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# **Contact-Genetic Linguistics: Toward a Contact-Based Theory of Language Change**

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## ***1. Language transmission and genetic relatedness***

Until recently, the default view in genetic linguistics has been that the “normal” transmission of a language occurs when it is acquired by children as their first language (L1) from their elders. The necessary consequence of this view is that languages that fail to pass the criterion of “normal transmission” – in other words, languages whose histories contain a significant amount of adult non-native (L2) acquisition – also fail to fit within the genetic classification scheme. Although these assumptions have implicitly underlain most of historical linguistic writing and discussions of language classification (Noonan 2010), they are rarely articulated explicitly. A notable exception is Thomason and Kaufman’s (1988) extended discussion of the issue, in which the above assumption and its corollary occupy the third and the fourth place in the list of “fundamental theoretical assumptions that underlie the concept of genetic relationship”:

Third, a language is passed on from parent generation to child generation and/or via peer group from immediately older to immediately younger, with relatively small degrees of change over the short run, given a reasonably stable sociolinguistic context. . . . Our fourth assumption is that the label “genetic relationship” does not properly apply when transmission is imperfect. (Thomason and Kaufman 1998: 9)

The theoretical importance of the concept of “normal transmission” for that of genetic relationship is reiterated at various points throughout the book, including in the following quote:

Our approach to the study of genetic relationship is thus based theoretically on the social fact of normal transmission rather than merely on the linguistic facts themselves. (Thomason and Kaufman 1988: 12)

The principles articulated in the above quotes have remained largely in place, as evidenced by the following quote from a more recent source:

A language (or dialect) Y at a given time is said to be descended from language (or dialect) X of an earlier time if and only if X developed into Y by an unbroken sequence of instances of native-language acquisition by children. (Ringe, Warnow and Taylor 2002: 63; cited after Labov 2007: 346)

Alongside this approach to the issue of genetic relatedness within what Noonan (2010: 48) refers to as “orthodox linguistic circles”, there has been growing awareness of a large number of linguistic varieties and language-transmission situations that do not fit the strict definition of genetic relationship provided in the above quotes. This naturally raises the question of how/whether to genetically classify language varieties that have come into being in situations of less-than-perfect intergenerational transmission.

Several kinds of such situations may be distinguished, each involving a different type and degree of adult non-native acquisition in the language's history. One concerns language varieties that have served as lingua francas over large areas, and have consequently had a significant history of non-native acquisition. In his 2007 book *Language Interrupted: Signs of Non-Native Acquisition in Standard Language Grammars*, John McWhorter argues that the grammars of several of the world's major standard national languages show the effects of past periods of massive non-native acquisition. McWhorter examines five such languages in detail – English, Mandarin, Persian, Colloquial Arabic, and Malay – and mentions in passing others as also likely to have passed through periods at which the generational type of transmission – which he, incidentally, also regards as “normal” – was far outweighed by transmission to adult speakers of other languages. McWhorter views the latter type of transmission as “abnormal” and compares it with that which leads to the development of creoles. His views on the language transmission issue are articulated in the following quote:

However, I openly assert that creoles are the product of a process of language transmission that is most definitely *abnormal*. I designate creoles' development as abnormal because the sociohistorical nature of their timeline is much less common than the timeline of thousands of other languages worldwide. That is, their development was not *the norm*. However, this book has been devoted to arguing that the development of many noncreole languages, including the one I am writing in which is my native language, was also abnormal. The development of both English and Haitian Creole was abnormal – and fascinatingly so. (McWhorter 2007: 274; emphasis is original)

In his book, McWhorter does not explore the consequences of these languages' allegedly abnormal transmission for their genetic classification. Their traditional genetic affiliation is not questioned (cf. such remarks as “English and the other Germanic languages”, “Mandarin and its sister Chinese languages”, “Persian's ancestor Old Persian” on pp. 10 and 138); in fact, the book's whole argument hinges on a systematic structural comparison between these languages and their “relatives”, whose transmission is assumed to have been “normal”. The issue of the genetic affiliation of lingua franca-type languages is relevant to the argument of this paper because, in their case, the assumed necessary condition of a genetic relationship – “normal transmission” – is not met. Strictly speaking, and in the spirit of the above quotes from Thomason and Kaufman (1988), no genetic relationship can be claimed between, e.g., the “abnormally” transmitted English and other Germanic languages, which have been transmitted “normally”.<sup>1</sup>

But if the issue of genetic affiliation was not raised by McWhorter (2007) with respect to such major standardized world languages as English and Mandarin, it has been amply discussed in the literature with respect to another group of languages in whose histories

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<sup>1</sup> Noonan (2010) believes that substratic influence is not problematic for the generational transmission approach “as long as there are some members of the community who continue the generational transmission of the linguistic tradition” (57). This position immediately raises the question of how to determine the ratio of L1 to L2 language acquirers that is necessary for the language to (still) be viewed as genetically related to its source. I discuss this issue below in connection with Holm's (2004) model of partial restructuring.

non-native acquisition has played a major role: creoles.<sup>2</sup> Creoles derive the bulk of their vocabulary from their lexifiers, whereas their grammars include elements from both their lexifiers and substrates, and also incorporate linguistic innovations and the effects of language simplification by speakers of the lexifier and imperfect acquisition by speakers of the substrate languages. Given these multiple sources of linguistic structures, experts are divided on the issue of the linguistic classification of creoles, based on whether or not they view their development from their lexifiers as continuous or interrupted. On one side of the debate are such scholars as Hall (1950, 1958), Goodman (1964), Owens (1991, 1997), DeGraff (2001 et seq.), Chaudenson (2003), and Mufwene (1997 et seq.), who argue for the continuity between creoles and their lexifiers and view them as genetically related. Thus, Owens (1997) indicates that up to 90% of Nubi lexicon, and consequently also its phonology, is derivable from colloquial Arabic; in his other work, he shows that Nubi shares more structural features with colloquial Sudanese Arabic than with the southern Sudanese languages that have served as its substrates (Owens 1990, 1991). On the opposite side of the debate are creolists and historical linguists who view creoles as structurally and socio-historically exceptional and rely on non-genetic approaches to their origin and classification, such as the universalist bioprogram idea (Bickerton 1981, 1984); or emphasize their connection to their substrates (Lefebvre 1998), although without necessarily articulating this connection in genealogical terms. Another strong current in contemporary creolistics is to eschew discussion of the genetic affiliation of creoles altogether by focusing instead on their synchronic structural-typological properties (cf. Bakker et al. 2011 for a recent attempt). For Thomason and Kaufman (1988), who maintain the strong position that “a language cannot have multiple ancestors in the course of normal transmission” (11), mixed-origin languages, including creoles, “cannot be classified genetically at all” (3). This position is reiterated in Thomason (2008: 254-257).<sup>3</sup>

Another type of languages that are problematic for the requirement that the genetic relatedness be based on the narrow premise of intergenerational transmission are koines. The term *koine* describes a contact variety developing between mutually intelligible speech forms, typically regional dialects. Kerswill (2002) distinguishes between regional koines, which serve as inter-dialectal lingua francas without replacing the contributing vernaculars; and immigrant koines, which arise in new geographical settlements or as a result of rapid urbanization. An example of the former type is the original Greek koine, a compromise dialect that developed on the basis of the speech of Athens; while examples of the latter type include the English dialect of Milton Keynes, a new town founded in 1967 (Kerswill and Williams 2000), and New Zealand English (Trudgill 2004). Research across different languages and sociolinguistic scenarios has demonstrated that immigrant koines cannot be equated with any of the varieties that were present in the contact environment. Instead, they display a mixture of traits from different regional and social dialects, roughly corresponding to the demographic ratios of the speakers of these dialects during the koine’s formative period. Among the many varieties that have been discussed in this connection are overseas varieties of English, Spanish, French, and Portuguese (Lipski 1994; Corne 1999; Penny 2000; Trudgill 2004).

