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Language contact or linguistic micro-engineering? Feature pools, social semiosis, and intentional language change in the Cameroonian Grassfields

PIERPAOLO DI CARLO, JEFF GOOD
UNIVERSITY AT BUFFALO

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Abstract

With more than seventy named languages, and many more locally distinctive varieties, the Cameroonian Grassfields are known for their impressive linguistic diversity. At the same time, the languages of the Grassfields also show a considerable degree of structural homogeneity and lexical similarity which is suggestive of both genealogical relatedness and prolonged processes of contact-induced convergence. However, fine-grained comparative analyses reveal puzzling situations of similarities and differences among neighboring languages and varieties. Often left unaddressed or viewed as "irregularities", these cases might in fact provide insights into low-level language dynamics that have contributed significantly to the development of the regional linguistic configuration. In this paper, we focus on two such cases involving noun classes and tense-aspect marking and propose a model of language change based on a notion that we term the *social semiosis layer*, which is viewed as a specific part of a linguistic feature pool. When paired with the existing notion of neighbor opposition, it can account for situations where there is evidence that specific forms have been deliberately manipulated to create salient distinctions among varieties in a given local sociolinguistic context.

Keywords: contact-induced change; deliberate change; neighbor opposition; Cameroonian Grassfields; noun classes; tense-aspect marking

1. Language change in highly multilingual contexts

Two basic patterns have shaped the study of language change: genealogical inheritance (i.e., tree-like change) and areal diffusion (i.e., wave-like change). These linguistic patterns are implicitly or explicitly seen as co-occurring with identifiable community events (Ross 1997). For example, differentiation between related languages may take place through geographic or social separation between two populations which previously shared a common language, or the spread of features of a language among neighboring languages may result from an increased influence or prestige that one community exerts on another community. Events like these are commonly invoked (or even simply presupposed) in linguistic investigations of genealogical relationships and contact-induced language change, respectively.

Of course, this dichotomous approach to modeling processes of change represents a rather extreme simplification of a more complex reality. On the one hand, the events that are potentially associated with language change are extremely diverse in nature. On the other hand, these models do not account for the role of linguistic differences themselves in defining the structure of communities and their role in creating a linguistic ecology that constrains the possible trajectories of change. The traditional two-way model of change rests on an assumption that the default social situation in which language change takes place is one where there is some kind of "ethnic" continuity in the composition of a language community over time. In such a context, change passively *happens* to a language as a result of larger cultural forces, e.g., a split of one community into two new ethnic groups or a change in prestige relations among two neighboring groups. Perhaps the most obvious way in which this model oversimplifies historical reality relates to the processes through which communities incorporate foreign populations whose patterns of shift may leave an impact on the speech practices of the community which they have joined (see, e.g., Thomason & Kaufman 1988: 89).

One possible response to such complications would be to suggest that the traditional approach to language change is basically correct—or at least highly useful—even if it needs to be amended to handle the details of certain attested patterns of change. Our impression is that this is, in fact, the dominant response, as evidenced, for example, by the accounts of change provided in commonly used historical linguistics textbooks (see, e.g., Campbell 2013: Ch. 7), which continue to give prominence to the traditional split between the notions of tree-like and wave-

like diversification. More striking is the increasing adoption of phylogenetic models to analyze language change which are based on the assumption that it can be usefully analogized to evolutionary change in biology (Dunn 2015). In these models, languages stand in for organisms and change can be represented through the use of network representations depicting *lateral* (i.e., contact) relationships alongside *descent* (i.e., genealogical relationships). A key assumption of work of this kind is that the ways that change operates in populations of language communities maps well onto models designed for the study of biological evolution.

In this paper, however, based on our observations of patterns of linguistic diversification and change in the Cameroonian Grassfields, along with our knowledge of the sociolinguistic features and the social formation dynamics of its communities, we will propose a radically different additional mechanism of change, which builds on the notion of the *social semiosis layer* (henceforth semiosis layer) and is based on the idea that, at least in this part of the world, teleological (i.e., deliberate, goal-oriented) processes are more common in language change than traditional approaches would suggest.[1] In particular, we will argue that the social structure of these communities enables—and, under the right conditions, encourages—high status individuals to initiate processes of language change for social ends. In making these claims, we do not mean to supplant traditional approaches but, rather, to complement them as a step towards developing models of change that are appropriate for small-scale multilingual societies of the sort that have historically characterized the Grassfields. We believe that the sociolinguistic context of this region, and the complications that its patterns of linguistic diversity pose for traditional models of change, provide an opportunity to explore new models that will help us more fully understand the dynamics of language evolution.

We begin by providing a general overview of the comparative linguistic situation of the northern Cameroonian Grassfields in Section 2. In Section 3, we build on existing work in language evolution to develop the notion of the *semiosis layer*. In Section 4 we summarize the group formation dynamics that are attested in the history of the Grassfields societies in order to situate our proposals regarding language

[1] In the theoretical literature on language change, the meaning of the term "teleological change" fluctuates between, on the one hand, planned and conscious change on the part of the speakers (see, e.g., Keller 1994: 139) and, on the other, unplanned and unconscious but functional change that is due to systemic pressures on speakers (like, e.g., restoring symmetry in a phonological system, cf. Martinet 1952). The meaning we intend in this paper is the former.

change in their sociolinguistic context. In Section 5, we apply the notion of the semiosis layer to the analysis of a pattern of noun class variation in the northern Grassfields. In Section 6, we look at variation in tense-aspect marking in one region of the Grassfields from the perspective of the semiosis layer. Concluding remarks are provided in Section 7.

2. The diversity of the Cameroonian Grassfields

The linguistic situation of the Cameroonian Grassfields strongly informs the arguments made in this paper. This region roughly corresponds to the West and North West Regions of Cameroon, and it is one of the most linguistically dense areas of Sub-Saharan Africa as explicitly observed at least as early as Stallcup (1980). In an area roughly the size of Belgium, one finds dozens of southern Bantoid languages, with speaker populations ranging from the hundreds to the hundreds of thousands.[2] Moreover, underlying this diversity of languages is a much larger number of locally distinctive varieties (see, e.g., Good 2013 on the Lower Fungom region of the Grassfields for relevant discussion).

There is a significant amount of shared lexicon among the languages of the region, both in terms of basic vocabulary and with respect to lexical innovations in comparison with related languages spoken outside of the region. Even though regular correspondences are overall difficult to find, these lexical similarities set the core group of languages occupying the region, referred to as the Grassfields group, apart from the rest of the southern Bantoid languages, including Bantu. By contrast, the noun class systems of certain subgroups of Grassfields languages differ from each other across some key features, for instance, in showing a merger of Classes 6 and 6a, the presence of a nasal in the prefixes of noun Classes 1, 3, 9, and 10, and the generalization of low tones on all the noun class prefixes (cf., e.g., Watters 2003). Figure 1, based on Warnier (1979), aims to graphically represent the surprising contrast between the lexical and grammatical evidence in the Grassfields languages. From a lexical perspective, the Western Grassfields group and the Mbam-Nkam group (also referred to as Eastern Grassfields) appear to belong together as part of a Grassfields subgroup. However, from the perspective of their noun class systems, the

[2] See Blench (2014) for an overview of the Bantoid languages.

Mbam-Nkam languages pattern with many northwestern Bantu languages, while the Western Grassfields languages pattern with certain other Bantu languages as well as other languages spoken in nearby areas.

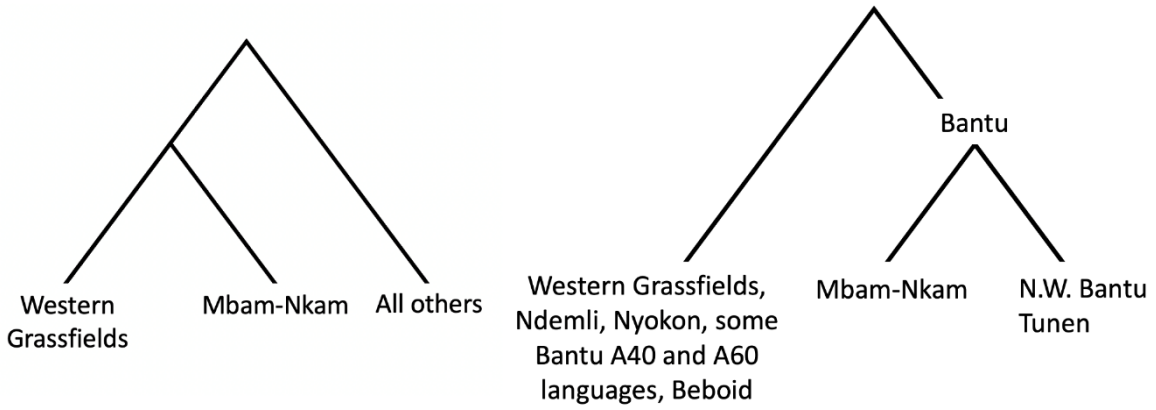

Figure 1: Schematic genealogical trees of Grassfields languages (adapted from Warnier 1979: 418) based on lexical data (left); and noun class patterns (right).

Warnier (1979) is a particularly instructive attempt to address the difficulties that linguists still face in analyzing language change in the Grassfields region. He quite clearly sets out the hypotheses to explain the lack of convergence between the lexical and grammatical patterns using the basic conceptual toolkit discussed in Section 1. This involves three possible accounts: (i) language-internal change as captured by the tree-based model, (ii) contact between languages resulting in grammatical diffusion, or (iii) actual migration of people speaking different languages followed by relexification of languages of the earlier inhabitants. He ultimately concludes that the intense contact among multilingual Grassfields people makes it hard to determine what the right historical account is.

