CHAPTER 1: INTRODUCTION

This chapter is written primarily to clarify concepts such as 'ecology', 'evolution', and 'language', which are central to this book. It also states some of my most central arguments, e.g., 1) creoles have developed by the same restructuring processes that mark the evolutions of non-creole languages; 2) contact is an important factor in all such developments; and 3) the external ecological factors that bear on restructuring also bear on aspects of language vitality, among which language endangerment. I will go beyond the brief explanations given in the Preface but will not preempt the more elaborate discussions presented in, for instance, Chapters 2 and 6. In the present chapter, I simply provide basic information that readers will find useful to interpret the book.

1.1. Communal Languages as Ensembles of I-Languages

To the lay person the term *language* means something like 'way of speaking'. Thus *English* originally meant 'the way the English people speak' and *kiSwahili* 'the way the waSwahili speak'. In the case of *kiSwahili*, the Bantu noun class system makes it clear through the instrumental prefix *ki-*, which suggests a means used by *waSwahili* to communicate. Those more sophisticated about communication extend the notion 'language' beyond the spoken mode, applying it also to written and signed means.

Linguists have focused more on the abstract systems that generate utterances and written or signed strings of symbols identified as English, American Signed Language, or the like in lay speech. The systems consist of sets of units and principles, which are selected and apply differently from one language to another, despite many similarities. The units are identifiable in various interfacing modules: e.g., the phonological system (dealing with sounds), the

morphological system (dealing with minimal meaningful combinations of sounds), and syntax (where words combine into sentences). Some principles are generally combinatoric, in the forms of positive rules and negative constraints on how the units can combine together into larger units. Some others are distributive, specifying, for instance, how the phoneme /t/ in American English is pronounced differently in words such as *tea, state,* and *water,* viz., aspirated before a stressed vowel, unaspirated after /s/ regardless of what follows, often with unreleased air at the end of a word, and as a flap between a stressed and an unstressed vowel.

Language change is generally about different aspects of linguistic systems. For the purposes of language **transmission** from one group of speakers to another,[1] any of these units and principles may be identified as a linguistic feature, vaguely on the model of *gene* in biology. Let's bear in mind that the notion of linguistic species proposed below need not be analogous to that of biological species in all respects, not any more than there is an empirically-validated unified notion of biological species in the first place.

Quite germane to some of my arguments about language evolution is Chomsky's (1986:19-24) distinction between internalized language (**I-language**) and externalized language (**E-language**). An I-language is basically an **idiolect**, an individual speaker's system of a

[1] The term *transmission* is used here neutrally to subsume the passage of a language from its current speakers to others. Normally, the speakers do not actively teach it those who target it; nor do the learners passively wait for its system to be passed on wholesale to them. According to Hagège (1993), language acquisition involves both inheritance and recreation. Likewise, Lass (1997) observes that language is imperfectly replicated. These observations suggest why languages evolve from one state to another. I argue in Chapter 6 that the best transmission analog in population genetics is epidemiological.

language. It is to a language what an individual is to a species in population genetics. Among the questions I address are the following: How and when can features of individual idiolects be extrapolated as characteristic of a language as a **communal system**? Is knowledge of a language as a property of an individual speaker co-extensive with knowledge of a language as a property of a population? What is the status of variation in both cases and how does it bear on language evolution?

Chomsky defines an 'E-language' as the set of sentences produced by a population speaking a particular language. Truly, this conception of a language is inadequate (McCawley 1976). Chomsky is correct in rejecting it as leading the linguist nowhere toward understanding how language works in the mind. It just provides data for analysis. Fortunately, few linguists have subscribed to this notion of a language. Most linguists have been Saussurean, both in treating languages as mental systems and in assuming them to be social institutions to which speakers are enculturated. Meanwhile they have failed to address the following question: What role do individual speakers play in language change? This question is central to language evolution and I return to it below.[2]

Idiolects and communal languages represent different levels of abstraction. The former are first-level abstractions from speech, the latter are extrapolations that can be characterized as

[2] DeGraff (1999:9) may have had this kind of question in mind in positing a distinction between *I-creole* and *E-creole*. I will thus misinterpret his "E-creole" as a communal language, an ensemble of I-creoles qua idiolectal systems. Hence, we can deal with inter-speaker variation in creoles and address the following questions among others: When and how do properties of individual I-creoles amount to properties of communal creoles? How did I-creoles and communal creoles develop from the I-systems of their lexifiers?

ensembles of I-languages. Neil Smith (1999:138) denies the validity of "collective language." However, we cannot speak of language change or evolution, which is identified at the population level, without accepting the existence of a communal language.

To be sure, a communal language is an abstraction inferred by the observer. It is a extrapolation from I-languages whose speakers communicate successfully with each other most of the time. It is internalized to the extent that we can also project a collective mind that is an ensemble of individual minds in a population. Since this higher-level abstraction is what discussions of language change are based on, I capitalize on inter-idiolectal variation, among other properties of communal languages, and argue in Chapter 6 that a language is a species. I will then use the competition-and-selection dynamics of the co-existence of I-languages to explain how a language evolves over time.

Two questions arise from this position:

1) Is every feature that is true of a communal language qua species also necessarily true of I-languages? For instance, does the fact that the following sentences are acceptable in some nonstandard English dialects necessarily make them well-formed in all English idiolects or even dialects?

(1) *I ain't told you no such thing.*

'I haven't told you such a thing' or 'I didn't tell you such a thing'.

(2) *Let me tell you everything what Allison said at the party.*

Let me tell you everything that Allison said at the party.

2) When do changes that affect individual members amount to communal changes?

As noted above, the latter level of change is among the phenomena I identify as **language evolution**. This can also involve non-structural changes, for instance, the acceptability of peculiarities of sentences (1-2) by a larger or smaller proportion of speakers in a community. This book says almost nothing about such non-structural changes. However, much attention is devoted to **speciation**, when, for structural or ideological reasons, it is found more appropriate to no longer group together I-languages that used to form one communal language. Rather, they are classed into sub-groups identified as separate languages or as dialects of the same language. This is precisely where the identification of creoles as separate languages fits, in contrast with the equally novel and contact-based varieties of European languages spoken by descendants of Europeans (e.g., American English and Québécois French) which have been identified as dialects of their lexifiers (Chapters 4-5). I return to these questions in Sections 1.3 and 1.4.

1.2. Pidgins, Creoles, and Koinés

Pidgins and koinés play a very negligible part in the next chapters. However, it is difficult to define creoles without mentioning them and it is almost impossible to make sense of some of the issues I raise in this book without also clarifying the conceptual distinction between creoles and koinés. There is a genetic relationship between these two, because the **lexifiers** of creoles, those varieties from which they have inherited most of their vocabularies, have often been correctly identified as colonial **koinés**. These are compromise varieties from among diverse dialects of the same language. Instead of selecting one single dialect as their lingua franca, speakers of the European lexifiers wound up developing a new colonial dialect

which included their common features but only some of those that distinguished them from one another. Such selections did not necessarily originate from the same dialect, nor were they the same from one colony to another—a fact that accounts in part for regional variation. Why those particular selections and not others is a question that deserves as much attention as the selections that produced different creoles from the same lexifier (Chapters 2 and 3). The inset text sheds some light on this question.