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<sup>2</sup> Ansaldo’s (2009: 94) remarks on the “ideological nature of classificatory debates” are instructive in this context.

<sup>3</sup> Cf. Siegel (2007) for a thorough overview of the issue of the genetic affiliation of creoles and the underlying ideologies.

The creation of immigrant koines involves an interruption in the cross-generational transmission of features of the regional and social dialects present in the contact environment. Representative views from the specialist literature include Kerswill and Williams' (2000: 100) observation that "[i]n a new town, there is a catastrophic, creole-like discontinuity of dialect transmission . . ." and Kerswill and Trudgill's (2005) conclusions that "new-dialect formation involves a disturbance in the 'normal' cross-generational transmission of language" (201) and that "[n]ew-dialect formation is related, in particular, to creolisation . . . in that it implies a lack of generational continuity at the community level" (220). Despite the recognized lack of cross-generational transmission, immigrant koines continue to be categorized as dialects of their source languages (cf. related discussion in Siegel 2001: 183). This doubtless has to do with the fact that a different criterion of genetic relatedness is implicitly applied to these varieties. The criterion in question is the structural continuity of the koines with their source dialects. When discussing the possibility of detecting a prior history of interrupted transmission in a language, Thomason and Kaufman (1988: 11) remark that "a claim of genetic relationship entails systematic correspondences in all parts of the language because that is what results from normal transmission: what is transmitted is an entire language—that is, a complex set of interrelated lexical, phonological, morphosyntactic, and semantic structures". Since koines are necessarily structurally continuous with the source varieties, this structural continuity serves to obscure the fact that they do not result from "normal" cross-generational transmission. In reality, these varieties stem from the same processes that, in alternative contact situations, have produced creoles and lingua francas (Corne 1999: 219-234; Trudgill 2004: 11-23; Kerswill 2002: 695-698 and 2010: 244f; Kerswill and Trudgill 2005: 220; Noonan 2010: 58f).

What the language and dialect transmission situations surveyed above have in common is (re)creation, by adult speakers, of a new linguistic code, be it a lingua franca, a creole, or a koine. In each case, the new variety contains a novel combination of the linguistic features that were present in the contact environment. Trudgill (2004) describes the selection of phonological variants into New Zealand English as "a kind of supermarket of vocalic and consonantal variants" that the children of the immigrants "could pick and choose from and put together into new combinations" (125). Aboh and Ansaldo (2007) observe that "in most cases, new contact varieties only recombine a set of features that were already present in the F[eature] P[ool]" (45f). The specific outcome of contact is determined by the number and genetic-typological profile of the language varieties present in the contact environment as well as demographic ratios of the speakers. In the case of a koine, the pool of linguistic features is drawn from mutually intelligible, genetically related, and typologically similar varieties, and the outcome is inevitably a variety with the same typological profile as, and mutually intelligible with, the contributing vernaculars. This similarity should not obscure the fact that this variety does not descend from any of the participating vernaculars by way of cross-generational transmission; instead, it results from a metaphorical "disassembly" of the contributing varieties and its subsequent "reassembly", whose bulk is performed by children and grandchildren of the founding population in response to such characteristics of the features as their frequency, transparency, and salience. In the case of creoles and lingua francas, the pool of linguistic features is drawn from various dialects of the lexifier, L1 simplifications of it, L2 approximations to it, pre-existing contact varieties of it, and L2 approximations to the contact varieties (Siegel 1997,

Corne 1999). The specific outcome in such cases is determined by the number and typological profiles of the participating languages as well as the ratio of native to non-native speakers of the lexifier during the formative period (Holm 2004; Aboh and Ansaldo 2007: 43). Contact-induced features in the new vernaculars will reflect not only the native vernaculars of the adult learners (substrate influence) but also the effects of non-native L2 acquisition, such as regularization of morphology; and linguistic innovations, such as hybrid forms.

It should be emphasized that the concept of language transmission as a metaphorical “disassembly” of the input code and its subsequent “reassembly” by acquirers is not particular to L2 acquisition but applies to L1 acquisition as well (Mufwene 2000, 2009). As discussed by Ansaldo (2009: 99ff), children acquiring their L1 in modern monolingual societies are exposed to feature pools consisting of phonological variants as well as variation in various aspects of the grammar. In multilingual societies, the input is richer in that it consists of a number of languages, each with internal variation of its own. Just as in L2 acquisition, however, the task of the L1 learner is to reconstruct a system, or multiple systems, from the available feature pool, whether it is composed of a single or multiple languages. As observed by Mufwene (2009: 373), “[s]ystem-(re)construction is a process that applies as much to L1 as to L2 “acquisition””. Given that both L1 and L2 acquisition consist of similar processes of deconstruction and subsequent reconstruction of a linguistic code, the contact languages discussed in this section derive from the same processes of transmission as “normally” transmitted languages.

## ***2. Formation of contact varieties***

Processes underlying the formation of contact varieties have been investigated in particular detail in historical dialectology and creolistics. New dialects, otherwise known as immigrant koines, come into being after relocation to a new territory of speakers of diverse diatopic and diastratic varieties of the same language. The formation of selected koines has been described in detail and includes both partial and full-length studies of South African and other overseas varieties of Hindi (Mesthrie 1992, Siegel 1997), New Zealand English (Trudgill 2004), and Latin American Spanish (Penny 2000), among others. A number of the researchers, including Mufwene (2001), Siegel (1997, 2001), Corne (1999), Hinskens, Auer and Kerswill (2005), and Kerswill and Trudgill (2005), have pointed out that processes underlying the formation of koines are the same as those that operate in the formation of creoles and/or lingua francas. Mufwene (2001) observes that “basically the same mechanisms were involved in the restructuring processes which produced creoles as in those which generated koinés” (4) and that “the diachronic difference between koinés, creoles, and other new varieties lies not in the restructuring process but in the numbers and kinds of languages that came in contact, and sadly also in the ethnic identities of their typical speakers” (6). Siegel (2001: 184) likewise points out that “many of the same processes are involved in the creation of different language contact varieties”. The processes in question are outlined below, based on discussion in Trudgill (2004), Kerswill (2002, 2010), Kerswill and Trudgill (2005), Penny (2000), Mufwene (2001, 2008), Siegel (1997 et seq.), and Aboh and Ansaldo (2007).