In part due to the linguistic diversity of the Grassfields and nearby parts of Nigeria, Greenberg (1972) suggested that this general area was the homeland for the Bantu languages before they spread south and east to dominate Sub-Saharan Africa—a proposal that continues to be accepted up to this day (e.g., Bostoen 2020) (though see Idiatov & Van de Velde 2021: 98 for a recently proposed alternative location). His suggestion was based on a logical argument regarding linguistic geography where it is assumed that the greater time depth of the presence of a language group in its

homeland will be correlated with greater diversification in that region, whether of languages or dialects. However, this is not the only possible way in which such a diversity can come into being. As discussed in Di Carlo & Good (2014: 237, fn. 5), rather than seeing the linguistic diversity of the Grassfields as driven primarily by *fragmentation* (i.e., the breaking up of a former unity) (see Dalby 1970: 163), detailed comparative investigation informed by ethnographic and historical data suggests that the region's cultures were instead characterized by a pressure towards "linguistic singularity" (Fowler & Zeitlyn 1996: 1), and, in particular, traditional political independence has required a community to be associated with a speech variety that is seen as distinctive in the local sociolinguistic space (i.e., each political unit should have its own "language"). From this perspective, whether or not the Grassfields were part of the Bantu homeland, its current linguistic diversity cannot be seen as good evidence of this since we cannot know how much of this diversity is due to ancient patterns of diversification rather than shallower historical processes linked to contemporary socio-political formations.

Our own observations of the linguistic diversity of this region, and, in particular, the linguistic diversity of a small area of the northern Grassfields known as Lower Fungom, which has seen particularly detailed investigation in recent years, suggests, in fact, that linguistic diversification is not solely, or even primarily, due to a kind of asocial historical drift or patterns of random change that may be retroactively linked to specific communities. Rather, we will argue here that it is also, at least in part, the product of conscious or semi-conscious efforts of linguistic convergence and divergence. These linguistic processes parallel Fowler & Zeitlyn's (1996: 1) characterization of Grassfields' culture more generally as being built out of "the seemingly idiosyncratic parcelling up in individual polities of elements from a common core of cultural forms and practices," and it is this kind of observation, in particular, which has motivated us to develop the notion of the semiosis layer below in Section 3. The linguistic analogs to these cultural processes have been considered in some previous work, such as Mve et al. 2019's discussion of the role of linguistic esoterogeny (see Thurston 1989) in the history of some of Lower Fungom's languages as well as Good (to appear), where insights of Kopytoff (1987) were extended to the realm of language change.

3. Feature pool and the semiosis layer

3.1. The pool metaphor

Tree-based and wave-based models of change are implicitly based on approaches that model the structure of language communities in a way that posits ethnic continuity to be the default situation. This extralinguistic assumption is intrinsically linked to a second fundamental linguistic assumption of these models that entire languages are the units which evolve during the course of language change. On this view, splits in a tree are associated with the fission of a community into multiple new ethnic groups, and wave-like change involves the borrowing or transfer of linguistic patterns across pre-existing groups and their associated languages. Crucially, the size of foreign linguistic elements that are incorporated into the community in these approaches is assumed to be relatively small compared to the overall structure of the community's language as a whole, and the frequency of such events of incorporation is assumed to generally be relatively low.

For reasons that will become clear in the following sections, these views are problematic for the study of language change in the Grassfields. However, there is already another well-known group of languages where it has been established that these views of the dynamics of group formation and language change are unable to capture the events that co-occurred with the formation of a language community, namely creoles, and we build on Mufwene's (2001) work on creole formation here. He reconstructs the emergence of creoles as being characterized by two related events that have both linguistic and social reflexes. The first is the koinéization of the lexifier language caused by the mixing of speakers of different varieties of the same lexifier. This is depicted in Figure 2, which is adapted from Mufwene (2001: 4). The second involves the contact between the varieties undergoing koinéization and the substrate languages that contributed to the formation of the creole. This is depicted in Figure 3, which is adapted from Mufwene (2001: 5). A key element of his approach is the notion of a feature pool, where different lexical and grammatical features of the contributing languages are brought together in the social space of the newly forming community and are drawn upon in the creation of a new variety.

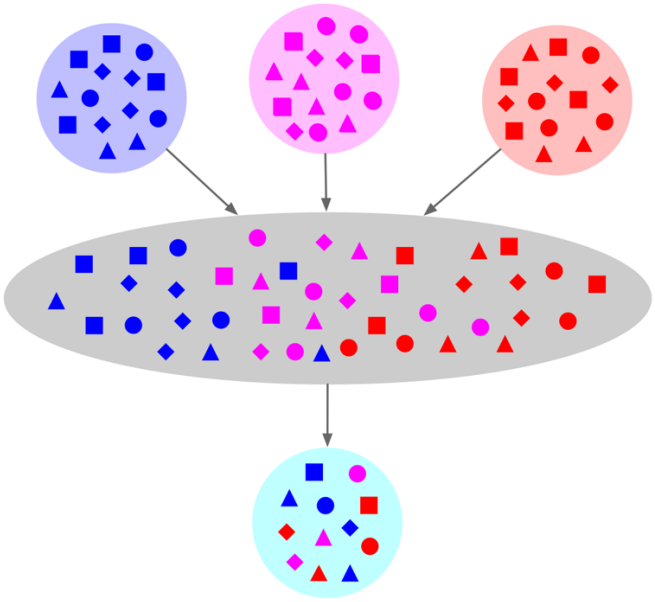

Figure 2: Representation of a prototypical koinéization process (adapted from Mufwene 2001). Increased interaction among speakers of different varieties of a language (the three circles at the top of the figure) creates a *feature pool (*the middle oval) where features of the different varieties associated with the same or similar grammatical functions compete with each other. The result (the circle at the bottom) represents one possible way of reassembling the material from the feature pool into a new variety.

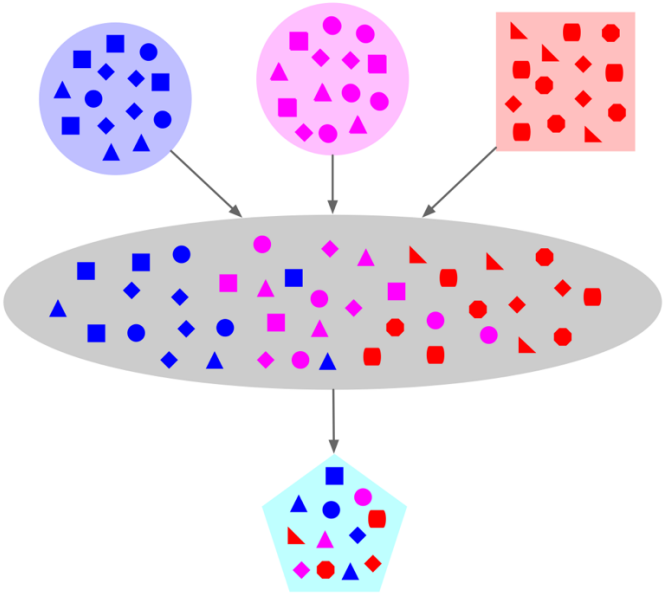

Figure 3: Representation of the process of creole formation (adapted from Mufwene 2001). Varieties of different historical origins (represented by different shapes) contribute to the feature pool resulting in the formation of a new language (also given its own shape).

The notion of feature pool shifts the focus away from languages and instead targets language features or linguistic items, i.e., "any piece of structure that can be independently learned and therefore transmitted from one speaker to another, or from one language to another" (Nettle 1999: 5) as the central units in processes of change. Under this model, the new lexicogrammatical codes that emerge from either koinéization or creolization cannot be directly associated with any single variety that contributed to the contact situation. From this perspective, one might view the codes that we generally refer to as *languages* as comprising sets of linguistic items (or features) enjoying a certain diachronic continuity.

This leads us back to the discussion in Section 2 about the apparent incongruence between lexical and grammatical evidence with respect to the classification of the Grassfields languages. We believe that a feature-based, rather than a language-based, approach should be seriously considered in this context since it "allows us to capture all types of linguistic change in a single framework" (Nettle 1999: 8). In Section 3.2, we develop an extension to the feature pool approach to language change that we think is suitable for the situation seen in the Grassfields.

3.2. The semiosis layer model and neighbor-bias selection

3.2.1 Defining the semiosis layer

Like other notions built on the pool metaphor—e.g., the *linguistic pool* (Nettle 1999) or the *meme pool* (Dawkins 1976)—Mufwene's *feature pool* is conceptualized as an *undifferentiated* pool of linguistic features, a term encompassing any kind of linguistic element including lexical items, phones and phonemes, morphological and syntactic constructions, formulaic expressions, etc. The pool metaphor has the advantage of detaching individual features from languages, thus allowing more fine-grained and nuanced analyses of change processes, but it specifies nothing regarding which features may be more likely to be selected as norms in a newly emerging variety (though see Matras 2009: 310–312 for relevant considerations). We coin the term *semiosis layer* as a way of complementing the feature pool notion to partly fill this gap, with a focus on the interaction between feature selection and social meaning.

As defined here, the semiosis layer is the subset of linguistic items present in a feature pool that, in a particular sociolinguistic situation, are more likely to be leveraged by a language community in order to respond to *neighbor-bias* pressures,

i.e., ideological pressures to either imitate or be distinctive from other languages present within the local linguistic ecology. We use this notion here to generalize on Larsen's (1917) term *naboopposition* ('neighbor opposition'), which focuses on the pressure to be distinctive only (see Section 3.2.2 for further discussion). The items present in a feature pool are accessible to multilingual individuals through their linguistic repertoires, but some of them will be more salient than others in their linguistic and sociolinguistic knowledge with respect to which features are associated with which groups and the relationships that different language communities have to one another. The latter subset of items forms what we call here the semiosis layer. For reasons that will become clear in the following, we opt for the term *semiosis*, i.e., the action of producing signs, in order to stress that our view of the types of change that are connected to the semiosis layer are not evolutionary in the sense of being the consequence of cumulative, invisible hand processes where individual intentions progressively contribute to a general but unplanned change (Keller 1994: 139–141). Rather, they are teleological—i.e., made consciously for a purpose—and, therefore, entail an active engagement in producing (social) meaning on the part of a community or some influential components thereof.

In the remainder of this section, we will first contextualize change that draws on the semiosis layer within language change processes in general and, then, we will provide some further clarifications as to how we think it is possible to detect semiosis layer change.