INSET DIAGRAM/TEXT ABOUT HERE

What I present below about pidgins and Creoles is only a brief summary of what is discussed in substantial detail in Mühlhäusler (1986/1997), Chaudenson (1992), and Mufwene (1997a). Pidgins have traditionally been characterized as reduced linguistic systems which are used for specific communicative functions, typically in trade between speakers of different, mutually unintelligible languages. They are second-language varieties that developed in settings where the speakers of the lexifier had only sporadic contacts with the populations they traded with. The adoption of the lexifier as a lingua franca by multilingual populations who had little exposure to fluent models accounts in part for its reduced and, to some linguists such as Bickerton (1981, 1984, 1999) and Holm (1988), seemingly chaotic structure.

Although part of colonial history has tied the development of pidgins with slavery, the connection is accidental. In trades between the Europeans and Native Americans, fur was the chief indigenous commodity. On the West coast of Africa, not only slaves but also food supplies (especially along the “Grain Coast”), ivory and gold were traded. The common denominator is *sporadic* pattern of the trade contacts and it is equally true of those varieties

identified pejoratively by the French colonists or travelers as *baragouin*s 'gibberish, broken language' and more commonly by others as *jargon*, with almost the same meaning.

In many parts of the world, as in Nigeria, Cameroon, and Papua New Guinea, pidgins have increased their communicative functions and are also spoken both as mother tongues for large proportions of their populations and as major lingua francas. They are called **expanded pidgins**. The stabilization and complexification of their systems have to do less with nativization than with more regular usage and increased communicative functions. Creoles have been defined as nativized pidgins. Aside from the arguments presented below against this position, it is useful to consider the following. If creoles had really been developed by children, they would be languages in arrested development stage (Mufwene 1999a). The alternative is that they would have acquired adult structures when the children became adults, which raises the question of why their parents would have been incapable of developing such structures during the pidgin stage. Would slavery have affected their language faculties so adversely?

The irony of deriving creoles from pidgins lies partly in the fact that the term *pidgin* (from the English word *business*, in the phrase *business English*) emerged only in 1807 (Baker & Mühlhäusler 1990), over one century since the term *creole* had been used in Romance languages for a vernacular. The date of 1825 reported by the *OED* for *creole* applies to English only. In the colonies where new vernaculars which developed from European languages were identified by laymen as *creoles* or *patois* the term *pidgin* is nowhere attested in reference to earlier stages of their developments. Besides, the first variety to have been

identified as *pidgin English* (< *business English*) developed in Canton in the late 18th century, long after most creoles had developed. Moreover, no creole has been identified in that part of the world.

These arguments are not intended to deny the plausible hypothesis that those who contributed the most to the restructuring of the European languages into the classic creoles (e.g., Jamaican, Guyanese, Gullah, Mauritian, Seychellois, and Papiamentu) must have gone through interlanguage stages. However, **interlanguages** are individual phenomena, restricted to the development of I-languages. They are based on no communal norm, especially in the settings where the creoles developed (Chapter 2). In this respect, they are very much unlike the pidgins as communal systems.

The socio-economic history of European colonization suggests a territorial division of labor between the places where creoles developed and those where pidgin and indigenized varieties of European languages did. The best known pidgins developed in European **trade colonies** of Africa and the Pacific (around trade forts and on trade routes), before they were appropriated politically and expanded into **exploitation colonies** in the second half or the 19th century.[3] They were based on the nonstandard vernaculars spoken by the European traders, to

[3] The distinction between "exploitation" and "settlement colonies" is useful, because each kind of colonization largely determined the kinds of interactions which obtained between Europeans and non-Europeans. In **exploitation colonies**, Europeans had no, or little, interest in developing local roots. They worked for their governments or some companies on fixed terms, hoping to make some money and eventually return home for retirement, after serving in some other colonies. **Settlement colonies** were intended as new permanent and better homes than what was left behind in Europe (Crosby 1986).

Here, Europeans had more commitment to seeing their languages prevail as vernaculars, rather than

which their non-European counterparts were exposed during their occasional mercantile encounters. Although they have often evolved structurally and ethnographically to serve diverse and more complex communicative functions, originally they were indeed structurally reduced and served very basic and limited communicative functions. Note that in trade transactions non-verbal communication often compensates for shortcomings in the verbal mode (Calvet 1999).

During the exploitation colony period, when territories larger than the original trade colonies were under the administrative control of European nations, scholastic varieties of their languages were introduced through the scholastic medium, so that they could serve as lingua francas between the indigenous colonial auxiliaries and the colonizers. Owing to regional multilingualism, the colonial rankings of languages led the emerging local elite to appropriate these scholastic varieties as lingua francas for communication among themselves too. This process nurtured their **indigenization** into what is now identified with geographical names such as Nigerian, Indian, and East African Englishes.

In places like Nigeria and Cameroon, Pidgin English and the local indigenized English varieties have coexisted happily, with the Pidgin almost identified as an indigenous language

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simply as lingua francas, despite the institution of segregation. Therefore they used them also in communicating with the dominated populations. In exploitation colonies, they kept their languages almost to themselves and their colonial auxiliaries, including the local elite to whom they taught scholastic varieties. As a matter of fact, the development of pidgins is also tied partly with usage of native auxiliaries called “grumettos” (see Hancock 1986a), although it is not true that the only varieties that developed among the grumettos were pidgins.

(vernacular for some but lingua franca for others) while the indigenized variety is associated with the intellectual elite. It remains that an important difference between, on the one hand, pidgins (including also West African "français tirailleur" and "le français populaire d'Abidjan") and, on the other, indigenized varieties of European languages (e.g., Indian English and African French) lies in the following fact: the former's lexifiers are nonstandard varieties, whereas the latter have developed from the scholastic English or French introduced through the school system, usually through teachers who were not native speakers. See, e.g., Kachru (1983),Gupta (1991), and Bamgbose (1995) on the latter varieties.

Pidgins in the Americas developed out of similar trade contacts between Europeans and Native Americans, before the latter were absorbed in the expanding European settlements. However, creoles developed in **settlement colonies**, marked by contacts that were initially regular and intimate between the slaves and the European colonists. Most of these were indentured servants and a large proportion of them did not speak the European lexifier natively (Chapter 2). Like pidgins, creoles too had nonstandard lexifiers.