1) The formation of a contact variety begins with mixing, or the creation of a pool of linguistic features (= feature pool) drawn from the language varieties present in the contact environment. Aboh and Ansaldo (2007: 44) define the feature pool as “the total set of linguistic variables available to speakers in a contact environment in which a process of competition, selection and exaptation takes place”. In contact situations involving different dialects of the same language, the mixture consists of different regional and social variants, in proportions that reflect the demographic ratios of the speakers of each variety. In contact situations leading to the formation of creoles and lingua francas, the composition of the feature pool is more varied. As summarized by Siegel (1997: 132), the feature pool leading to the formation of a creole includes various regional and social varieties of the lexifier, various versions of foreigner talk, pre-existing pidgins and creoles with the same lexifier, and various L2 versions of the lexifier and pre-existing pidgins and creoles. Consequently, in the pre-creole contact environment the pool of available features is composed of a range of native and non-native versions of the lexifier and lexifier-based contact varieties, in proportions reflecting the ratios of native to non-native users. Since the non-native varieties include features transferred from the substrate languages, the latter become part of the available competition pool. If the substrate languages are typologically similar, their numeric superiority results in a high proportion of substrate-derived features in the competition pool, insuring their selection into the emergent creole. A high proportion of substrate-derived features selected into the creole is responsible for its typological distance from its lexifier (Siegel 1997: 136f; Aboh and Ansaldo 2007: 44).

2) The mixing stage is followed by leveling, or “the loss of demographically minority variants” (Trudgill 2004: 84). In new-dialect formation, the features that get leveled out are those that are the most stereotypable (Kerswill and Trudgill 2005: 198). The features that get selected reflect the demographic ratios in the contact environment, as well as their relative markedness, perceptual salience, and semantic transparency (Trudgill 2004: 84f; Kerswill and Trudgill 2005: 198; Aboh and Ansaldo 2007: 44ff; Mufwene 2001). The micro-mechanism responsible for the leveling out of differences is speaker-to-speaker accommodation in the immediate linguistic interaction, and long-term accommodation at the community level. A number of the researchers emphasize the role of locally-born children in the leveling process (Siegel 2007b and 1997: 132, 136; Trudgill 2004; Kerswill and Trudgill 2005: 198).

3) The leveling stage is followed by simplification, or elimination of marked variants in favor of unmarked ones. In phonology, this may include elimination of marked phonemes, and in morphology, that of marked patterns as well as an increase in regularity. In all contact varieties, simplification is driven by constraints on adult second language acquisition.

4) The formation of contact varieties also includes the development of hybrid forms, labeled inter-dialect forms in the case of koinés (Trudgill 2004). These are novel forms that arise out of interaction between forms present in the mixture. For example, Aboh and Ansaldo (2007: 48f) argue that the noun phrase in Surinamese creoles combines the semantic properties of their substrate Gbe with the syntax of their superstrate English.

5) Any variant forms from the original mixture that are left over after leveling are reallocated, or pressed into function as new stylistic or social class markers. In this connection, it is interesting to mention the opposing points of view regarding the origin of creole continua, or range of grammatical/stylistic variants from the most basilectal (= farthest from the lexifier) to the most acrolectal (= closest to the lexifier). While some creolists believe that this situation has developed recently, in response to a greater degree of contact between creoles and their lexifiers, the alternative hypothesis holds that continua of variation were present in creoles from the very beginning (Siegel 1997: 136; 2008: 237, 256). If the latter hypothesis is correct, then the assignment of a sociolinguistic dimension to different degrees of distance from the lexifier may qualify as a large-scale example of reallocation.

6) The stage labeled *focusing* describes the sociolinguistic process whereby the new variety is stabilized and acquires its own norms. An important role at this stage is assumed by the formation of a local/ethnic identity, signaled in part via language.

Trudgill (2004) argues, with respect to the formation of immigrant koines, that the above processes take place over the first three generations of speakers, beginning with the adult migrants themselves. The following table, slightly adapted from Kerswill and Trudgill (2005: 200), summarizes these stages.

Table 1. Stages in the formation of an immigrant koine

Stage	Generation	Speakers involved	Linguistic processes and characteristics
I	First	Adult migrants	A mixture of the original dialects; rudimentary leveling
II	Second	First native-born speakers	Extreme inter- and intra-speaker variability; further leveling
III	Third	Subsequent generations	Leveling, reallocation, focusing

As indicated in the table, there is great inter- and intra-speaker variation during Stages I and particularly II. Trudgill (2004) demonstrates this with respect to the pronunciation of the first native-born generation of New Zealanders: although the individual phones can be traced to the various parts of the British Isles, their combinations in the speech of individual speakers are idiosyncratic and do not correspond to any specific British dialect. Instead, it looks as if the speakers had picked and combined variants available in the mixture, to which they had been exposed growing up, in highly individual ways (Kerswill and Trudgill 2005: 209f). Extreme variability is also characteristic of creoles at their earliest stages, as evidenced, e.g., by travelers' accounts (Siegel 1997: 136). At Stage III, speech becomes homogeneous due to leveling and focusing; at this stage, the number of available variants is reduced to one, with the balance reallocated to new stylistic or sociolinguistic functions.



Recent research indicates that different types of contact varieties are comparable not only in terms of their developmental stages but also in how long it takes for the new variety to emerge. Trudgill (2004: 23) estimates that the formation of immigrant koines takes approximately fifty years, or three generations of speakers, beginning with the original adult migrants. He shows that the formation of Southern Hemisphere Englishes was accomplished within this window of time (Trudgill 2004: 23ff; cf. also Moore 2008). Similar estimates are provided by researchers working on other contact varieties: Owens (1997:135f) estimates that Sudanese pidgin/creole Arabic was formed and stabilized between 1854 and 1888, Clements (2009: 56) suggests that Korlai and Daman Creole Portuguese developed within two generations, Kouwenberg (2009: 344) estimates that the formative period of Jamaican Creole fell on the final quarter of the seventeenth century, Shappeck (2011: 150) reports on Peter Muysken's estimate that Media Lengua developed over one or two generations, and Bakker (1997) suggests that Michif was formed in under forty years. Studies surveyed by Lefebvre (2009: 109f) propose comparable figures.

It is likely that creoles and koines are not exceptional with respect to the speed of their formation and that, on the contrary, the formation of new language varieties routinely takes place rapidly; that it is, in fact, the norm in language evolution. Thurston (1987) argues that all new languages are formed in a short space of time and that the presumed gradualism of linguistic change is hypothesized rather than documented; similar points are also made by Vårvaro (1991), Dixon (1997: 3), and Trudgill (2011: 51ff), among others. Thurston's remarks are worth quoting in full since he endorses the view that languages that are called here *lingua francas*, but for whose formative periods we lack documentation, – languages like English and French – are the result of rapid development:

To speak of Latin gradually becoming French or Saxon gradually becoming English is a failure to recognise that the crucial data supporting the gradualism of the change do not exist – the missing links are all reconstructions. The hypothesised stages intermediary between Saxon and English or Latin and French are not documented, nor is such evidence likely to be found. In each case, the transition took place rapidly – for English, it took fewer than 200 years maximum. In each case, during the transition, the forms that would eventually become English or French would be considered bastardised languages, poor reproductions of the originals, unworthy of the expense of parchment and ink to record them. (Thurston 1987: 40)

If the speed of the formation of koines, creoles, and *lingua francas* is not exceptional among the world languages, then what about their allegedly discontinuous mode of formation? This issue will be addressed in the next section, following a survey of some of the additional areas that have proved challenging for the family-tree approach to genetic classification.