3.2.2. Contextualizing semiosis layer change

In Table 1, we situate language change that draws on the semiosis layer with respect to well-known models of change in the literature. The table classifies such models across two broad dimensions: (i) whether they primarily apply within monolingual or multilingual contexts (at least from an idealized perspective) and (ii) the nature of the process of selection through which variants become conventionalized within a variety. The first type of selection included in the table is labeled *functional selection*, which we use as a broad cover term for changes which are linked to the broad communicative function of language, and we intend it to encompass the kinds of changes that have been the focus of most work in historical linguistics (e.g., regular sound change, analogical leveling, grammaticalization, etc.). The second is labeled *social selection*, and this is intended to cover changes that impact a language due to

the social relationships among communities associated with different varieties, such as prestige hierarchies or other kinds of culturally significant categories. The third class of selection, which is the one that is central to this paper, is what we termed *neighbor-bias* in Section 3.2.1. Unlike the other kinds of selection, neighbor-bias selection involves the direct comparison of lexicogrammatical codes themselves by individuals or groups to either achieve convergence or divergence of the codes. Whereas social selection involves changes to the codes as a secondary outcome that reflects non-linguistic social relations, this is the intended primary outcome in neighbor-bias selection. The presentation in Table 1 is provided primarily to help contrast change that we model via the semiosis layer with other kinds of change rather than being intended to serve as a complete model of language change.

	Functional selection	**Social selection**	**Neighbor-bias**
Monolingual	Drift	Sociolinguistic variation	State-based language engineering
Multilingual	Sprachbund-like change, borrowing to fill a lexical gap	Feature pool change, borrowing resulting in lexical replacement	Lexical divergence without grammatical divergence, esoterogeny, contact-induced stability, semiosis layer change

Table 1: Situating neighbor-bias change with respect to other kinds of change by classifying processes of change across two dimensions involving monolingual communities and multilingual communities and different types of variant selection.

As indicated in Table 1, we see well-known patterns of change such as *drift* (see Joseph 2013 for discussion), the grammatical convergence found in large Sprachbund areas, and lexical borrowing to fill gaps (e.g., a term for an item being newly introduced to a society) as the result of functional selection. Social selection encompasses sociolinguistic variation within a society that can be tied to specific social categories (e.g., race, class, etc.) as well as feature pool change of the sort modeled by Mufwene (2001) and discussed in Section 3.1. It would also include borrowing in cases where a word from one language replaces an existing word in another for social reasons (e.g., perceived differences in social prestige across language communities).

In addition to our proposed category of semiosis layer change developed in this paper, we have identified several other types of change that we believe can be classified as involving neighbor-bias selection. The first of these, in a monolingual context, is state-based language engineering where explicit efforts are made to create a national variety that is clearly distinct from the languages associated with any other state. In fact, the outcomes of state-based language engineering can be accounted for in terms of a semiosis layer, though we do not apply that label to them here. Take for instance the case of the re-introduction of the feminine in Nynorsk (norw1262; Indo-European, Germanic).[3] The feminine had disappeared in Swedish (swed1254; Indo-European, Germanic), Danish (dani1285; Indo-European, Germanic), and in the Danish-influenced form of Norwegian that was the official language of Norway from the 16th to the 19th centuries (Hagège 2005: 110). Motivated by nationalist claims, nineteenth century Norwegian intellectuals reintroduced the feminine as a feature of the newly emerging Nynorsk (Neo-Norwegian) taking it from southwestern dialects of Norwegian that had maintained it. This process is in line with the perspective offered by the semiosis layer approach since (i) feminine forms were among the available linguistic features that could be drawn in processes of change in the local linguistic ecology and (ii) those involved in reintroducing it to the language associated with Norway were aware that this would make Nynorsk distinctive from other Scandinavian languages that it was in close contact with.

In fact, practically all of the examples of language engineering discussed in Hagège (1982, 2005) can be characterized in these terms. Such cases are normally not addressed by historical linguists due to the perceived artificiality of the processes that engendered them, and the fact that they seem particular to nation-states where the power of political and intellectual elites, combined with diffusion of new forms via mass-media and compulsory schooling, can create widespread norms on a scale which would be impossible with other forms of social organization, such as those found in traditional African societies, where language change is assumed to have been *natural* rather than *artificial*. This probably accounts for the absence of this kind of perspective in the study of "tribal" African languages. However, as we will see in the next section,

[3] To assist with the identification of the language varieties discussed in this paper, we include Glottocodes as found in Glottolog (Hammarström et al. 2023) but, for purposes of presentation, we include a more fine-grained classification for the languages of focus and use more widely accepted classificatory labels than those proposed by Glottolog. However, we follow Glottolog for the other, non-African languages cited.

in the small-scale societies of the Cameroonian Grassfields, where pressures for cultural distinctiveness are comparable to those associated with nation-states, there is evidence for processes analogous to state-based language engineering—i.e., what one might call *linguistic micro-engineering* given the small-scale nature of these societies—which we refer to under the heading of semiosis layer change here.

Unlike all the other classes of change in Table 1, the mechanism of actuation in neighbor-bias selection is explicitly teleological, i.e., the change is initiated for a specific purpose, in this case a social purpose targeting inter-group distinctiveness. In addition to the cases discussed in detail below, other cases that we are aware of where neighbor-bias is an important factor in the dynamics of language evolution in small-scale societies of the sort found in the Grassfields include the unexpectedly low levels of shared vocabulary among neighboring languages sharing substantial parts of their semantics and structure, as found in Vanuatu (François 2011) and the northwest Amazon (Epps 2009, 2020). By being an especially consciously accessible part of language, the lexicon is clearly the linguistic domain in which neighbor-bias phenomena can be most readily observed, although they have also been found in phonology (e.g., Gomez-Imbert 1999).

Below, we will focus on apparent cases where neighbor-bias is manifested morphologically in both affixes and function words. Morphological divergence between related and neighboring languages has also been previously described in the literature (see, e.g., Evans 2019 for an example of how variation in gender assignment of body-part nouns was socially recategorized as shibboleths distinguishing Iwaidja from Mawng, respectively iway1238 – Iwaidjan Proper, Central Iwaidjic – and maun1240 – Iwaidjan Proper). Linguistic esoterogeny (see Thurston 1989), where language change adds complexity to a language in ways that make it harder for outsiders to learn would also be classified as an instance of neighbor-bias change in this classificatory scheme.

While we use the term neighbor-bias here as a cover term for both neighbor opposition and neighbor attraction, all of the cases just discussed involve neighbor opposition. We believe that this is, on the one hand, because it would be hard to identify semiosis layer convergence from either shared retention or lack of change from a purely practical perspective in cases where historical records are lacking and, on the other hand, due to the fact that there is a general bias in linguistic investigation to more readily notice cases of linguistic divergence rather than linguistic convergence or maintenance of non-distinctiveness.

3.2.3 Composition of the semiosis layer

As discussed at the beginning of Section 3.2, a semiosis layer is a part of a feature pool composed of linguistic items that, once certain linguistic and extralinguistic premises are satisfied, are more likely to be leveraged by a language community in order to respond to neighbor-bias pressures. We claim that what makes semiosis layer change different from other neighbor-bias phenomena—such as contact-induced stability (cf., e.g., Connell 2001; this volume) or divergence in the lexicon but not grammar, as in Vanuatu (François 2011) or in the Vaupés region of the Amazon (Epps 2009) (see Table 1)—is that it cannot be readily ascribed to cumulative, invisible-hand processes and instead is the result of conscious change initiated by some group of influential community members whose speech practices spread rapidly in a language community.[4]

That being said, due to the fact that we do not have access to the mental state of the individuals whose linguistic behavior initiated a change, either consciously or unconsciously, a key question emanating from our proposals here is how we can determine what characteristics differentiate semiosis layer items from the rest of the linguistic items found in a multilingual feature pool and, on this basis, what kinds of changes are good candidates for being classified as instances of semiosis layer change. Since the semiosis layer is defined on the basis of a finalistic, teleological process, the items that can or cannot be a part of it will depend on their relationship to social and linguistic differences in the specific case under analysis. What we propose in (1), by contrast, is an outline of some general properties of linguistic items that would make them good candidates for the deliberate construction of linguistic similarity or

[4] As Evans (2019) points out, neighbor-bias selection in and of itself does not necessarily entail that the speakers are always conscious agents of the change. For instance, psycholinguistic experimental evidence (Ellison & Miceli 2017) suggests that bilinguals who are motivated to monitor their production to respond in a particular language avoid vocabulary that is common to their two languages—a phenomenon called "doppel avoidance", where "doppel" is any item that is close in both form and meaning in two languages regardless of the reasons for their resemblance—and that this happens largely below their level of awareness. Low-level pressures like these could potentially lead to neighbor opposition via lexical divergence across two languages that had previously been more similar, but this would not necessarily mean that the change is teleological and, as a consequence, that we are dealing with semiosis layer change.

difference—i.e., having characteristics which we might generally expect of semiosis layer items.

(1)

a. **Neighbor-bias potential**
In order to be considered effective at the level of semiosis layer change, linguistic items should be readily perceived by users as encoding social meaning of similarity or difference among languages used within a community. This kind of potential manifests in two, potentially interrelated characteristics: namely, inherent and frequency derived neighbor-bias potential.

   i. Neighbor-bias potential is *inherent* in items that stand out for their perceived peculiarity. Phonological shibboleths (beginning with the biblical one) are cases in point. An example from the Lower Fungom area is the presence of pharyngealized vowels in Mundabli (mund1340; Niger-Congo, Yemne-Kimbi) but not in the otherwise extremely similar (and geographically very close) Mufu variety (mufu1234; Niger-Congo, Yemne-Kimbi) nor in any of the other languages of the northern Grassfields (Voll 2017: 41–43).

   ii. Neighbor-bias potential is high in items that are high in *frequency* in usage and, therefore, likely to be noticed even in short exchanges. This could include specific morphemes and sets of covariant morphemes (like in patterns of agreement), sounds, content words, common expressions (such as greetings), or basic constructions such as agreement patterns (like, e.g., in the case of the variation in noun class assignment as shibboleths in Iwaidja and Mawng mentioned in Section 3.2.2, which surfaces in nominal and verbal agreement patterns, see Evans 2019: 576). By targeting such items, a change would instantly become frequent in everyday speech and therefore effectively encode neighbor-bias.

b. **Straightforward acquisition**
For an item to be effectively employed in a process of semiosis layer change, it should quickly propagate through a language community in a small-scale society lacking the coercive forces of the state. This implies that it needs to be readily

acquirable in the context of community members' existing linguistic knowledge. Among the characteristics that can facilitate straightforward acquisition, salient ones are semantic and structural congruence—i.e., items that, regardless of their source, fulfill the same function or have the same semantic value or both—and predictability both in terms of their morphosyntactic positioning and aspects of their phonological form.

c. **Minimally disruptive of existing system**
Related to the characteristic of straightforward acquisition, for a feature pool item to be part of the semiosis layer, it should not otherwise be disruptive to the encoding of other kinds of meanings that community members are accustomed to expressing linguistically. For example, if, in a multilingual feature pool, there are candidate items from a number of languages exhibiting ATR harmony and one item from a language not exhibiting ATR harmony, within a set of highly frequent and semantically congruent items, the one that comes from the language without ATR harmony language would be a less likely member of a semiosis layer due to the fact it would clash with the existing phonologies of the languages from which the feature pool items are drawn and, therefore, be less easily acquired across a community.