The socio-economic histories of the New World and Indian Ocean, on which our **heuristic prototypes** of creoles are based,[4] do not suggest that these vernaculars have any structural

[4] I speak of "heuristic [creole] prototypes" (Mufwene 1996a) in a different way from Thomason's (1997) and McWhorter's (1998) invocations of 'prototype.' We know of no creole prototypes either in the sense of first specimen or in the sense of best exemplar (Mufwene 2000a). I use the term to identify classic creoles as those which first caught the attention of linguists and have informed our assumptions about their structures to date. They are heuristic prototypes because it is from what is known about them that the term *creole* has been extended almost perniciously to many other contact-based language varieties around the world.

features which are not attested in pidgins (Mufwene 1991a, Baker 1995a), nor that creoles developed (necessarily) from pidgins (Alleyne 1971, 1980; Chaudenson 1979, 1992), nor that creoles developed by **nativization**, as acquisition of a community of native speakers, from any erstwhile pidgins (Mufwene 1999a, contra Bickerton 1999). In the New World, where mostly Native American jargons or pidgins developed, it is not obvious that those which were lexified by European languages contributed more than some lexical entries to the creoles' systems developed by the African slaves. From the founding stages of the colonies till the times when these new vernaculars developed, the Africans interacted regularly with speakers of the lexifiers, although these were not always native nor fluent speakers (Chapter 2).

Creole vernaculars, originally confined to plantations of the Atlantic and Indian Ocean island and coastal colonies, emerged in contact settings where the development of pidgins would be inconsistent with the received doctrine that they are reduced systems for limited and specialized communicative functions. Creole populations, those born in the settlement colonies from at least one non-indigenous parent,[5] preceded the emergence of creole vernaculars, in the homestead conditions in which non-Europeans were minorities and well integrated, though socially discriminated against. They had full access to European languages, albeit their colonial, koiné varieties, which they acquired through regular interactions with their native or fluent speakers, just like European indentured servants did (Chaudenson 1979, 1989, 1992;

[5] The meaning of the term *creole* applied to people varies almost from one colony to another, as becomes obvious in the discussion below. For the latest informative discussion of the term, see Ira Berlin's article in *Encarta Africana 2000*. Domínguez (1986) is a detailed sociohistorical discussion of its usage in Louisiana.

Tate 1965; Berlin 1998; Corne 1999). They did not speak the varieties identified later on as creoles.

It is indeed later approximations of their colonial vernaculars by slaves of the plantation period which would produce creole vernaculars, through what Lass (1997:112) characterizes as "imperfect replication" and Deacon (1997:114) as "transmission error." This process was intensified this time by the decreasing disproportion of native and fluent speakers (creole and seasoned slaves) relative to non-proficient speakers (the bozal slaves). As discussed in Chapter 2, the **basilectalization** process that produced creoles was gradual.[6] However, avoiding treating it as a regular case of language evolution, some creolists (e.g., Bickerton 1984, Thomason & Kaufman 1988) have characterized the process as abrupt. Ironically, there is no evidence that, for example, Gullah—the creole of coastal South Carolina and Georgia in the USA—developed more rapidly than any other North American English variety. Nor has it been proved that the evolution that produced it was not as gradual as those that yielded other contemporary English varieties, which developed between the 17th and 19th centuries.[7]

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[6] Literally, *basilectalization* means the development of a *basilect*, the nonstandard variety that is the most different structurally from the *acrolect*, or local standard variety. In the context of this book, in which the development of creoles is treated as a subject matter of both historical and genetic linguistics, the term denotes the process by which a language variety diverges structurally toward an extreme pole from its lexifier. This process contributes to language speciation as discussed below and in Chapter 2. The structural properties of a basilect reflect the extent of its divergence from the lexifier or the local acrolect. There is no uniform basilect that is common for all creoles lexified by the same European language.

[7] Lightfoot (1999:82; 88f) argues that an I-language changes abruptly. This is plausible if one considers only transitions from one state of an I-language to the next. However, when a new rule is

The development of creoles has also been associated with a break in the transmission of the lexifier (e.g., Polomé 1983). There is, however, hardly any evidence of this, even in polities such as Suriname, where native and large proportions of speakers of the lexifier left roughly fifteen years after the colony was founded in the mid-17th century. A break in the transmission of the lexifier would have entailed no exposure to any form of the language and therefore nothing to restructure. This is quite different from the historical reality that the slaves who arrived during the plantation period were exposed to varieties more and more different from the languages brought from Europe or spoken in earlier colonial periods.

As noted above, the earliest documentation of the term *pidgin* is reported to be 1907 (Baker & Mühlhäusler 1990). This was over 200 years after the term *creole* had been in usage in reference to colonial language varieties, in contradistinction from the metropolitan ways. Linguists have posited in anachronistic order the dubious developmental link between pidgins and creoles. No evidence other than that pidgins have more reduced systems than creoles has been adduced.

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adopted or a current one is modified (Harris & Campbell 1995:48-49), not all the relevant items are affected at the same time. For instance, those English speakers who associate words such as *criteria, phenomena, data,* and *desiderata* with a Greek or Latin plural did not acquire a general rule for the whole class at once. They made the associations only on those occasions when they could hear the words used in this fashion. It is not unusual to hear *data* and *phenomena* also as singulars (on the pattern of *agenda*), while the others are used strictly as plurals. The gradual expansion of the class of items to which a speaker applies the *-um/-a* and *-on/-a* alternations suggests that an I-language does not change abruptly. With regard to a communal language, it definitely takes time before such patterns or changes spread across a population of speakers. This is what makes language evolution gradual.

In the absence of evidence of structural features peculiar to creoles (Mufwene 1986a, 2000a), Chaudenson's (1992) characterization that creoles are specific vernaculars which are defined by the time, place, and conditions of their development seems correct. They emerged during the European colonization of the rest of the world since the 17th century, typically on island or coastal colonies between the tropics, in the contact settings of plantations. In these places, the non-European labor outnumbered even the European indentured servants, not only the native speakers of the lexifier. The creoles developed during a period when the populations were also racially segregated and grew more by importations of new labor than by birth.

Consequently, I use the term *creole* in its sociohistorical sense to identify primarily those varieties that have been identified as "Creole" or "Patois" by non-linguists. I use it also loosely for varieties such as Gullah, which linguists have identified as creoles because they developed under conditions similar to varieties such as Louisiana, Haitian, and Mauritian Creoles. Although I claim in Mufwene (1997a) that creole vernaculars were originally associated with creole populations, Chaudenson (p.c., October 3, 1999) has reminded me that in Martinique the classic creole populations are White, called *Beke,* and are not the ones primarily associated with Martinican Creole. In Louisiana, Creole is associated only with Black creole populations but not with the White ones; and in Mauritius the creole population is of Black African ancestry, while Creole is claimed by Mauritians of diverse ethnic groups to be their national language. The historical practice of identifying some new colonial vernaculars as creoles does not have the kind of logic that linguists have mistakenly invoked to justify it.