### ***3. Thurston (1987) and Dixon (1997)***

In the words of Bloomfield (1933: 318), “[t]he comparative method . . . would work accurately for absolutely uniform speech-communities and sudden, sharp cleavages” (cited after Labov 2007: 347). The family-tree model is known to be an idealization, and a number of other areas, in addition to the varieties discussed in the preceding sections, have been identified as problematic for it. What they all have in common are the effects of

language contact, which may lead to blurring of the borders between the nodes of family-tree diagrams. These additional problematic areas involve the consequences of childhood bi- and multilingualism, or simultaneous L1 acquisition and use of more than one linguistic code, manifested as dialect continua or areal convergence phenomena. Areal convergence can be problematic for genetic classification because unrelated languages can develop common structures through geographical proximity, while dialect continua present similar cases of convergence across genetically related varieties. The latter are problematic for the family-tree model because it presupposes a clean split between the branches; however, communication is rarely absent after the separation, leading to exchange of linguistic material subsequent to the (hypothesized) split. As a consequence, the division of dialect chains into “languages” becomes linguistically arbitrary and derives from a combination of sociopolitical factors, speaker judgments – known to be based more on ethnic, cultural, and/or religious than strictly linguistic clues – and the existence of written standards (Chambers and Trudgill 1998).<sup>4</sup>

Recent overviews of areas that are problematic for genetic classification also mention mixed languages (Bossong 2009, Noonan 2010). Unlike creoles, mixed languages arise in bilingual settings in which the speakers are equally fluent in the two codes. The outcomes of language intertwining can range from a combination of Language 1 grammatical and Language 2 content morphemes, as in *Media Lengua*; to that of Language 1 noun morphology, Language 2 verb morphology, and dual-source vocabulary, as in *Copper Island Aleut*; and to that of Language 1 morphology and Language 2 syntactic structures, as in *Central Asian Mixed Arabic* (Golovko 1994; Muysken 1997; Owens 2001). The diversity of outcomes and the available documentation on the early stages of mixed languages have led some researchers to suggest that these codes are created by their speakers in a deliberate attempt to assert their distinct identity (Golovko 1994: 117; Dixon 1997: 11ff; Bakker 1997: 204ff; Mous 2003: 92f). If the assessment of mixed languages as resulting from deliberate language engineering is correct, they may indeed fall outside the scope of genetic classification, joining other artificially created languages. An alternative view of their origin also exists, however, one that brings them well in line with other well-documented outcomes of language contact. Shappeck (2011), for instance, questions the assumption that *Media Lengua* was formed through wholesale relexification of Quechua with Spanish vocabulary, arguing instead that this language is the outcome of “well-precedented processes of lexical borrowing and code-mixing that are cross-linguistically found in language contact” (150). The origin of mixed languages as a group clearly warrants a second look, with a view to clarifying their genetic affiliation (cf. Mous 2003: 87-93).

Despite their differences, what creoles, koines, *lingua francas*, mixed languages, dialect continua, and areally converged languages have in common is the absence of a clean vertical transmission of linguistic material in their historical evolution. Each of these language types represents a combination of the vertical and horizontal ways of transmission of linguistic structures. In the case of areally converged languages and dialect continua, the source of the non-vertical structures are the second languages/ dialects of the bilingual/bidialectal individuals who are responsible for the introduction of the changes. In the case of immigrant koines, the horizontal sources of linguistic structures include

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<sup>4</sup> Cf. a discussion of dialect continua in relation to Iberian Romance by Penny (2000: 20-28), who emphasizes the inability of the family-tree model to capture the relationships among the varieties.

competing dialectal and sociolectal variants as well as innovative forms arising out of interaction between the contributing dialects. In the case of creoles and lingua francas, the horizontal sources of linguistic structures include varying degrees of interference from the native languages of the learners, simplification of the more opaque aspects of the lexifiers' grammars, and creative recombination of the linguistic structures available in the contact environment.

Although the understanding that the vertical and horizontal pathways of transmission of linguistic traits are closely linked is common knowledge in genetic linguistics, there is as yet no single formal model, comparable in generality to that of the family tree, that would account for the link satisfactorily. Current research literature does, however, contain various elements that, in combination, might potentially provide the foundation for uniting the family-tree and contact-linguistic phenomena into a single model. The minimal requirement for such a model is that it combine the vertical (cross-generational) transmission of linguistic features with two horizontal transmission scenarios, one involving childhood bi- and multilingualism and the other, adult second language acquisition. There exists an attempt to integrate contact phenomena of the first type with the family-tree model in the well-known work by Dixon (1997). Non-native L2 acquisition is integrated with the family-tree model in the much less well known work by Thurston (1987). Dixon's (1997) and Thurston's (1987) approaches were both inspired by the punctuated equilibrium model in biology, and will be surveyed together.

Dixon's (1997) model is built around the hypothesis that the world's linguistic history may be divided into relatively long periods of equilibrium, when languages coexist harmoniously, and relatively short periods of punctuation, when some external event triggers multiple language splits. New languages arise during periods of punctuation, which can be appropriately modeled by means of the family tree diagram. During periods of equilibrium, languages borrow features from one another and converge areally and typologically. The overall effect of the equilibrium stage is that of gradually blurring the differences introduced at the punctuation stage. Dixon hypothesizes that punctuation may be caused by cataclysmic natural events, such as volcanic eruptions; material innovations, such as the invention of a new type of weapon; or cultural innovations, such as the development of writing or an aggressive religion. In geographic terms, he distinguishes between punctuations associated with expansion into a new territory, which may be uninhabited or previously occupied; and punctuations within the same geographical area. The major showpiece for his model is the linguistic situation in Australia, which has provided both the original impetus and the main testing ground for the theory. According to Dixon, the Australian languages of today derive from a single punctuation event in the past that had split Proto-Australian into its daughter languages. For most of the continent's inhabited history of approximately 50,000 years, these have been in a state of equilibrium.

Unlike Dixon's (1997) book, which is devoted to delineating a theoretical model, Thurston's (1987) views on language evolution are embedded within a discussion of the linguistic history of a specific group of languages – the languages of North-Western New Britain – and are consequently scattered throughout that publication. Also unlike Dixon, who is interested in the global picture of language evolution, Thurston focuses his discussion on the alternating periods of change in individual languages. His principal insights include his emphasis on the sociolinguistic triggers of language change and

recognition of the pivotal role of non-native adult L2 acquisition in the formation of new languages.