These general properties should be interpreted with respect to the social backdrop of our area of focus, as discussed in Section 2, namely the presence of relatively small language communities and where individual-level multilingualism is the norm. The extent to which a planned semiosis layer change will actually propagate through a community clearly depends on both the extent to which both these conditions are met, and will, all things being equal, be easier to implement in a community with fewer individuals and where a high proportion of members have knowledge of the neighbor-bias target languages.

The membership of an item in the semiosis layer should be viewed as probabilistic rather than deterministic. We do not assume that all feature pool items having the three characteristics provided in (1) will necessarily be leveraged by a community for encoding neighbor-bias. Rather, if a community consciously encodes neighbor-bias then it is more likely than not that the items that it will leverage will have those three characteristics. Also, the three characteristics in (1) say nothing about which types of speech community events will result in a semiosis layer change as this will depend entirely on extralinguistic factors.

However, we believe that these characteristics can be used in order to detect whether a specific pattern of change is due to semiosis layer change. Just to take one example, if we consider point (1a ii) above (frequency-derived potential), we realize that semiosis layer change becomes a reasonable research hypothesis when in a language one finds several apparently borrowed inflectional morphemes of high or very high frequency but few or no borrowings in the lexicon from the same source. By targeting high-frequency items with the only constraints that they should be easy to acquire and minimally disruptive of the existing system, semiosis layer change would be expected to normally transcend both borrowability hierarchies (e.g. Field 2002: 25–48; Matras 2009: 153–165)—as we will see in the cases discussed in Section 5 and Section 6—and the conventional wisdom on the degree of conservatism of items of the so-called *core vocabulary* (e.g. Swadesh 1952, McMahon & McMahon 2006: 31–50, Heggarty 2010), which, due to their high frequency, might be targeted more effectively than non-core vocabulary for encoding neighbor-bias.

Some final remarks should be made concerning the nature of the notion of the semiosis layer. We do not think it will always be possible to provide a clear-cut identification of the extent to which any change may be a semiosis layer change because this will generally require access to information that is not found in the historical record. In addition, we should be clear that our main goal in the application of the semiosis layer model is that it may provide an opportunity to structure inferences about the social underpinnings of specific instances of language change that cannot be accounted for satisfactorily by traditional language-internal and contact-based analyses. Finally, we do not assume that multiple motivations could not be at play in a single change where, for example, a sound change following a common pathway could result in an alternation that enters the semiosis layer and is then used to encode neighbor-bias.

3.3. Modeling semiosis layer divergence

In order to make the discussion more concrete, we provide a schematic representation of one possible route of semiosis layer divergence in Figure 4 below. The figure represents the split of one linguistic community into two, and, for the sake of the argument, we provide a simplified example. It should be kept in mind that the sociopolitical realities that it is purported to represent—i.e., small-scale chiefdoms—are common in traditional societies of the Grassfields (Fowler 2011) as well as in

much of sub-Saharan Africa as a whole (e.g., de Heusch 1987), where kin groups of diverse provenance form a community under the authority of a political and spiritual leader—i.e. a "sacred chief".

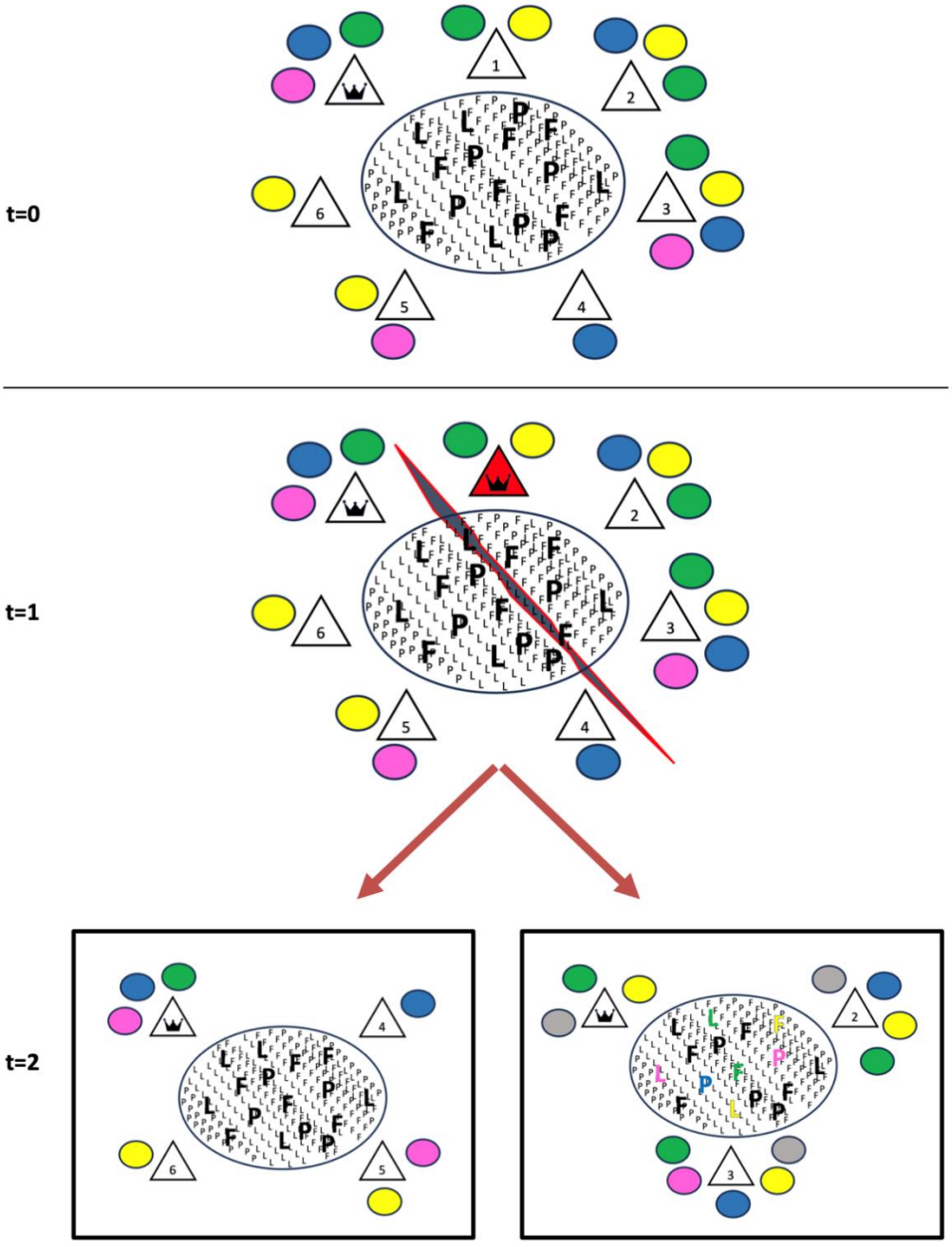

Figure 4: Schematic representation of semiosis layer divergence.

The initial situation (t = 0) is one in which multiple kin groups (triangles) form a community headed by a "royal" kin group (indicated by the crown symbol). In each kin group, there are individuals who have competence in languages spoken in other, neighboring communities (colored circles surrounding the triangles). While the

community as a whole has a shared code (the main oval in the center), its members have an aggregate repertoire of additional four other codes (blue, green, purple, and yellow), associated with their respective communities.

The situation depicted at t = 1 is that of a fission of the community caused by a conflict over leadership between the existing royal kin group and a second kin group (indicated by the crown icon in a red triangle). At t = 2, we see the consequences of the fission: The initial community no longer exists as it is now split into two autonomous communities, each headed by a royal kin group. The diagram on the left-hand side represents what is left of the initial community—i.e., the original royal kin group, three kin groups allied with it, and the initial shared code. The diagram on the right-hand side represents the newly formed community—i.e., a royal kin group (no longer in conflict with another kin group and, because of this, not depicted in red) with two allied kin groups. A crucial difference between the two representations is that the new community has changed some of the high-frequency items of its shared code by drawing on forms from the multilingual feature pool at its disposal due to the multilingual repertoires of its members. This is semiosis layer change because (i) the forms targeted have high neighbor-opposition potential and (ii) the new forms are drawn irregularly from among the pool available to the community—taken from languages that are known also by members of the "mother" community—with the primary goal of obtaining a code that is distinctive of the new community in its sociolinguistic context. This change is made abruptly and both intersects with and sets the stage for further, cumulative, invisible-hand changes that may take place in this code.

What is required for semiosis layer divergence is the formation of a new group in one way or another, not necessarily that one group split directly into two groups. In Section 5, we will argue that a specific semiosis layer change in the Munken variety (munk1244; Niger-Congo, Yemne-Kimbi) of Mungbam (abar1238; Niger-Congo, Yemne-Kimbi) took place in a different context and was the result of the formation of a new group when outsiders entered an existing community.