Thus, I will resist applying the term *creole* to contact varieties which developed in continental Africa, because there were no European settlement colonies there, except in South Africa, where the identification of Afrikaans as a creole remains controversial. No creole populations in the historical sense developed in the rest of continental Africa, and European languages were not appropriated as vernaculars by the indigenous Africans.[8] Identifying varieties such as (Kikongo-)Kituba, Lingala, and Sango, which were lexified by indigenous African languages, as creoles just adds more confusion (Mufwene 1997a). Though they show some similarities in patterns of morphosyntactic restructuring, they also show some important structural differences from classic creoles (for instance in the domain of time reference).[9] As I argue in Chapters 3, 4, and 5, the fact that more general explanations can be proposed for some structural evolutions attested both in classic creoles and in other languages is good evi-

[8] To be sure, one must deal with the case of South African Indian English, which developed in contact conditions similar to those involving Africans in the New World and the Indian Ocean. To my knowledge the term *creole* has not been applied to this vernacular. Sierra Leone Krio also deserves mention here, since the term *Krio* itself is derived from *creole*. Part of its development has a lot to do with the "repatriation" of former slaves from the New World. See also note 2 in Chapter 7.

[9] Owens (1998) advocates just the opposite of my proposal and argues against characterizations such as "restructured Kimanyanga" or "restructured Arabic," because "restructured X" does not seem operational. He would prefer to use the term *creole*, despite the absence of a yardstick for measuring the extent of structural divergence from the lexifier which would help us determine when a "contact-based" language variety is a creole. His position is based on the fact that varieties such as "Nubi, Sango, and Kituba have been structurally and communicatively so vastly restructured that they are probably no more (but also perhaps no less) like their lexical donor language than Haitian Creole is like French" (p. 118). My arguments is simply that the term *creole* is not necessary to capture similarities in these adaptive evolutions.

dence not to assume a dubious structural process of creolization.

1.3. Language Evolution

As in biology, I use the term *evolution* without suggesting progress of any kind from a less satisfactory state to a more satisfactory one (e.g., Gould 1993:303), nor necessarily from a simpler to a more complex system or vice versa.[10] Evolution has no goal, certainly not to repair any putative deficiencies in a language. Linguistic change is inadvertent, a consequence of "imperfect replication" in the interactions of individual speakers as they adapt their communicative strategies to one another or to new needs. Such adaptations are similar to exaptations in biology or perhaps to kludges in computing. They can introduce generalizations or increase irregularities, just as they can introduce or obliterate useful distinctions (Keller 1994, Croft 2000).

Since linguistic change occurs even when no contact of languages is involved, it is evident that non-native speakers of a language are not the only ones that acquire it imperfectly. One must remember that idiolects of language are not identical. The mutual accommodations that speakers make to each other and their non-identical creative innovations set in motion constant competition-and-selection processes that bring about changes of all kinds. Those changes that

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[10] For an informative discussion of *linguistic evolution* parallel to, but more elaborate than, what is presented in this paragraph, see McMahon (1994, Chapter 12). She highlights the different ways in which evolutionary biological metaphors have been used in linguistics since the 19th century and why they have been shunned in most of the 20th century. She also observes that "these unsuccessful experiments with [the biological] metaphor need not deter us, but should warn us to lay out the basis of comparison carefully, and that we need not equate to compare" (p. 334). This book is written in this spirit.

spread from some I-languages to become exclusive, dominant, minority, or latent patterns in the communal language are the focus of this book. They are like those microevolutionary processes that become significant at the macroevolutionary level when they justify positing speciation. For instance, in the history of the English language, we may consider as speciation the kinds of changes that started in adaptive manipulations of the colonial English systems by individual speakers and amounted to the development of recent varieties like Jamaican Patwa, Jamaican English, Gullah, African-American vernacular English (AAVE), Appalachian English, and why not New England's English or English in the Bronx? It is of course necessary to invoke ecology to account for such speciation, and I return to this topic below.

By *evolution*, I mean no more than the long-term changes undergone by a language (variety) over a period of time. They involve a succession of restructuring processes which produce more and more deviations from an earlier stage. **Restructuring** itself amounts to a reorganization of the mechanical system of a language and/or of the pragmatic principles regulating its use. The process is in fact similar to *genetic recombination* in biology, in which "the parental chromosomes are broken and reassembled" (Mayr 1997:188). An important difference is that language transmission is not necessarily on the parent-to-offspring model. As a matter of fact, language transmission is primarily horizontal. It is variably **polyploidic**, without a limit on the number of individuals or groups that can pass features on to a speaker's idiolect. Moreover, despite numerous recent useful invocations of apparent time in quantitative

sociolinguistics to prove systemic change (e.g., Bailey & Maynor 1987, 1989),[11] the development of an idiolect does not really end until its speaker either dies or becomes linguistically disabled, even though most of the linguistic system is formed by puberty. Some linguistic features are acquired additively or replacively several times in a speaker's life, although in the vast majority of cases most of these changes bear no significant effect on the basic system developed by puberty. In this respect, a linguistic species is like a Lamarckian species (Chapter 6).

Syntactic examples of **adaptations** which amount to system restructuring include uses of 'say' not only as a verb but also as a complementizer after verbs of saying and of perception, as in the following Gullah sentences (represented in eye dialect):

(3)a. *Faye answer <u>say</u> Robert coming*. 'Faye answered that Robert was/is coming.'

b. *Uh hear <u>say</u> Robert coming*. 'I heard that Robert was/is coming.'

In the present case, the adaptations amount to the new uses into which the verb *say* is put that are not attested in the lexifier. The verb *say* is commonly used in all English dialects to introduce reported speech quotatively or indirectly (followed by *that* or a null complementizer in the latter case). However, it is not used as a serial verb (3a), nor as a complementizer (3b).

[11] For an elaborate discussion of this notion, see Labov (1994, Chapter 3). In this approach, evolution is inferred from comparisons of data collected from speakers of different coexistent generations. However, one must beware of age-grading phenomena (Rickford 1992), and such evidence must be corroborated by real-time data, as in Labov (1966) about /r/-constriction in New York City, Trudgill (1974) about the labialization of /ɔ, r/ in Norwich, and more recently Bailey & Thomas (1998) to argue that AAVE and American White Southern English are diverging from each other.

Moreover, whoever is tempted to infer that 'say' has replaced the complementizer *that* in English creoles should remember that it is not used to introduce relative clauses or other complements in complex noun phrases (Mufwene 1989a). The relative clause in (4c) is ill-formed.

(4)a. *This da young man come yah yesiday.*

'This [is] the young man [that] came here yesterday.

b. *This da young man weh come yah yesiday.*

'This [is] the young man who came here yesterday.

c. **This da young man say come yah yesiday.*

'This [is] the young man that came here yesterday.