Thurston (1987) suggests that the history of each language may be divided into a succession of periods of rapid and gradual change, with each type of change correlated with the language's sociolinguistic function (1). Languages that are used for communication within one's own group – Thurston names this function *esoteric* – gradually become structurally more complex and opaque to the outsiders; this type of change is propelled by “linguistic emblematicity” (37). During such periods of gradual change, languages are transmitted cross-generationally. Languages that are used for communication with outsiders as *lingua franca* – Thurston names this function *exoteric* – are structurally simplified and become easier for second-language learners to analyze. This type of change occurs rapidly and involves non-generational transmission (4, 32, 36ff, 94). One of the most appealing aspects of Thurston's theory is his proposal regarding the mechanism by which new languages come into being. He suggests that new languages develop when “a population of adults creates a *lingua franca* using lexical forms drawn from another language” (95). Although in the quotes below Thurston refers to this process as pidginization, he uses this term as a general label for non-native L2 acquisition:

Here, I would like to suggest that ultimately, all languages owe their earliest forms to processes such as pidginisation, and that after generations of use among intimates, these languages acquire the complexity that obscures their former origins. (Thurston 1987: 4)

The evidence argues strongly in favour of the hypothesis that all languages have abrupt beginnings as pidgins; far from being a freak occurrence in erratic social circumstances, pidginisation is the normal process through which new languages emerge. (Thurston 1987: 35-36)

In Thurston's view, regular phonological correspondences between the mother and daughter languages are explainable by the fact that the forms of the lexifier (in genetic terms, mother tongue) “are mapped in a quite regular manner onto the phonology” of the substrate languages (92). While the lexicon of the newly formed language is inherited from the lexifier, its phonology, syntax, and semantics are derived from the substrate languages, or mother tongues of the L2 acquirers (98). Initially, the newly formed language is structurally simpler than its lexifier, as befits its function as a *lingua franca*. Subsequent generations of users gradually expand its grammar and lexicon, obscuring the language's origin as a contact variety (95f).

Dixon's and Thurston's models of language change both rely on the hypothesis that languages go through alternating periods of rapid and gradual change. The models differ in the types of language-contact phenomena that they integrate with the family-tree model. Dixon (1997) finds a place in genetic linguistics for areal diffusion, and thus accommodates the types of changes that occur due to simultaneous L1 acquisition of more than one language; while Thurston (1987) accommodates non-native L2 acquisition. Thurston's proposal for the mechanism of new-language formation is in marked contrast with the traditional view that new languages evolve gradually through population splits and slow accumulation of internal changes by each group. Thurston's proposals are also

more radical in the way they shift the emphasis from the language-internal to the contact-induced in language change. By combining the insights of Thurston (1987) and Dixon (1997), it is possible to begin building a model of *contact-genetic linguistics*, a model of language evolution in which the vertical and horizontal pathways of transfer of linguistic structures are complementary rather than contradictory. Such a model would need to incorporate other recent developments, which improve our understanding of the dynamics of language change, such as the feature-pool approach to the genesis of contact varieties and related theories of new-dialect formation (Siegel 1997; Mufwene 2001; Trudgill 2004; Kerswill and Trudgill 2005); usage-based and emergentist approaches to language evolution (Bybee 2006; Ansaldo 2009; O'Grady 2010); Holm's model of partial restructuring (Holm 2004); the role of non-native L2 acquisition in language change (Klein and Perdue 1997; Plag 2008a et seq.); the connection between linguistic and social typology (Milroy 1980; Milroy and Milroy 1985; Milroy 1993; Kusters 2003; Dahl 2004; Trudgill 2011); and a greater overall recognition of the explanatory role of contact-induced change in language evolution than had been assumed in the past (Mufwene 1997 et seq.). In combination with Dixon's (1997) and Thurston's (1987) theories, these developments are able to provide a solid basis for a successful integration of contact and genetic linguistics into a single theoretical paradigm.

#### ***4. Toward contact-genetic linguistics***

An important premise of both Thurston's (1987) and Dixon's (1997) approaches is alternation, in the history of a language, between periods of abrupt and gradual change. Recent literature, particularly in the areas of sociolinguistic typology, language complexity, and non-native L2 acquisition suggests that each of these periods is likely to be correlated with a specific type of societal structure, language transmission, types of changes, sources of new linguistic structures, agents of change and its outcomes. Some of these correlations are discussed in the following subsections.

##### *4.1 Types of language transmission*

Recent research indicates that alternations between periods of abrupt and gradual change are likely to be correlated with the prevalence of one of the two modes of language transmission: cross-generational transmission to young L1 learners during periods of gradual change, and non-generational transmission to adult L2 learners during periods of rapid change. The word "prevalence" is operative here: although each period likely includes both types of language transmission, it is the dominant type that determines both the pace and the type of change. Although Dixon's (1997) model does not address the language transmission aspect, his hypothesized alternation between periods of punctuation (new-language formation) and equilibrium (gradual compenetration among neighboring languages) may be correlated with an alternation in the two modes of languages transmission.

Cross-generational transmission is the dominant mode of language transmission at Dixon's equilibrium stage. The gradual compenetration among the neighboring languages takes place through bi- and multilingual individuals, who have acquired their languages as children, and this happens during stable periods of predominantly generational transmission. The social stability prevailing at this stage encourages maintenance of the existing linguistic norms, resulting in a slow overall rate of change. This state of affairs

contrasts sharply with the punctuation stage, at which the dominant mode of transmission is non-generational. The breakdown of social structures in the wake of the event that sets off the punctuation stage brings about population movements and the concomitant breakdown of linguistic and other social norms. This results in the formation of koines, in the case of contact among mutually intelligible varieties; and lingua francas or creoles, in the case of contact among unrelated languages, with the outcome determined by demographic factors. The rate of change at this stage is accelerated, with the formation and focusing of new varieties taking place within approximately three generations. As discussed previously, this estimate comes from the work on the formation of a variety of contact languages. The comparable speed of development between immigrant koines and creoles also helps remove the label of exceptionalism from the latter, which have sometimes been described as languages that have evolved at an unusually fast pace. Rather than being exceptional, creoles are probably no more than average in this respect; in fact, it is likely that the speed of creole formation is typical of the speed at which all new languages are formed; creoles appear unusual only because this is the first time in human history that the formation of so many new languages can be scientifically observed so close to their formative stages. As stressed by Thurston and other researchers, once creoles are subjected to gradual cumulative changes involving grammaticalization and other effects of “ritualization”, their origin as contact varieties becomes obscured.

The above discussion of the two major types of language transmission helps highlight the differing roles of children and adults, or L1 and L2 language learners, in language change. Since new languages are formed during periods of abrupt change, which are dominated by non-generational transmission to adult L2 acquirers, it follows that the trail-blazing task of creating new languages and setting down their initial norms falls to adult speakers. Thurston (1987) similarly observes, on the one hand, that “[n]ew languages emerge when a population of adults has to learn a foreign language” (36) and on the other, “I have yet to be convinced that children play any significant role in major processes of language change” (37-38). The role of adults in new-language formation is also confirmed, e.g., by Singler’s (1995) finding that the radicalness of a creole – its typological distance from its lexifier – is in inverse proportion to the number of locally born children (220). The formation of new language varieties by adults may occur in response to pressure to begin communication quickly, aided by the need to establish a separate group identity.