4. Sociolinguistic group formation in "frontier" settings

Our proposals regarding the semiosis layer are informed not only by linguistic evidence but also a range of other cultural features of Grassfields societies that are

connected to broader observations about communities in sub-Saharan Africa, in particular regarding the historical dynamics that lead to the formation and dissolution of sociopolitical groupings there.

For example, phenomena such as the spatial mobility of groups and the incorporation of outside elements into societies have been amply discussed in African anthropological literature as extremely widespread among both African traditional and postcolonial societies (Cohen & Middleton 1972, Brooks 1993). One particular pattern of mobility and incorporation that has characterized the history of a great many traditional societies of sub-Saharan Africa has been characterized in terms of "the African internal frontier" by Kopytoff (1987). This model of community formation can be broadly described as follows: A group grows demographically until internal conflicts lead to its fission, where one part of its population—usually tied together by a relationship characterized in terms of kinship—leaves the settlement and either founds a new political unit or is incorporated into an existing group. If it forms a new political unit, in the ideal case, it does so in a region that is seen as outside the political control of any other group and grows by "attracting to itself the ethnic and cultural detritus produced by the routine workings of other societies" (Kopytoff 1987: 7). Conflict between groups can lead them to become more distinctive from each other across cultural, linguistic, and spatial dimensions, while groups seeking to grow may take steps to attract and incorporate newcomers who are seeking a new group to be part of.

On the one hand, the newly formed communities are founded around the same cultural models as the communities from which their component groups are drawn. On the other hand, they must have cultural features that make them clearly distinctive in the local cultural space as a means of justifying their independent status. This creates a fundamental tension due to a need to exhibit difference in the context of broad cultural similarity. This is achieved through rich patterns of variation overlaid on a common sociocultural configuration. Linguistic distinctiveness is one element of this, and it also involves variation in kinship structures, economic specialization, and secret societies, among other sociocultural domains (Nkwi & Warnier 1982; Röschenthaler 2011).

Focusing on linguistic variation in these contexts specifically, we can first consider what can be reconstructed with respect to a group's attitudes towards its community language in precolonial times in this part of the world. Regarding the Bamileke societies of the southern Grassfields, for example, Voorhoeve (1971: 1) writes: "Each

chiefdom considers its own language as the only possible linguistic norm. Dialect differences are often exaggerated by the speakers, and the use of a specific dialect seems to constitute a man's very identity as belonging to a certain chiefdom (or tribe). It does not seem conceivable for the inhabitants of a certain village to regard their mother-tongue as a dialect of the language of some other village. Remarks of this nature would certainly be interpreted as a kind of improper cultural imperialism from the side of the competing village." Di Carlo & Good (2014) reviewed evidence indicating that very similar attitudes were still prevalent in the language ideologies of Lower Fungom at the time.

A second aspect of historical patterns of language use that can be reconstructed is the extensive presence of multilingual competences among speakers of Grassfields languages in the past. Before the introduction of lingua francas to the region (in particular, French in the south and Cameroon Pidgin English in the north), inter-community communication was possible only through multilingualism in the various local languages. Based on a wealth of ethnographic data, Warnier (1980) concludes that more than half of the inhabitants of the region were proficient in two local languages, and that individuals who could speak three, four, or even five distinct languages were not rare (Warnier 1980: 834). More recently, research on patterns of traditional multilingualism in areas like Lower Fungom (e.g., Esene Agwara 2020, Ojong Diba 2019) and Lower Bafut (e.g., Chenemo 2019; Chenemo and Neba 2020) have confirmed that multilingualism in neighboring languages was the norm and has been relatively widespread in local populations.[5]

If we look at these historical patterns together two key points emerge. On the one hand, the prevalence of an ideology of linguistic singularity (see Section 2) manifested itself in pressure for a group to be linguistically distinct from neighboring groups, in line with the notion of neighbor-bias selection discussed in Section 3.2. On the other hand, widespread multilingualism meant that speakers would frequently have knowledge of the lexicons and grammars of neighboring languages and were,

[5] Since 2016, the northern half of the Grassfields has been at the center of armed conflict between separatist groups and the state army (Pommerolle & Heungoup 2017). Over time, this conflict has pushed a great number of people to seek refuge in safer areas of Cameroon. There are no exact figures, but the exodus from peripheral areas such as Lower Fungom has been massive. For example, refugees from the area report that the village of Buu has been completely abandoned, and other villages are currently inhabited by only a few families (Ikom Christopher, p.c.). The effects that this process of forced displacement will have on the local forms of multilingualism can hardly be foreseen.

therefore, able to target them in order to develop and maintain such distinctiveness, in line with the idea that patterns of change in small-scale societies characterized by high degrees of multilingualism can involve mechanisms, such as semiosis layer change, that are different from more well-known kinds of change.[6]

Having developed the conceptual approach that forms this paper, in the following sections we consider two patterns of linguistic differentiation in the languages of Lower Fungom, one targeting the nominal domain (Section 5) and the other the verbal domain (Section 6). In particular, we will focus on how an approach employing the semiosis layer model can allow us to make sense of patterns of variation that are otherwise difficult to describe in traditional terms.

5. The historical development of the *ki-/a-* noun class in Mungbam

5.1. The linguistic context

Mungbam is a cover term for a language cluster comprising five dialects, each of which is restricted to a single village, in the Lower Fungom region of North West Cameroon (see Figure 5) at the northern edge of the Cameroonian Grassfields. The language name is an acronym based on the beginnings of the English names of the five villages where it is spoken: Munken, Ngun (ngun1279; Niger-Congo, Yemne-Kimbi), Biya (biya1235; Niger-Congo, Yemne-Kimbi), Abar (abar1239; Niger-Congo, Yemne-Kimbi), and Missong (miss1255; Niger-Congo, Yemne-Kimbi). Within Lower Fungom, each of these varieties is recognized as a distinctive *talk*, and there is no perceived linguistic unity among them. Mungbam, as a label, is restricted to scholarly linguistic sources such as Lovegren's (2013) grammar of the language.

As is clear from the description presented in Lovegren (2013), the Mungbam varieties are all lexicogrammatically quite close while also being clearly distinctive from each other—put differently, dialect differences among the varieties are not subtle. One of the varieties, Missong, is especially distinctive to the point where scholarly criteria would probably group it as a distinct language from the other four, which could then be characterized as a dialect cluster (see Di Carlo & Good 2014 for further contextualization).

[6] This echoes Warnier's (1980) speculation that, in the Grassfields, lexical items were borrowed to the extent that they did not reduce the distinctiveness of a variety with respect to neighboring varieties—or even enhanced it (Warnier 1980: 842).

A set of varieties such as those associated with Mungbam presents us with a good opportunity to explore the semiosis layer approach to the development of linguistic differentiation. The five dialects are associated with villages which are geographically quite close to each other. (The journey between the two most distant Mungbam villages is only around two hours on foot during the dry season.) Before recent patterns of displacement (see fn. 4), speakers of the different varieties were frequently in contact, and many individuals are multilectal in multiple Mungbam varieties (see Esene Agwara 2020 for a general overview of multilingualism and multilectalism in Lower Fungom). This provides an ideal sociolinguistic setting for exploring the ways that languages might be impacted by dynamics of change where a semiosis layer of features is exploited to create salient differences among local varieties. Our focus will be on a specific feature of the noun class systems of Mungbam varieties.

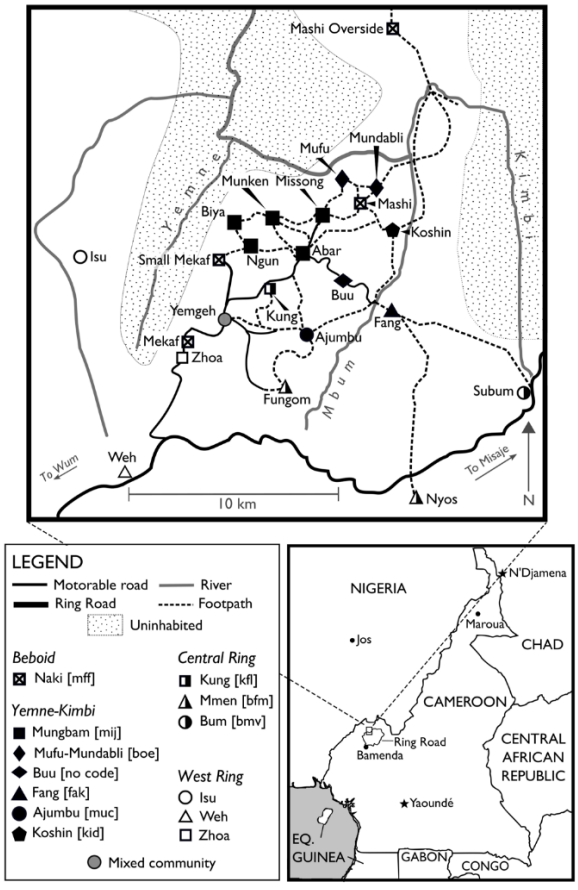

Figure 5: Language map of Lower Fungom and surrounding areas.

5.2. Mungbam noun class systems and Class 7~12

Consistent with their classification in the Bantoid group of languages, the Mungbam varieties show Bantu-like noun class systems where nouns appear with a prefix coding their class, and class pairings are part of the encoding of a singular/plural distinction. Each class is also associated with a specific pattern of agreement on elements such as demonstratives and pronouns. The Mungbam noun class systems are described in more detail in Lovegren (2013), and our presentation of them here leaves out various complications, none of which critically impact the arguments being made here.

The noun class systems for each dialect of Mungbam are summarized in Tables 2–6 below. The shape of the prefixes appearing on noun stems is provided in the first column for a class and a representation of the shape of the associated concord is in the second column. Class numbering conventions follow those of Lovegren (2013), which attempt to relate Mungbam noun classes to those reconstructed for Proto-Bantu, though these should not be taken as definitive statements on cognacy. Typical singular/plural class pairings are indicated via their placement in the same row. Diacritics on the concords in the tables indicate that they are associated with a higher or lower tone as compared to other concords, with the precise tonal realization depending on the stem that they combine with. A capital *N* indicates a nasal which assimilates to the place of a following consonant. The *j* is used for a palatal glide. Classes listed with more than one prefix show lexical variation in prefix choice. Class 13 can show circumfixal coding, as indicated. Classes 5L and 5H seem to be associated with Proto-Bantu Class 5, but they lack a consistent tone in Mungbam, which is why they are separated into a low (L) and high (H) class here (see Lovegren 2013: 121). Classes 6a and 14 are associated with nouns that do not encode a singular/plural distinction, and are, thus, presented as unpaired in the tables.