In this case, the subsystem of English complementizers has simply been reorganized to assign to *say* a subset of the contexts in which the English complementizer *that* would occur but certainly not all such contexts. For the purposes of this book, any change in the structural system of a language involves restructuring, including loss of some units or rules, addition of new ones, and certainly modifications in the direction of simplification, generalization, or complexification by the addition of conditions to the application of a rule.

A set of basic evolutionary questions that have retained much of my attention include the following: Are the restructuring processes that produced creole vernaculars different, in kind or in speed, from those that produced other new varieties of European languages during the same period in the colonies or even earlier in Europe (Chapters 3, 4, and 5)? Is it plausible to assume that vernaculars such as Jamaican Patwa and Louisiana Creole developed faster

than Jamaican English and Louisiana French varieties? Or is it more accurate to assume that they developed concurrently and that evolutionary speed has nothing to do with whether or not a new variety should, or should not, be called a creole? Is there any justification for the position that "classic creoles" developed abruptly, over one generation (Bickerton 1981, 1984, 1999), while languages such as French took centuries to evolve into what they are like today?

I argue in Chapter 2 that creoles evolved gradually, just like the Romance languages, for instance. As a matter of fact, the speed of restructuring into a new system does not matter, since it depends largely on the ecology in which a language evolves. Besides it is hard to argue that Jamaican Patwa or Gullah developed faster than Jamaican English or White American English varieties, respectively. Chapters 3, 4, and 5, deal with different aspects of this subject matter.

One can also ask whether there is a global restructuring process that can be called *creolization*, which changes a non-creole language wholesale into a creole. Such a hypothesis does not seem to account for cross-creole variation in domains such as time reference and number delimitation, where putatively "creole features" vary in some respects (Mufwene 1991a). For example, Papiamentu has an INDEFINITE PLURAL (a "noncreole" feature) but does not have an ANTERIOR marker. Likewise, Gullah has an indefinite article (a "noncreole" feature)—in the form of a schwa, like in (other) English dialects—whereas it is debatable whether Jamaican and Guyanese Creoles' *wan* is really an article or a regular quantifier.

There are several other interesting questions. For instance, is contact so peculiar to creoles

and other "mixed languages" as to make them evolutionarily unique compared to other languages? Are the language-level contacts that produced them different in kind from those which produced the Romance languages, for instance, or those occurring among idiolects? Are idiolect contacts not as much responsible for internally-motivated change as for the externally-motivated changes associated with the development of creoles? Recall that it is typically the small acts of individuals, or the effects of the ecology on them, which wind up having wide-ranging effects on the overall population. The dynamic of this has been identified as the "invisible/hidden hand."

As observed by Weinreich (1953), contact takes place in the mind of the speaker. Relevant to this book is also James Milroy's (1997:311) view that "linguistic change is speaker-based," which is also consistent with my position that communal languages are abstract extrapolations from idiolects. Moreover, it is dubious that real coordinate bilingualism exists, in which linguistic systems are kept separate. Thus, how much sense does it make to speak of language contact as a separate phenomenon from the contact of idiolects? Speakers are central to bringing idiolects, dialects, and languages in contact while communicating with each other. Chapters 2 and 6 capitalize on this peculiarity as the means by which languages evolve.

It is now critical to explain the analogy between a communal language and a biological species as an ensemble of individuals. Although a detailed discussion is presented in Chapter 6, the practical organization of this book calls for a sketchy and complementary introduction for Chapters 2-5 at this stage.

1.4. Thinking of a Language as a Species

Traditionally, a language has been analogized to an organism.[12] This position has artificially prevented historical linguists from identifying the real causes of **internally-motivated change**—what they consider to be "normal" or "regular" kinds of change, in opposition to **externally-motivated change**, triggered by contact with another language. The causation actually lies in the competition and selection that arise from the communicative system(s) available to speakers, and in both the accommodations they make to each other and the adjustments that they make to new communicative needs in their speech acts. Language or dialect boundaries are osmotic, as evidenced by research on code-mixing. Thus speakers' mutual accommodations and adjustments to new communicative needs can draw materials from either the same linguistic system or separate ones.

This alternative perspective entails questioning the distinction between internally- and externally-motivated change. In fact this distinction becomes a moot question under the assumption that a language is a species. Contact among idiolects and the ensuing competition and selection in the means available to their speakers become the default causation for change. Thus what McMahon (1994:248) identifies as "the real **actuation question**" becomes more significant: "why [do] some of these innovations die out and others catch on, spreading through the community, or why [do] certain instances of variation become changes and others don't[?]" These well-justified questions apply better to a language conceived of as an ensemble of idiolects than to a language regarded as an organism without internal variation.

[12] The analogy can be traced as far back as the early 19th century, in Bopp (1833) and Becker (1833). For informative discussions, see Koerner, ed. (1983) and Yngve (1996).

The same assumption that a language is an organism has also prevented genetic linguists from explaining adequately why linguistic speciation occurs in the first place. Geographical dispersal and/or separation alone do not explain why Proto-Indo-European or Proto-Bantu diverged into so many different languages, especially if the proto-language is assumed to have been homogeneous. Could random evolution alone, acting on an erstwhile unified and uniform proto-system, really have led to so much diversity without the intervention of ecology? Or, as suggested by Trubetzkoy (1939) about Proto-Indo-European, was the proto-language itself already heterogeneous and subsequent speciation was the consequence of dynamics of interaction within that internal diversity, with or without the contribution of ecology? Didn't language contact have any role to play in language speciation of Proto-Germanic or Proto-Bantu into the different Germanic or Bantu subfamilies and individual languages? Did speakers of the proto-languages disperse into uninhabited territories? These questions deserve more attention than they have received in genetic linguistics. Chapters 5 and 6 address them.

Chapter 8 focuses on the role that contact must have played in shaping the present linguistic landscape of Africa. It shows how successive waves of indigenous and nonindigenous colonization played a role in bringing populations and languages into contacts that produced language diversification. The focus here is on Bantu migrations into Pygmy and Khoisan territories in Southern Africa, on the Arab colonization of North Africa, and on the European trade contacts and subsequent domination of Africa especially since the 17th century.

The notion of organism is certainly inconsistent with the reality of idiolects and the fact that these vary among themselves, often minimally and perhaps insignificantly, but sometimes

quite significantly. In this connection, it is also useful to remember that language and linguistic communities are typically discontinuous, more like **metapopulation**s in ecology, which, according to Hanski (1996), consist of "**habitat patches**" connected by "**dispersing individuals**." These observations underscore the significance of analogizing a language with a species. I submit that a language is a Lamarckian species, whose genetic makeup can change several times in its lifetime. It is also a **parasitic species**, whose life and vitality depend on (the acts and dispositions of) its **hosts,** i.e., its speakers, on the society they form and on the culture in which they live.