Subsequent generations, especially the first two that acquire the newly created language as their native tongue, are instrumental in crystallizing its structure. Trudgill (2004) observes, with reference to immigrant koines: “In this type of colonial situation . . . where there is a multiplicity of ‘ways of talking’, we can suppose that most of the complicated work leading to the eventual establishment of a new, single norm will be carried out by children under the age of eight” (28). Dahl (2004: 287) also remarks on the “active role for children in maturation processes”. While children perform the important task of stabilizing the contact variety they acquire as their mother tongue, they do not appear to be the creative force behind that variety’s coming into being in the first place, as assumed by some theorists (cf. Bickerton 1981, 1984 and literature surveyed by Slobin 2002). A careful re-examination of the available demographic and socio-historical data suggests, for example, that the input to Hawai’i Creole was not a rudimentary pidgin, as assumed previously, but an already stable and developed pidgin spoken by the first locally born generation. Siegel (2007a) notes that the stabilized pidgin already contained some of

the features identified by Bickerton as having come into the creole as a result of the bioprogram (55-57). Sankoff and Laberge (1973) find that the first native speaker users of Tok Pisin merely automated the use of structures that were already present in the non-native variety. Slobin (2002) assembles additional evidence indicating that children acquiring languages that were previously used non-natively use pre-existing structures with greater fluidity and frequency, but without being the innovators themselves. The combined evidence from studies on nativization, first language acquisition, and spread of linguistic innovations suggests that the role of children during periods of rapid change is not in the formation of new languages but rather in automating the structural routines created by adult speakers. During periods of gradual change, however, the relative roles of children and adults are reversed, with most of the contact-induced changes being due to childhood bi- and multilingualism.

It should be stressed again that the division into periods of abrupt and gradual change does not mean that the type of language transmission is exclusively to either L1 or L2 speakers. Rather, it suggests that one or the other mode of transmission predominates, accounting for the general direction of change at this stage. It is easy to imagine that there is some L1 learning of the language during periods of abrupt change, just as there is some L2 learning during periods of gradual change; what determines the development of the language at either stage is the predominance of one or the other mode of transmission.

#### *4.2 Language simplification and complexification*

The differing agency of change during the periods of abrupt and gradual change – L2 versus L1 learners – correlates with the types of changes that predominate during each period, and with the sources of new structures. During periods of abrupt change, the changes are triggered by adult L2 acquisition and include transfer features from the learners' first languages (substrate influence) and features associated with untutored L2 acquisition (restructuring/simplification). As has been amply discussed in the literature, adults are not nearly as good as children at acquiring the structural subtleties of a new language, and when under pressure to communicate, produce a simplified and L1-influenced version of the target (Klein and Perdue 1997). In this context, simplification consists of restructuring of the lexifier, which becomes apparent when the lexifier is compared with the resulting contact variety. Trudgill (2011: 21-26, 62) identifies several components to the simplification process: regularization or irregularities, an increase in lexical and morphological transparency, loss of redundancy, loss of morphological categories. Both the substrate transfer features and the simplification processes are amply documented in the formation of koines, creoles, and lingua francas.

Creoles and lingua francas arise in contact environments involving two or more languages. The difference in the outcome consists in the amount of restructuring of, and typological distance from, the lexifier, both of which are more substantial in the case of a creole and more modest in the case of a lingua franca. The degree of restructuring depends on the number of languages in the contact environment and the demographic ratios of their speakers. The first factor is addressed by Owens (1997), when he suggests that, following the Arabic-Islamic expansion, in areas of contact with a small number of indigenous languages (Aramaic/Greek, Coptic, Berber) there developed modern colloquial Arabic whereas in areas with a high degree of linguistic heterogeneity there developed Arabic

pidgins and creoles (126f). The second factor – demographic ratios – is examined by Holm (2004).

Holm (2004) is a comparative study of five overseas varieties of European languages that are located, in terms of their degree of restructuring, half-way between overseas dialects of these languages and creoles: African American English, Brazilian Portuguese, Nonstandard Caribbean Spanish, Afrikaans, and Vernacular Lects of Réunionnais French. Holm uses the label “partially restructured vernaculars” for these varieties, and he proposes a theoretical model for partial restructuring which crucially relies on the demographic ratio between native and non-native speakers of the target variety during the formative first century of the language’s history:

... the ratio between native and non-native speakers of the source language during the first century of a new language’s development is indeed the most important social factor in determining the structure of that language. Where native speakers made up a strong majority in the new society, unrestructured overseas varieties developed. Where non-native speakers made up a strong majority, fully restructured creole languages developed. (...) The partial restructuring of languages occurred in new societies where neither group – neither native nor non-native speakers, which in the beginning meant neither Europeans nor non-Europeans – were numerous enough completely to overwhelm the other group culturally. (Holm 2004: 136)

Although Holm does not discuss precise figures for the ratios he proposes, some indications to this effect can be found in related literature. For example, Bickerton (1981: 4) suggests that the substrate population needs to be at least 80% for pidginization to take place. Owens (1997: 136) estimates that Sudanese pidgin/creole Arabic was formed within a social group in which native speakers of Arabic constituted between 10-25% of the population. Trudgill (2011: 57f) suggests that non-native features can become part of the native variety when the proportion of the non-native to native speakers approaches 50%.<sup>5</sup>

Holm’s (2004) model establishes a difference of degree rather than kind between immigrant koines (his “unrestructured overseas varieties”), lingua francas (his “partially restructured vernaculars”), and creoles. All three cases involve a break in the strictly generational transmission of the transplanted language, and all three result in the formation of a new language variety. Of the three, koines are typologically the closest to the source language, creoles the farthest, and lingua francas are located between the two extremes.

The degrees of restructuring accommodated by Holm’s (2004) model are strongly reminiscent of the well-known fact that established language families are typically composed of a mixture of conservative and innovating languages; this observation also applies to dialects within a language (Milroy 1993: 227f). While conservative languages remain more faithful to the reconstructed source language, innovating languages depart from it to a greater or lesser extent. It may even be possible to arrange the languages on a cline from the most conservative (= the least restructured with respect to the source language) to the most innovating (= the most restructured with respect to the source language). For example, within the Scandinavian subfamily of Germanic, there exists a typological split between the insular languages Icelandic and Faroese, which are more

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<sup>5</sup> Parkvall (2000) discusses additional factors that may influence the degree of restructuring, such as the motivation to learn the target language.