The noun class systems of the Mungbam varieties display segmental noun class prefixes across all classes and are also similar to each other with respect to class marking on the noun and agreement patterns.[7] However, a noteworthy high-level difference is found in the phonological shape of the marker of the singular class pairing with plural Class 8. Lovegren (2013) labels this Class 12 for all Mungbam varieties except Missong, where the label Class 7 is used. The use of the Class 12 label

[7] The presence of segmental prefixes across all classes has been considered a conservative feature if compared to other Yemne-Kimbi and Beboid languages where some classes are either not coded on the noun or marked only suprasegmentally (cf. Good et al. 2011).

associates this class in Mungbam with a reconstructed Proto-Bantu noun class with the shape *ka-, while the Class 7 label associates it with a reconstructed Proto-Bantu noun class with the shape *ki- (see Maho 1999: 247 for an overview of reconstructions of the Proto-Bantu noun classes). Class 7 would normally be expected to be paired with Class 8 to encode a singular/plural distinction, which would argue in favor of this reconstruction more broadly. However, except for Missong, the vowel seen in the relevant forms is not in line with what would be expected for Class 7. For purposes of exposition, we will refer to the singular class that is paired with Class 8 in Mungbam languages as Class 7~12 here, as a way of signaling the lack of clarity in its reconstruction.

Abar					
1	ù-/Ø-	w`-	2	bwe-/bə-/a-	bw-
3	ú-	w´-	4	í-	j´-
5L	ì-	j`-	6	mwe-/məN-/a-	mw´-
5H	í-	j´-	13	i-/ki-…(-lɔ)	kj´-
12	kə-/a-	k´-	8	bi-/i-	bj´-
9	ì-	j`-	10	í-	j´-
19	ɕi-/i-	fj´-	18a	m͡N-	mw´-
6a	məN-/aN-	mw´-			
14	bu-/u-	bw`-			

Table 2: The noun class system of Abar.

Biya					
1	ù-/Ø-	w`-	2	bə-	bɥ´-
3	ú-	w-	4	í-	j´-
5L	ì-	j`-	6	a-	w´-
5H	í-	j´-	13	kə-…(-lə)	kj´-
12	kə-	k´-	8	bi-	bj´-
9	ì-	j`-	10	í-	j´-
19	fi-	fj´-	18a	mN-	mw´-
6a	N-	mw´-			
14	bu-	bɥ`-			

Table 3: The noun class system of Biya.

Missong					
1	ù-/Ø-	w`-	2	ba-	bu´-
3	ú-	w´-	4	í-	j´-
5L	ì-	j`-	6	a-	w´-
5H	í-	j´-	13	ki-…(-Cə)	kj´-
7	ki-	k´-	8	bi-	bj´-
9	ì-	j`-	10	í-	j´-
19	fi-	f´-	18a	mu-	mu´-
6a	aN-	mu´-			
14	bu-	bu-			

Table 4: The noun class system of Missong.

Munken					
1	ù-/Ø-	w`-	2	bə-	b´-
3	ú-	w´-	4	í-	j´-
we5L	ì-	j`-	6	a-	n´-
5H	í-	j´-	13	ki-…(-lə)	kj´-
12	a-	k´-	8	bi-	bj´-
9	ì-	j`-	10	í-	j´-
19	ɕi-	ɕ´-	18a	mu-	mw´-
6a	N-	m´-			
14	bu-	bw`-			

Table 5: The noun class system of Munken.

Ngun					
1	ù-/Ø-	w`-	2	bə-	bw´-
3	ú-	w´-	4	í-	j´-
5L	ì-	j`-	6	a-	mw´-
5H	í-	j´-	13	kə-…(-Cə)	k´-
12	kə-	k´-	8	bi-	bj´-
9	ì-	j`-	10	í-	j´-
19	fi-	fj´-	18a	mN-	mw´-
6a	N-	mw´-			
14	bu-	bw`-			

Table 6: The noun class system of Ngun.

Lovegren (2013: 132–137) lays out in detail the problems involved with understanding the historical source of Class 7∼12 in Mungbam. First, a scenario involving different patterns of sound change from a common ancestral form is not tenable if one makes the standard assumption that sound correspondences should be regular in the context of genealogical change (Campbell & Poser 2009: 4). All of the varieties show *i* as the reflex of *i in their class markers, as is most easily seen in their use of the *bi-* prefix for Class 8, which can be straightforwardly associated with Proto-Bantu *bi-. Class 7∼12 reflexes with the form *kə-* cannot, therefore, be seen as a regular reflex of Proto-Bantu Class 7 *ki-. Associating them with Class 12 *ka- is not problematic, in particular since this same vowel correspondence is seen in these varieties in the Class 2 prefix form *bə-*, where the Proto-Bantu reconstruction is *ba-. However, Missong Class 7∼12 *ki-* cannot be seen as a regular reflex of Proto-Bantu Class 12, but can be associated with Proto-Bantu Class 7 without any complications regarding sound correspondences.

The *a-* form of the prefix, which is found in Munken (Table 5), poses further problems. While a *ka > *a-* sound change would not necessarily be unusual in general historical terms, there is no evidence for such a change outside of this one prefix. The *a-* realization of the prefix in Abar is associated with an optional process where prefixes with initial consonants can be dropped, in which case *ə* alternates with *a*, as seen not only for Class 7∼12 in Table 2, but also Classes 2, 6 and 6a. However, no such process is found in Munken.[8]

We are left, then, with the following question regarding the Class 7∼12 prefixes in Mungbam: Why do there seem to be two different reflexes of Class 12, either *kə-* or *a-*, with no clear way to account for them in terms of regular sound change across all varieties?

In contrast to our own point of view, an anonymous reviewer suggests that this pattern is not historically problematic for two reasons: (i) The different noun class prefix in Munken can be viewed as the result of a language-internal process in Munken comparable to what is still seen in Abar, whose endpoint was the current attested

[8] Lovegren's (2013) data on Ngun includes *a-* as an alternate prefix form for Class 7∼12. His data for Ngun was more restricted than for other varieties of Mungbam, and it is not clear what forms prompted the inclusion of the *a-* form in that variety in his description. More recently collected data by Tschonghongei (2022) suggests this is a relatively marginal pattern, which is why we do not include it in Table 6. We do not have a specific account for the presence of this form in this paper, though we can speculate that it entered Ngun via lexical borrowing.

situation in Munken. And, (ii) this kind of minor irregularity is often encountered in noun class prefixes of Bantu languages, especially in the northwest Bantu area which is adjacent to the Grassfields.

However, we believe that what we have presented in this section is sufficient to make the case for a relationship between Munken *a-*, Abar/Ngun/Biya *kV-*, and Missong *ki-* that cannot be accounted for in traditional genealogical or contact-based terms. Furthermore, in a database collected as part of the larger research program that informs the work described here, of about 400 respondents to a sociolinguistic survey on local patterns of multilingualism, 73% of those who reported to be proficient in Abar (n = 124) and 88% of those who reported proficiency in Munken (n = 92) claimed knowledge of both lects. (See Esene Agwara 2020 for the research methods underlying this data collection and a report on patterns found in a subset of the currently available data.) If we also consider that the two villages are relatively close to each other (less than two hours' walk on footpaths), and that the ethnographic fieldwork of the first author has found that intermarriages between them are common, that both communities mostly relied on the same weekly market (the Abar market) before the current period of conflict (see fn. 4), then the idea that social factors were not involved with the development of this high-frequency feature that differs between them seems to us to be relatively implausible. While this does not necessarily mean that the difference arose due to semiosis layer change, it is not consistent with the categorization of such a difference as a minor irregularity rather than a linguistically significant one.

We, therefore, believe that a detailed historical account of this difference across the varieties is warranted, and we will propose one involving semiosis layer change in Section 5.5. Before doing so, however, we look at these patterns in the wider areal context in Section 5.3 and provide relevant non-linguistic information about Lower Fungom cultures and history in Section 5.4.

5.3. Noun Class 7∼12 prefixes with shape a- in the northern Grassfields

Far from being just a minor analytical discrepancy, the presence of different markers for this class has in fact been seen as a historical problem for some time, and this pattern is not isolated to Mungbam. The map in Figure 6 and the data presented in Table 7 summarize the known distribution of markers of Class 7∼12 and Class 8 in

the northern Grassfields. Below, we summarize three proposals that were advanced to account for the presence of marker *a-* instead of the expected *kV-*.