A language is a species which happens to share with a parasitic species quite a number of the characteristics discussed in Chapter 6 but also differs from it in several ways. For instance, within a population, linguistic features (roughly analogized with genes) are transmitted not only vertically (from older to younger speakers) and horizontally (among peers) but also bidirectionally: children do in turn influence their parents' linguistic behaviors, in some cases more so than their parents influence theirs. Moreover, change in the linguistic species can be replacive, substituting one peculiarity for another, for example, the vocalic chain shifts in northern American cities discussed in Labov (1994). But it can also be additive (e.g., the addition of the flap /D/ to the inventory of English alveolar stops in American English, as in the pronunciation of *matter*) and/or subtractive (e.g., loss of the interdental fricatives /›, *⁄, as respectively in the words *thought* and *this*, in some English dialects). Equally interesting about the linguistic species is the fact that even within idiolects (its individual members) competing features often coexist, a state of affairs that gives the speaker

a choice (free or conditioned) in using them.

Another important difference is the intervention of will in linguistic behavior, such as conscious decisions to speak like, or differently from, some other specific speakers, for reasons of identity. Natural selection in the biological species is independent of will, definitely out of the control of individual members of a species, especially at the level of genes, even in human communities where mating patterns are often controlled by rigid social conventions. In language evolution, the interplay of conscious and unconscious choices in speech acts complicates the scenario of the general impact on a communal language of selections that individual speakers make.

However, such differences between the linguistic and parasitic species need not discourage the population genetics approach adopted in this book. In the first place, there are various kinds of biological species, and variation among them has not prevented the development of evolutionary theories, which remain sensitive to this fact. What we need is a common approach to similar structural and evolutionary patterns in both the biological and the linguistic species, while resorting to species-specific accounts of their respective peculiarities. As shown in Chapter 6, there are indeed noteworthy similarities between the linguistic and the parasitic species which justify a population genetics approach to language evolution. For instance, the speed of language change is similar to that of evolution in the parasitic species, where generation is not an important factor, unlike in the animal species. Such differences in speed of change are correlated in part with differences in modes of feature/gene transmission and with the nature of the species.

The language-as-species trope also makes more obvious the fact that the idiolects that make up a language are similar on the Wittgensteinian family resemblance model. Speakers sometimes claim to speak the same language by invoking a common linguistic ancestor but not because they necessarily understand one another. Such a notion of a species is among the alternatives available in biology (O'Hara 1994). The often-invoked argument of mutual intelligibility really amounts to the potential that speakers of a language have to communicate with each other, just like members of a biological species have the potential to interbreed. Overall, in both biology and linguistics, the life of a species is conceived of as a function of the lives of its constituent members. A species is changed by the effects that the environment (one of the relevant meanings of *ecology*, see Section 1.5) exerts directly on individual members, rather than on the species itself. As suggested in section 1.1, a language is an abstraction which linguists should not overly reify.

From an evolutionary standpoint, an important question about both the linguistic and the biological species follows from the above conclusion: how do selections made at the level of individuals sometimes wind up as selections at the level of the species, while numerous other selections are of no particular consequence to the species? When do linguistic choices made by individual speakers translate into changes in the communal language? When ecology is adequately factored in, these questions boil down to the problem of **multiple articulation of selection** in a population, with different selections applying concurrently at different levels within the population. On the one hand, there are selections made by individual speakers which assign each idiolect what in biological terms would be identified as its genotype. Each

idiolect has its idiosyncrasies, despite its overwhelming similarities with others in the same communal language. On the other, the community at large makes its own selections through the fact that the innovations or idiosyncrasies of some speakers, for instance the vocalization of /r/ in the word *floor* [flɔ˞], are copied by other speakers while others are not, for instance the alternative rhotic pronunciation [flɔr]. (Interestingly, those features that spread within a community need not originate in the same speakers.) The community-level selection is what produces macroevolutionary developments identified as changes in a communal language. However, so far the principles regulating both individual and group selections are not fully understood. My invocation of an ecology-sensitive model of markedness in Chapter 2 to account for feature selection hardly deals with this challenge for future research.

Clearly, individual speakers are critical unwitting agents of language evolution. This occurs through the day-to-day accommodations which speakers make to one another, the adjustments they make to new communicative needs, and the simple condition of imperfect replication during language transmission. Accommodation emphasizes the significance of idiolect contact within a population of speakers and the central role it plays in language change. While interacting with one other, speakers contribute features to a **pool** from which they make their selections that can affect the evolutionary trajectory of a language. The features they contribute can be from the same language or dialect, or from different ones. The selections they make are not necessarily constrained by the origins of the features, and each idiolect reorganizes its selections on the model of **blending inheritance** in biology. However, we must remember that, unlike in the animal species, this blending is **polyploidic**, subject to threshold

effects. What becomes obvious here is that the extent to which a language is restructured is in part determined by structural differences between it and the other systems with which it has been in contact (Chapter 2). This is obvious at the interidiolectal level. I submit that contact as an ecological factor is everywhere in our day-to-day interactions. It nurtures the invisible hand that executes change.

There is another fold of competition in a linguistic community, that among alternative means of communication. In many places around the world, speakers use more than one language and/or dialect. Usually they alternate between these codes. However, in some cases they are forced by their circumstances to use only, or mostly, one of the dialects or languages, developing passive, or no, knowledge of the other alternatives. The facts discussed in Chapters 2, 3, and 6 show that the choices of language varieties and/or of the features that wind up being associated with such varieties are not necessarily exclusive.

Situations where speakers have a choice between two or more languages/dialects also lead to mixing. Much of the literature that has proposed all sorts of names for different kinds of mixed systems (e.g., Thomason & Kaufman 1988, Arends et al. 1995) only shows that there are diverse ways and degrees of mixing linguistic systems. What is relevant to this book is that these different kinds and/or degrees of mixedness illustrate ways in which a language may speciate in ecologies where it has been in contact with at least one other language. A language or dialect may borrow heavily in vocabulary, another heavily in grammar, and another in both. Mixing of grammars can even take place in different ways, for instance, in the verb phrase but not in the noun phrase, or vice versa, as in Michif (Papen 1987, Bakker 1997) and Copper

Island Aleut (Golovko & Vakhtin 1990). What the literature reveals is simply that there are probably no constraints other than those imposed by Universal Grammar on how materials from heterogeneous sources can be combined to form a new language variety. Schuchardt (1884) and Hjelmslev (1938) were right in arguing that every language is mixed to some extent.[13]

There is no clear measure of what extent of mixedness would make a language variety genetically not derivable from another. Political considerations notwithstanding, we cannot continue to privilege the prevalent origin of the vocabulary in some cases (the practice for accepted genetic connections in genetic linguistics) and ignore it in others (the case of creoles), nor to consider the correct grammatical contributions for some languages but the wrong ones for others. This embarrassing practice is obvious when one compares traditional genetic linguistics with studies of the development of creoles. We may as well start considering alternative ways of grouping and representing languages genetically that accommodate either multiple parentage or, simply, the influence of other languages on the evolution of a particular language (Chapter 5).