conservative/closer to the ancestral Old Norse, and the more innovating mainland languages Danish, Swedish, and Norwegian (Trudgill 1992). Within Indo-European as a whole, languages like Latin, Russian, Icelandic, and Lithuanian are conservative in being highly inflected and having a relatively free word order, both characteristics also being part of the reconstructed Proto-Indo-European. By contrast, languages like French, English, and Norwegian are more innovating in being analytical and in their reliance on word order and prepositions to convey grammatical relations (Lyovin 1997: 53f). Within the Arabic linguistic complex, Kusters (2003) arranges Najdi, Moroccan, and Nubi on a cline from the most conservative variety – Najdi – to partially restructured Moroccan and to fully restructured Nubi. Such examples can be easily multiplied (Kusters 2003; McWhorter 2007; Trudgill 2011). In each of these cases, the amount of innovation may be directly correlated with the amount of non-native acquisition that the language has had in the course of its history. For example, Iceland and the Faroe Islands have had less contact than continental Scandinavia, while Moroccan Arabic has undergone significantly more transmission to L2 speakers than Najdi, but less so than Nubi. Factors other than non-native acquisition, such as the languages' proximity to the source (proto-language) on the absolute time scale, do not appear to play a role. For example, Arabic, whose earliest recorded sources postdate those of Akkadian by two millennia, displays a more conservative phonological system than Akkadian; this difference appears to correlate with the differing sociolinguistic functions of the two languages (Owens 2006: 10). Taking Holm's (2004) approach as a precedent for modeling such situations, it may be suggested that, in general, the reason for the existence of a conservatism/innovation cline within established language families is a demographic one. A conservative daughter language results from the absence of non-native acquisition and is handed down through the strictly generational transmission envisaged by Thomason and Kaufman (1988). Moderately innovating languages, characterized by a modest amount of restructuring of the prototype, result from moderate amounts of L2 acquisition, roughly corresponding to Holm's concept of a partially restructured vernacular. Highly innovating languages result from situations in which transmission to non-native acquirers outweighs that to L1 learners. This distinction can be diagrammed as shown in Figure 1, where the lower nodes of the tree are not precise cut-off points but gradations in a continuum. The quantitative approach makes it possible not only to accommodate the genealogy of creoles – a long-standing issue in historical linguistics – but also to begin a more precise characterization of the impressionistic difference between conservative and innovating varieties. It also allows us to reinterpret terms like “creole” and “lingua franca” as degrees of typological distance from the proto-language.

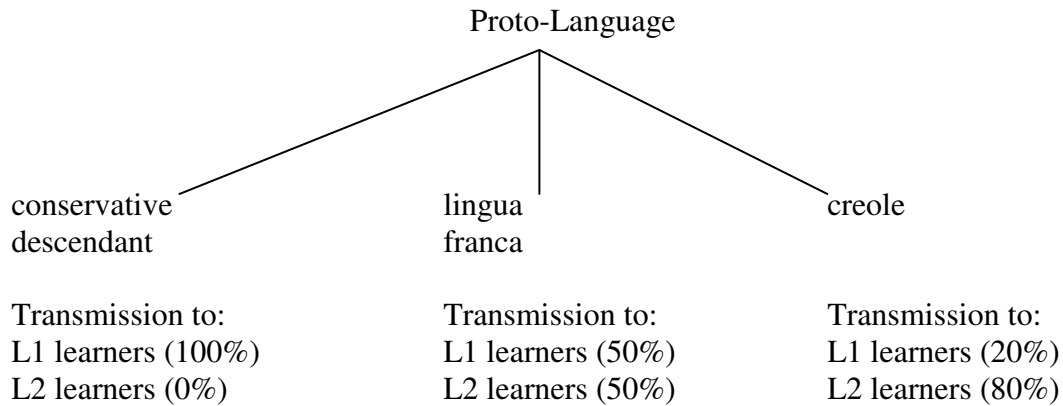


Figure 1. Language transmission in relation to demographic ratios

Following the period of simplification, the contact variety is subject to elaboration by subsequent generations of L1 users. An important overall effect of this stage is structural complexification of the language. Trudgill (2011: 62) provides a working definition of complexification as a cluster of processes opposite to those that lead to simplification, namely, addition of morphological categories, irregularization, and an increase in redundancy and opacity. This task is accomplished by children, who are good at automating language use at all structural levels and at accelerating grammaticalization processes. Thus, Sankoff and Laberge (1973) observe that it was children acquiring Tok Pisin as their mother tongue who made the future marker *bai*, from English *by and by*, obligatory and converted it into an inflectional prefix. In non-native Tok Pisin, *bai* was used as an optional preverbal particle.<sup>6</sup> In high-contact situations, complexity is also introduced through simultaneous L1 acquisition of more than one language. This type of complexity is due to additive borrowing, also due to childhood bi- and multilinguals, and is responsible for the formation of linguistic areas (Trudgill 2011: 34, 42, 63). Whether they occur in isolated or in high-contact communities, the complexification processes appear to be more gradual than the simplification phenomena.

Before concluding this section, a brief note on using the type of transmission, as opposed to any other feature, as the main diagnostic for distinguishing between the periods of simplification and complexification. It has been suggested in the literature that differences in rates of change can be interpreted in terms of differences between low-contact versus high-contact varieties, coupled with the communities' geographical isolation versus location in more central areas. For instance, the differential rates of change between Insular Scandinavian (Icelandic and Faroese) and Mainland Scandinavian (Swedish, Danish, and Norwegian) have been correlated with the relative isolation and lack of contact in the former varieties versus a more central location and greater extent of contact in the latter (cf. discussion in Trudgill 2011: 7-9). Here, it is suggested that the prevalence of L1 or L2 mode of transmission is a better predictor of the rate of linguistic change than the amount of contact per se. Even though geographically isolated low-contact communities are generally correlated with gradual change, only high-contact communities with predominant L2 acquisition change abruptly, whereas high-contact communities with

<sup>6</sup> More examples of complexification due to language-internal developments are assembled in Trudgill (2011: 73ff).

predominant L1 acquisition change more gradually. Put differently, it is not the amount of contact that counts, but its type – L2 learning by adult speakers versus simultaneous L1 acquisition of multiple languages by children – and this is better expressed as a difference in the predominant mode of transmission.

#### *4.3 Transmission and community*

The periods of abrupt and gradual change in the language's history each appear to be correlated with a particular type of societal structure, and possibly also the community size.<sup>7</sup> At the stage correlated with gradual change, the community is small, stable, and closed, with tightly knit and multiplex social networks (esoteric community in Table 2 below). The event that ushers in the period of abrupt change results in the breakdown of this structure and creation of a different type of society, one characterized by instability, greater openness, larger size, and relatively loose and uniplex personal networks (exoteric community in Table 2). The two types of communities also differ in their prevalent modes of language transmission. In esoteric communities, generational transmission of language predominates, correlating with maintenance or accretion of linguistic complexity, explainable by the ability of such communities to maintain norms of all sorts, including norms pertaining to linguistic usage, as well as by large amounts of shared information. The maintenance or increase in complexity is also encouraged by the symbolic value of language as a badge of identity. Exoteric communities admit of language transmission to large numbers of adult non-native speakers. This type of society is correlated with a loosening of personal networks and breakdown of linguistic norms, explainable by the inability of a society in transition to enforce societal norms, including linguistic norms. The consequence of language learning by large numbers of non-native speakers is a reduction in linguistic complexity. It has also been suggested that the second type of society requires a more explicit language due to the small amount of shared information (cf., in particular, Trudgill 2011).

