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²⁵ Such ancillary communities have sometimes survived political, interethnic conflicts engaging the larger populations speaking their respective languages and the larger ones immediately surrounding them, when the conflicts were not local and they had nobody competing for political power.

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