No.	Language	Subgroup	Class 7∼12 marker	Class 7 concord	Class 8 marker	Class 8 concord	Source
1	Bebe	Beboid	kə-	k-́	bi-	b-́	Hombert 1980
2	Kemezung	Beboid	kɨ-	k-	bi-	b-	Smoes 2010
3	Mbuk	Beboid	kɪ- / kə-	k-	bi-	b-	Tschonghongei 2022
4	Naki	Beboid	a-	k-́	bi-	by-́	Hombert 1980
5	Nchanti	Beboid	ki-	k-́	bi-	by-́	Hombert 1980
6	Noni	Beboid	ke-	k-́	bi-	by-́	Hombert 1980
7	Nsari	Beboid	ki-	k-́	bi-	by-́	Hombert 1980
8	Babanki	Central Ring	kə̀-	kV-	ə-	(ə-)	Akumbu & Chibaka 2012
9	Bum	Central Ring	a-	a-	u-	u-	Hyman 2005
10	Fungom	Central Ring	a-	?	ɪ- / e- (cl.	?	pers. comm.
11	Kom	Central Ring	a-	a-	ɨ-	ɨ-	Shultz 1997, Jones 1997
12	Kuk	Central Ring	kə̄-	k-	o-	w-	Hyman no date
13	Kung	Central Ring	kə̀-	kV-	ù-	wV- / ù-	Tatang 2016
14	Mmen	Central Ring	a-	k- / a-	e- (i- cl.	e- / ə-	Hyman 2005, no date
15	Oku	Central Ring	ke-	k-	e-	w-	Hyman 2005, no date
16	Limbum	Mbam-Nkam	Ø-	y-	b- (cl. 2)	w- (cl. 2)	Fransen 1995
17	Aghem	West Ring	kí-	k-́	ó-	w-́	Hyman 1979
18	Isu	West Ring	ká-	k-	ó-	w-	Hyman 1979
19	Weh	West Ring	ká-	k-	ú-	u-	Hyman 2005, no date
20	Abar	YK	kə- / a-	k-́	bi- / i-	bj-	Good et al. 2011
21	Ajumbu	YK	kə-	k-	bə-	b-	Good et al. 2011
22	Biya	YK	kə-	k-́	bi-	bj-	Good et al. 2011
23	Buu	YK	kə-	kə-	bə-	bə-	Tschonghongei 2022
24	Fang	YK	Ø/kə-	k-	bə-	b-	Good et al. 2011
25	Koshin	YK	kə-	k-	bə-	b-	Good et al. 2011
26	Missong	YK	ki-	k-́	bi-	bj-	Good et al. 2011
27	Mundabli-	YK	ø-	k-	ø-	b-	Good et al. 2011
28	Munken	YK	a-	k-́	bi-	bj-	Good & Lovegren 2017
29	Ngun	YK	kə-	k-́	bi-	bj-	Good et al. 2011

Table 7: Distribution of noun class prefixes and concord markers of class 8 and the singular class associated with it (i.e., class 7∼12) in the languages of the northern Grassfields. The abbreviation YK stands for Yemne-Kimbi.

Lovegren (2013: 132–137) summarizes two previous proposals for the development of Class 7∼12 and also provides his own. We provide an overview of these analyses here to contrast how the development of Class 7∼12 has been analyzed from a

traditional perspective on language change in comparison to a semiosis layer approach.

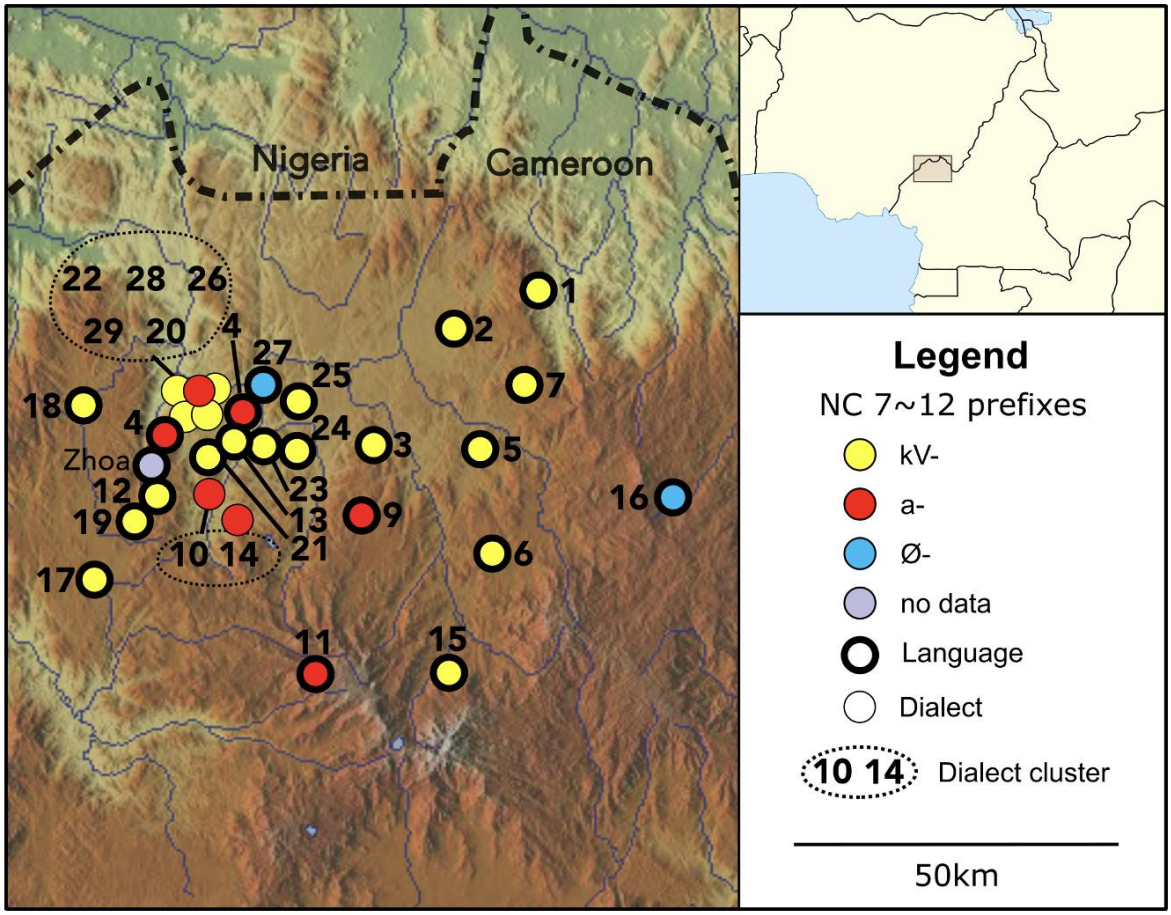

Figure 6: Map showing the distribution of prefixes of noun class 7~12 across languages of the northern Grassfields. Languages are numbered as in Table 7 (Babanki not on map).

As discussed by Lovegren (2013), Hombert (1980) approached the problem by proposing that the *kə-* and *a-* forms of the prefix represent distinct reflexes of Class 12, while, in a variety like Missong, which shows a *ki-* form, the prefix is a reflex of Class 7. He further suggests that an ancestral language had both Class 7 and Class 12, where Class 12 specifically had diminutive function but that this diminutive function was lost with some nouns still appearing with the Class 12 prefix without it having a clear semantic function. The overlap between Class 7 and Class 12 agreement markers would then have led to Class 12 nouns being pluralized with Class 8. As Lovegren (2013) points out, a problem with this proposal is that it requires a given language to have leveled all Class 7 and Class 12 nouns towards either Class 7 or Class 12, rather than having a mixed prefixal pattern. While it is perhaps plausible that some

languages would have uniformly leveled the prefix one way or another, it would be surprising not to find at least one variety that retained a mixed pattern where some nouns showed a reflex of *ki-* and others a reflex of *ka-*.

Hyman (2005) provides an alternative scenario in his study of comparable patterns in a number of Ring languages (Niger-Congo, Narrow Grassfields). The core of his proposal is that Class 7∼12 nouns should be viewed as historically connected to Class 7 where the Class 7 prefix had developed to have a morphologically complex form *á-ki- where the *á- is a morphological initial vowel that appears on nouns in some contexts. Hyman (2005: 329) hypothesizes that this vowel was originally used on nominal modifiers but became extended to nouns and replaced the historical Class 7 marker. While Hyman's proposal works in the context of the Ring data that he considers, where the relevant alternation across varieties is that some show an *a-* prefix for historically Class 7 nouns and others show *k*V- prefix, it does not extend naturally to the Yemne-Kimbi situation where there is not only a lack of evidence for an initial vowel of the sort found in Ring but where the contemporary forms across varieties point also to the presence of at least two different *k*-initial prefixes.

Lovegren's (2013) own proposal is comparable to Hombert's (1980) proposal in assuming that the presence of historical Class 7 and Class 12 are needed to account for the patterns found in Yemne-Kimbi languages. He suggests that the leveling towards reflexes of Class 12 in many varieties could have been due to homophony avoidance with plural Class 13, which can appear as a *ki-* prefix in some varieties. However, his proposal is clearly tentative.

One commonality to all three proposals is that they emphasize the role of language-internal processes to account for variation associated with Class 7∼12—i.e., they are instances of what Möhlig (1981: 251) defines as the "unilinear monogenetic model of language history". The proposals of Lovegren (2013) and Hombert (1980) emphasize sound change and analogy as primary explanatory factors. Hyman's (2005) analysis also invokes analogy alongside the reconstruction of a morpheme that was not originally part of the noun class system but became integrated within it. None of these analyses consider the possible role of language contact. They also cannot fully account for all of the observed patterns which are resistant to an account purely in terms of traditional approaches to language change.

In the rest of this section, we will focus specifically on the fact that, among Mungbam varieties, only Munken generally shows *a-* as the prefix on nouns for Class 7∼12. We start with the assumption that the presence of the *a-* marker in Munken

represents an innovation in comparison to the other Mungbam varieties, in particular because a *ki-* marker is found in the Missong variety of Mungbam that is most distinct from all the others, which strongly suggests that the *kV-* markers represent a shared retention rather than a subgroup-specific innovation.

Since an account based on regular sound change does not appear to be well motivated for a Class 7∼12 alternation, as discussed above, we can then consider the possibility of some kind of borrowing or related type of contact-induced change. If we look at Figure 6, which shows the spatial distribution of the data shown in Table 7, we can see some potential candidate donor languages. In Lower Fungom, Munken is not the only lect in which the singular of Noun Class 8 plurals is prefixed with *a-*, as this is also seen in Naki (naki1238; Niger-Congo, Beboid). In addition, relatively close to Lower Fungom to the south, we find four Central Ring languages that have *a-* instead of the most common *kV-*: Bum (bumm1238; Niger-Congo, Narrow Grassfields), Kom (komc1235; Niger-Congo, Narrow Grassfields), Fungom (fung1247; Niger-Congo, Narrow Grassfields), and Mmen (mmen1238; Niger-Congo, Narrow Grassfields).[9] Should we consider the hypothesis that Munken has borrowed the 7∼12 noun class prefix *a-* from one of these languages? If so, how can contact-induced change be so selective and what was the precise process through which it was borrowed? Is there anything in the history of these communities that might suggest that such a hypothesis is in fact tenable? To answer these questions, we first present information on the ethnographic features of Lower Fungom's communities, as well as their history, in the next section.