It is likely that it is precisely the breakdown of social norms in the aftermath of a social upheaval that is responsible for the creation of new languages. New languages may be formed by social groups that are perceived by outsiders or the rest of the society, and also perceive themselves, as culturally, ethnically, and/or socioeconomically distinct. The connection between the formation of new languages and linguistic identity has been demonstrated, e.g., for mixed languages and creoles. Owens summarizes this connection as follows:

The reason for the emergence and stabilization of Sudanic p/c Arabic is to be sought in the crystallization of a class of southerners who no longer belonged to indigenous southern groups, but who were also not part of the ruling northern elite. Parallels with the early development of the Atlantic creoles on the West African coast (Hancock 1986) are important, perhaps crucial. In both places the emergence of a stable p/c coincided with the formation of a social class that stood between an indigenous population and a dominant class. On the West African coast these were the creoles, who had a position between the whites and the African majority. In the 19<sup>th</sup>-century southern Sudan the new class comprised the soldiers of the traders and the Egyptian

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<sup>7</sup> The following summary is based on a combination of sources, particularly Milroy and Milroy (1985), Milroy (1993), Thurston (1987), Kusters (2003), and Trudgill (2011).

government who had a station between the northern Arabs and Nile Nubians, on the one hand, and the surrounding African groups on the other. What I would hypothesize, then, is that for both the creoles and the southern Sudanese soldiers, the p/c was an expression of social class. (Owens 1997: 144)

It is possible, therefore, that social instability is, in fact, not only a catalyst but also a necessary prerequisite for the formation of new languages.

The parameters governing the evolution of a language may be summarized as shown in Table 2. Only the last row in the table reflects the “normal” type of transmission, as embodied in the quotes at the beginning of this paper.

Table 2. Stages in language evolution

<i>Rate of change</i>	<i>Type of community</i>	<i>Predominant type of language transmission</i>	<i>Predominant processes of change</i>	<i>Predominant causes of change</i>	<i>Sources of new features</i>	<i>Outcomes</i>
Abrupt change	Exoteric; high-contact	Transmission to L2 learners	Simplification	- L2 transfer - Non-native acquisition	- Substrate language(s) - Outcomes of L2 learning	New languages
Gradual change	Esoteric; high-contact	Transmission to L1 learners	Complexification	L1 acquisition of more than one language	Neighboring languages	Linguistic areas
Gradual change	Esoteric; low-contact	Transmission to L1 learners	Complexification	L1 acquisition	Automation by L1 learners	

### 5. Summary and outlook

It has often been observed that the dominant model of genealogical evolution, as reflected in current linguistic taxonomies, does not give sufficient weight to language-contact phenomena. Focusing, as it does, on the vertical transmission of linguistic traits, and placing the greatest value on language-internal explanations,<sup>8</sup> the family-tree model of genetic descent has the shortcoming of privileging one pathway of linguistic evolution to the exclusion of other pathways. Although the conceptual clarity of the family-tree model will insure its continued use as a handy classificatory tool, there is also a need for a more comprehensive model of language descent, which would correlate the structural evolution of languages with the social life of their speakers, and in which the emphasis would be shifted from a mere cataloguing of changes to a study of their causes. Such a model should be able to accommodate the differing rates, types, and outcomes of language change in relation to the societal structure, and it should also incorporate the input of language contact by allowing for a scalar approach to the concept of genetic relatedness.

<sup>8</sup> Cf. Ansaldo (2009: 95): “The field of traditional historical linguistics tends to focus on the mechanisms underlying internal change – i.e. changes that are believed to occur within the system by themselves without any human, social, or historical agency required in the description . . . based on the assumption that these can be isolated from a messy context, and therefore ‘properly’ analysed”.

A major goal of this paper has been to reorientate thinking about historical and contact linguistics as complementary parts of one and the same discipline, contact-genetic linguistics. The paper has approached this task from the language transmission angle, particularly in its relation to the typology of language-contact phenomena. The model of contact-genetic linguistics, as envisaged here, recognizes periods of abrupt and gradual change in the history of languages, and is crucially based on the assumption that during both periods, change is due to language contact. The family-tree view of linguistic descent adequately models acquisition of the proto-language by adult speakers of other languages; the change and differentiation among the daughter languages are due to the first languages of the learners and their “mistakes”. The degree of typological distance among the daughter languages, and between them and the proto-language, is explained by demographic ratios of native to non-native acquirers during the languages’ formative stages. Acquisition of the proto-language by L2 learners causes it to become structurally more transparent, while its subsequent use by native speakers (re)introduces structural complexity. L1 users are also responsible for complexification due to additive borrowing in stable high-contact environments. The main features of the model may be summarized as follows:

- In contact-genetic linguistics, language contact occupies center stage in language development. By clearly separating language-contact phenomena due to L1 acquisition from those that involve L2 acquisition, it is possible to both conceptualize language classification in terms of the family-tree model and to incorporate language-contact effects that are problematic for this model.
- Following Thurston (1987), the creation of new languages is conceptualized as the outcome of naturalistic L2 acquisition. This view accounts for the existence of “conservative” and “innovating” languages, correlating with the ratio of L1 to L2 acquirers during the languages’ formative stages. The model provides a natural place in linguistic classification for creoles, which are the most innovating languages in the spectrum of the descendants; the added advantage of this approach is removal of the label of “exceptionalism” from creoles (DeGraff 2003 et seq.).
- L1 acquisition is responsible for the expansion of already existing languages. In isolated communities, the ability to enforce linguistic norms insures that the developments are passed on to the next generation of speakers, while in high-contact communities, the existence of childhood bi- and multilingualism facilitates convergence among neighboring languages and dialects.
- The model directly challenges the view that L1 acquisition is the “normal”, or default scenario of language transmission. The development embodied in the family-tree model is accounted for through L2 rather than L1 acquisition; the role of the latter is to maintain features already present in the language, and to facilitate feature transfer in the context of childhood bi- and multilingualism.
- The model elegantly incorporates the phenomena of language simplification and complexification. Language simplification characterizes the rapid change stages, occurs in a short period of time, stems from massive L2 acquisition of the language, and accounts for differences in complexity levels that are often observed between

older stages of documented languages and their more recent stages. Language complexification is characteristic of stable communities and takes place over a longer period of time through internal elaboration and/or structural compenetration with neighboring language varieties.

- Contact-genetic linguistics represents a move in the direction of a more realistic picture of linguistic descent. By placing heavy emphasis on contact phenomena, it goes beyond the limitations of the family-tree model toward a more comprehensive view of linguistic evolution. Additionally, it removes the study of language-contact phenomena, such as bilingualism, creolization, and naturalistic L2 acquisition, from the margins of historical-linguistic research and places them at the very heart of the field. Further development of this approach lies in a fuller integration of historical-comparative linguistics with historical sociolinguistics, sociolinguistic typology, creolistics, and the study of bilingualism and adult L2 acquisition, into a coherent theory of language change.

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