From the point of view of speciation in genetic linguistics, there seems to be no reason for not considering creoles as offspring of their lexifiers (Chapters 4 and 5), regardless of whether

[13] In the case of Copper Island Aleut (CIA), Anderson (1999) shows that layers of contact can affect the structure of language in curious ways. CIA's mixed system from the 19th-century contact of Aleut and Russian has undergone more influence from Russian since the 1960s. Its speakers were relocated to nearby Bering Island and its ethnographic status was eroded, which made allowance for its verb complex and interclausal syntax to borrow more Russian patterns.

they are considered as separate languages or dialects of their lexifiers.[14] The structural differences between creoles and their noncreole kin which have misled linguists into attributing different genetic statuses to them do not amount to differences in the evolutionary processes that produced them. Yet, the evolutionary processes are what account and should matter for language speciation. Structural differences between creoles and their noncreole kin amount to differences in outputs as determined by variation in the ecological conditions affecting the same language restructuring equation.

Such ecological variation, which includes differences in the kinds of systems which competed with each other during the restructuring of the lexifier, also accounts for structural variation from one creole to another. Like the growing evidence on code-mixing, creoles indicate that there is more osmosis in language than has usually been assumed in linguistics. In a lot of ethnographic settings, as made evident by the literature on code-mixing and non-

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[14] Justifiably, DeGraff (p.c., 16 September 1999) takes issue with this position, arguing that the identification of creoles as offspring of only their lexifiers ignores the role of language contact and the contribution of the **substrate** languages to their structures. He is partly supported by Nettle (1999:7) who observes:

> Thus our classification of Fyem as Niger-Congo is really a simplification that hides the true, mixed nature of its parentage.
>
> The fact that individual grammatical items can pass between languages that are unrelated in the conventional sense means that there are many linguistic patterns in the world that are not explicable in the conventional family-tree framework.

I am not sure that the question can be answered to anybody's full satisfaction, unless the **Stammbaum** model itself is rejected or modified to represent multiple parents (Chapter 5). The only justification I can offer for my statement is ideological, assuming that those who developed creoles did actually target their lexifiers and the latter were restructured during their appropriation by these new speakers.

linguistic gestures,[15] speakers are more concerned with communicating, by any of the means available to them, than with language or dialect boundaries. Code-mixing or, more generally, language or dialect contact, is probably more central to normal language evolution than has been recognized in historical and genetic linguistics.

The competition-and-selection model also makes it possible for us to discuss fruitfully another aspect of language evolution, viz., whether or not a language thrives or is endangered by the competition of other languages in a particular population of speakers. In Chapter 6, I survey the fates of some languages around the world, covering different periods over the past two millennia and highlighting various ecological factors that bear on their vitality. I show that the typically unconscious selections made at the ethnographic level for, or against, some languages are concurrent with choices that individual speakers made of linguistic features which contributed to language speciation. These selections did not consistently favor one and the same language. For instance, the development of the Romance languages reflects two facts: 1) Vulgar Latin prevailed over the Celtic languages of today's Romance countries, and 2) in turn it was affected by Celtic substrate features and by later contacts with Frankish (a Germanic language variety) in France and with Arabic in Iberia (Posner 1996). Indeed Vulgar Latin won a **pyrrhic victory**, prevailing over its competitors but quite modified by them in the process.

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[15] In the case of non-linguistic gestures, I have in mind here studies such as McNeill (1992) which show indirectly that in face-to-face interactions the mixing of codes is hardly constrained by the modalities (e.g., speech organs vs. hands) used by the different codes. Gestures can complement the spoken utterances in some communicative acts.

An understanding of this evolution helps us realize that little of what is happening today to the Romance languages and to the languages with which they have been in contact outside Europe is unique to these recent situations. For instance, the fact that there are now restructured New World varieties of French, Portuguese, and Spanish which have vernacularized at the expense of Native American languages is reminiscent of the contact of Vulgar Latin and the Celtic languages in Europe. One can say that history is repeating itself.

Chapter 8 provides similar information about language speciation in Africa. It articulates further the difference between settlement and exploitation colonization in order to explain the differing evolutionary trajectories of Arabic and European colonial languages on this continent. The spread of Arabs in North Africa was on a settlement model similar to that of the European colonization of the New World, with the language of the settlers prevailing at the expense of those more indigenous to the area and yet speciating into new varieties. This is also similar to the linguistic consequences of Bantu dispersal south of the Sahara.

On the other hand, with the exception of the Afrikaners, the Europeans colonized Africa on the exploitation model. It imposed social segregation from the beginning and limited the exposure of the colonial languages to small fractions of the indigenous populations, relying mostly on the school system for their spread. The result has been the emergence of indigenized varieties which function as lingua francas only for very specific functions and are not endangering the indigenous African languages in any way.

A significant linguistic impact of the European colonization is the development of lingua francas such as Kituba, Lingala, Sango, and Shaba Swahili from labor migrations. They have

made more compelling the role of contact in language speciation. We need not worry about whether they should be called pidgins, creoles, or otherwise. We should focus on the fact that population movement and language contact have typically underlain language evolution in Africa and elsewhere. Such language varieties and other, non-creole ones discussed in this book cast doubt on the position that the role of contact is negligible in "normal" language evolution.

It is hard to resist noting similarities between the developments of the creole and noncreole varieties especially in the New World (Chapter 6). In both cases, a European language has been appropriated as a vernacular (in part) by groups which spoke different languages and must have influenced its restructuring. Also, in both cases the contact and ensuing change took place in an **exogenous** colony, non-indigenous to both those whose language has prevailed over others and to those who shifted to it. The differences between the evolutions that produced the creole and noncreole vernaculars turn out to be especially ecological in the sense explained below. Much of the outcome was determined by the specific structural features of the European varieties to which the non-native speakers were exposed, by the patterns of interaction under which the latter shifted from their own vernaculars to the European languages, by the structural features of the non-European languages, etc. We linguists must ask ourselves whether, by arguing without convincing demonstration that creoles have developed by their own unique processes, we have not contributed to disfranchising these new vernaculars.

1.5. What is the Ecology of Language?

Gould (1993) identifies ecology as the decisive factor that rolls the dice over the competition both among individuals within a species and among species that share the same habitat. It favors some individuals and/or species, giving them selective advantage over others. Otherwise, there are no individuals or species which out of context are more fit than others. This notion of ecology supports the layperson's identification of it with the environment. This is also interpretation in linguistics since the Voegelins and Schutz (1967), in the few cases where 'ecology' has been invoked to account for language evolution.

However, in biology ecology is also internal to a species (Brown 1995). In addition to the environment, it includes a number of factors within a species. In the case of language evolution, such factors include cross-dialectal and interidiolectal variation (insofar as they are considered parts of coexistent systems in a communal language), as well as the way structural principles coexist within a language. All aspects of variation accessible to speakers bear on choices that they make consciously or unconsciously in their speech acts, the part of the "invisible hand" that influences the evolutionary trajectory of a language. For instance, in AAVE, one has the option of predicating adjective and preposition phrases with or without a copula in the present tense, such that *Larry* ∅ *tall/with Mary* is as well-formed as *Larry's tall/with Mary*. Such copula-less predicative constructions are nurtured ecologically by the existence of other constructions such as the following in which the copula seldom occurs: *Tracy done gone* and *Tracy bin done gone*. Evolution toward predicative constructions in which the copula is required in the present tense would have to involve a restructuring of these aspects of AAVE's tense-aspect system too. Just because it is required in other American

English dialects is not enough of an ecological factor to trigger a convergence of AAVE with standard or White middle-class English.

Linguistic features in a system also constitute part of the ecology to one another. Removal, insertion, or modification (of the role) of a variant affects the distribution of other variants in a subsystem, thus yielding a different kind of system overall. For instance, the addition of the flap [D] in the American English phonological system, in words such as *latter* and *ladder* (pronounced the same), has contributed to distinguishing this variety from others, as it has reduced the overall phonetic distribution of the alveolar stops /t, d/ in its lexicon. Even features that are not variants form part of the ecology for each other. Thus, in some English dialects, the loss of the interdental fricatives /›, */, as in *<u>th</u>ink* and *<u>th</u>is*, has also affected the distribution of alveolar stops /t, d/, with the latter pair gaining a wider distribution than in other dialects. In this case, one depends more heavily on discourse context to distinguish words such as *tie* and *thigh*, or *den* and *then*, when they are produced indiscriminately as *tie* and *den* but not as *thigh* and *then*. In some other cases, it is the labiodental fricatives /f, v/ which occur where the interdental fricatives would be expected, with the words *Ruth* and *roof* pronounced alike as *roof*.

At the cross-dialectal and interidiolectal levels, the mutual accommodations invoked in sections 1.3 and 1.4, which may cause changes within the system, are often the result of responses to species-internal ecological relations. Thus not only does the affected dialect or idiolect lose the interdental fricatives /2, */ but it also gains wider distributions of the alveolar stops /t, d/ and/or labio-dental fricatives /f, v/ in its lexicon. In the case of the above

examples, attempts to sound like, or to remain different from, other speakers influence some individuals' speech characteristics and act as an external ecological factor, while the coexistence of structural principles acts as an internal one.

So, the fact that the lexifier of a creole, or any language undergoing change, was heterogeneous before the change is an important ecological factor that bears on its restructuring, which often results in the reallocation of expressive functions among units already in the system. For instance, on the plantations where English or French creoles developed, their lexifiers were typically incipient koinés from diverse dialects imported from the European metropole and from second-language varieties spoken by European indentured servants from other countries. Those who developed the relevant creoles were often exposed to more than one way of pronouncing the words *this* and *think* in colonial English or the word *trois* 'three' in colonial French.

Thus, part of internal ecology in the evolution of a language lies in the actual structure of the language itself just before its restructuring: what units and principles were in place and how interrelated were some of them? Knowledge of the state of the language at that time would preempt unjustified explanations. For instance, knowing that pronunciations such as /gwot/ for *goat* and /pyɐ/ for *pear* were attested as alternatives to the more common ones in the colonial English to which non-Europeans were exposed—just as did lexical uses such as *learn* for 'teach' and *thief* for 'steal', and constructions such as *he was a-huntin*—would make it unnecessary to seek exclusive non-English explanations in order to account for their presence in Atlantic creoles.

These examples are **not** intended to dispute the role of substrate languages (the other external ecological factor relative to the lexifier) in the selection of these peculiarities into Atlantic English creoles. As explained in Mufwene (1993a), **congruence** of features of (some) substrate languages with variants available in the lexifier often favored the selection of some features that could have been omitted, such as some of the above examples which did not find their way into non-creole varieties of North American English. Assuming that the local varieties of English which lexified the different pidgins/creoles were very similar (even if internally variable) in both the Atlantic and the Pacific areas, cross-area differences between these new varieties support the ecological role of the substrate languages in the selection of particular features, including those originating directly in the substrate languages (for instance the DUAL/PLURAL distinction in Tok Pisin).

However, what must also be realized is that in most cases different selections of features could have been made if in the first place the options now attested in a pidgin or creole had not been available in the lexifier. As the rest of the creoles' systems show, speakers of the substrate languages were definitely not determined to continue using principles of their ancestral languages by simply associating them with (the phonological forms of) lexical items from the lexifier (cf. Lefebvre 1998, Lumsden 1999). As much incontrovertible substrate influence as there is in Oceanic pidgins, these new varieties are nearly not as complex morphosyntactically as their substrate languages (Sankoff 1984, 1993; Sankoff & Brown 1976, Keesing 1988).

During the development of creoles, as of other new language varieties, the structural

systems of the lexifiers were naturally undone and redone a few times, being gradually modified in the transmission process, consistent with Lass's (1997) principle of imperfect replication and with Meillet's (1929) and Hagège's (1993) observation that language transmission involves both inheritance and recreation. One can also argue that, by **the principle of least effort**, those who made the new varieties used materials already available in the lexifier (the inheritance part) and sometimes modified them unwittingly to produce (somewhat) different systems (the recreation part). The original system can hardly remain intact and the dynamics of the coexistent variants have a lot to do with the evolutionary path that a language takes. Overall, internally-motivated change would be hard to explain, from the point of view of causation, without the kind of approach presented here. The agency of change lies definitely within the behavior of individual speakers, and causation partly in the mutual accommodations they make to each other while they are more intent on communicating effectively than on preserving idiolectal, dialectal, or language boundaries.

The following questions are relevant to understanding ecology: Were the evolutionary processes that produced the relevant new varieties were random? What role did the combination of internal and external ecologies play in the development of all the new varieties of European languages since the 17th century? What does the development of creoles tell us about language evolution in general? The essays assembled in this book are intended to help us answer them or at least reformulate them more adequately. In some cases, they do no more than open a debate on issues that are much more complex than we may have imagined. In some others, they simply show that it may have been premature to declare or assume the case closed.

The question of whether creoles are structurally and/or evolutionarily different from non-creole languages is quite open, just as is that of whether they are dialects of their lexifiers or separate languages (by any structural linguistic criteria?). How much has really been explained about language speciation? Can the role of contact be overlooked in the latter case? How are traditional questions of language evolution related to those of the "life of a language," which have to do with whether a particular language thrives or is doomed to extinction? How do competition and selection work concomitantly with language transmission? These are all questions that I hope this book makes more interesting for linguists to address.