5.4. Ethnographic and historical considerations

Available ethnographic, archival, and archaeological evidence for Lower Fungom and its immediate surroundings (e.g., Chilver & Kaberry 1968, Di Carlo 2011, Di Carlo & Pizziolo 2012) indicates that social formation dynamics in Lower Fungom largely reflect the internal African frontier model (see Section 4). Nearly all of today's village communities are either the outcome of incorporation that took place locally between groups of firstcomers and newcomers (e.g., Biya, Munken, Missong) or have settled in Lower Fungom as a consequence of earlier splits from larger communities (e.g.,

[9] For the sake of simplicity, in Table 7 we have generalized the use of the term "language" to refer to any named language regardless of its status. As is shown in Figure 5, though, Fungom is considered as a variety of Mmen.

Koshin, Kung, and the Naki-speaking Mashi).[10] Oral traditions reporting individuals or entire families being incorporated in a larger group are commonly encountered in all the villages. Data from genealogies, toponymy (see e.g., Di Carlo & Pizziolo 2012), and the existence of strong relationships between individual kin groups settled in different villages further contribute to view this area as one of past and present—at least until 2016 (see fn. 4)—intense cross-village contacts, flow of individuals and families, and incorporation of outsiders.

Ideological pressures for linguistic singularity have also been clearly documented as they emerge at the level of both explicit and implicit ideologies (see Pakendorf et al. 2021: 3–5). Regarding explicit ideologies, a one-to-one correspondence between *village-chiefdoms* and *languages* surfaces in metalinguistic remarks stressing that only a group that is associated with a distinctive speech form can aspire to political independence (see, e.g., Di Carlo & Good 2014). With respect to implicit ideologies, analyses of spontaneous multilingual language use have shown that, in Lower Fungom, switching between local lects during one and the same interaction is a rare event and, when it is observed, it co-occurs with significant changes in the situational context such as the arrival of a new interactant or a disagreement of some kind (see, e.g., Ojong Diba 2019, Di Carlo et al. 2020).

All the communities of the area show broadly similar cultural patterns otherwise found in the Grassfields. In an attempt to capture the cultural diversity found in the area Di Carlo (2011) proposed the adoption of a heuristic Lower Fungom "canon" meant to measure diversity along dimensions such as settlement patterns, social organization, attributes of village chiefs, and names and key features of village-based secret associations. With the exception of Missong, the Mungbam-speaking villages all align quite closely with the Lower Fungom canon and are culturally very similar to each other.

One of the few features breaking this Mungbam unity is the name of one of the village-based secret associations with mainly ritual functions. See Table 8 for relevant data. In Munken, this is called *ntələ*, which is unknown to the other Mungbam-speaking villages and, by contrast, finds its closest analogs in Fang (*ntol*) (fang1248;

[10] The only exception seems to be Fang, which is reported to have been founded by a community of fugitives seeking to escape from the control of other, neighboring groups (Di Carlo 2011, Mve et al. 2019). It is hard to say, however, if this community was actually closed off enough to outside influence to actually escape the processes of incorporation of outside groups that pervade the whole of the Grassfields.

Niger-Congo, Yemne-Kimbi), Koshin (*nti*) (kosh1246; Niger-Congo; Yemne-Kimbi), and Kung (*ntul*), none of which is a Mungbam-speaking village. Interestingly, the form *ntələ* most closely resembles forms referring to very similar social institutions found in larger and highly centralized chiefdoms located to the south of Lower Fungom, i.e., Bum *ntul* (Chilver 1993: 8–9 June 1960) and Kom *ntul* (Nkwi 1976: 32 and Chilver & Kaberry 1968: 85), as well as in the small chiefdom of Fungom, where the form *ntələ* is found (see Chilver & Kaberry 1968: 92–93). The languages associated with these chiefdoms—i.e., Bum, Kom, and the Fungom variety of Mmen—are all Central Ring languages.

Village (Language)	**Secret associations with mainly political functions**	**Secret associations with mainly ritual functions**	**Inner circles**
Abar (Mungbam)	əkpwinan	eko	itshung
Biya (Mungbam)	əkponənang	eko	itshung, kwifantɔ
Missong (Mungbam)	olam / nlyam	olam, eko	itsang
Munken (Mungbam)	?	ntələ, ikwæ	itshung, ube
Ngun (Mungbam)	əkponənə	ikwæ	?
Ajumbu	ntshuin	ntshuin	?
Buu	kə (?)	kə	tzang, ntənəyən
Fang	kwifon	ntol, təmì	təm (?)
Koshin	kwifon	nti̩	?
Kung	kwifon	ntul, fəbafə	?
Mashi	ntshu	ntshu	?
Mufu (Mufu-Mundabli)	ji (?)	ntshu	?
Mundabli (Mufu-Mundabli)	kwal (?)	ntshu	?
Bum	kwifon	ntul	chum, ?
Fungom	kwifon	ntələ	?
Kom	kwifoyn	ntul	nggvu, kwifoyn ntu'u

Table 8: Distribution and names of the higher male secret associations in Lower Fungom villages and in the three nearest centralized chiefdoms—i.e., Bum, Fungom, and Kom (table updated from Di Carlo 2011: 69). Mungbam-speaking villages are bolded.

Limiting ourselves again to the case of Munken, which is our main focus in the linguistic analysis of the development of class 7~12, oral traditions report that the

founders of the village formed a group that originally split from Tabenken, a chiefdom located some 50 kilometers as the crow flies to the east where Limbum (limb1268; Niger-Congo, Narrow Grassfields) is spoken (Fransen 1995). Oral traditions also report that those who later founded Munken took a southern route to get from Tabenken to Lower Fungom and that Munken grew through unions with local women, mainly from Abar and Ngun. Based on this evidence, Di Carlo (2011: 86) concluded that "at some time in the past Munken must have had important relations, though of an unknown kind, with groups settled generally to the south, probably outside of Lower Fungom."

Having presented this ethnographic and historical overview, in Section 5.5, we provide a semiosis layer change analysis of the development of Class 7∼12 in Munken.

5.5. Account for the development of Class 7∼12 in Munken

Up to this point, we have seen how language-internal reconstructions of the development of Class 7∼12 in Mungbam proposed by Hombert (1980) and Lovegren (2013), as well as Hyman's (2005) hypothesis of *a-* as a pre-prefix to account for this form in other languages of the area, are associated with a number of unresolved issues. At the same time, the overall picture outlined just above in Section 5.4 suggests that Munken's founders had important relations with groups settled to the south of its present location, where it is likely that Central Ring languages were spoken at the time (as they are today). If we add the fact that Munken was founded about one century before the arrival of Naki speakers in the area and that there is no evidence indicating significant relationships between the village of Munken and the Naki-speaking villages of Mashi and Mekaf (Di Carlo 2011, Di Carlo & Pizziolo 2012), then the most initially straightforward hypothesis for the development of Class 7∼12 prefix *a-* in Munken, under standard approaches to language change, might be to suggest that it was borrowed from some Central Ring language. However, we believe there are a number of reasons to reject this hypothesis on linguistic grounds.

In order to make our argument clearer, we should clarify different potential routes for the *a-* prefix to have entered Munken, as summarized in (2), building on terminology developed in Seifart (2015) for the first two scenarios, which we take as representative of the standard historical approach to patterns of the kind seen in Munken, along with our own proposal in the third scenario.

(2)

a. **Indirect borrowing:** The prefix would have entered Munken via borrowing of whole words from some Central Ring variety (or varieties) and then have been extended to all Class 7∼12 nouns. This scenario would additionally need to assume that these nouns were assigned to Class 7∼12 in terms of agreement as well.
b. **Direct borrowing:** The prefix would have been directly borrowed from a Central Ring variety into Munken via speakers with knowledge of the grammars of both languages. This scenario would additionally need to assume that the borrowing resulted in the replacement of the prefix earlier found on Class 7∼12 nouns with this new prefixal form in a way that ultimately impacted all Class 7∼12 nouns.
c. **Semiosis layer change:** Munken was founded by a diverse community. Within the feature pool that linguistically co-occurred with this demographic diversity, there were also (at least) two variant forms for coding noun class on nouns, neither of which had strong semantic associations and which appeared, in different varieties, on stems with similar shapes and meanings. As a response to pressures for linguistic singularity, the variant that ensured the highest distinctiveness from neighboring lects was selected.

Both (2a) and (2b) can be straightforwardly understood in terms of contemporary theory on contact-induced affixal change but are disconnected from the sociolinguistic and ideological specificities of the relevant speech communities as discussed in Section 5.5. Scenario (2c), by contrast, gives precedence to extralinguistic evidence that is specific to the relevant communities but proposes a teleological mechanism that is outside of the scope of typical approaches to contact-induced change in the domain of affix borrowing. All three proposals must therefore be considered speculative to some extent, though in different directions, which is why none of them can be immediately dismissed without further consideration.

There are two main reasons why we think that scenarios (2a) and (2b) above are unlikely. In the case of (2a), while it would not be unreasonable to view borrowings as a possible route through which a new prefix could enter a language, for the prefix to not only enter the language but also be extended systematically to all nouns in the noun class with the most members in the language would be a very unusual change.

In a dataset of around 500 nouns from Munken, for example, about one third were assigned to this Class 7~12/8, one fifth to the Class 1/2, with the remaining 50% distributed over five other class pairings showing a singular/plural distinction and the two unpaired noun classes (6a and 14) (Tschonghongei 2022, see Figure 7).[11] If a process like the one outlined in (2a) were to have taken place, we would expect at least some nouns in Munken to retain the earlier form of prefix. The scenario in (2b) is associated with the same problem. While direct borrowing of an affix in a highly multilingual setting like Lower Fungom is plausible, the complete replacement of the original prefixal coding on nouns still cannot be readily accounted for under this scenario. Furthermore, both these hypotheses are problematic for another reason. A comparison of about 100 core vocabulary items from several Central Ring languages (Hyman no date) with their equivalents in Munken does not seem to yield a single clear case of lexical borrowing, and it would be difficult to justify that contact would materialize in one isolated inflectional morpheme of the most populous noun class without also affecting at least part of the basic vocabulary.

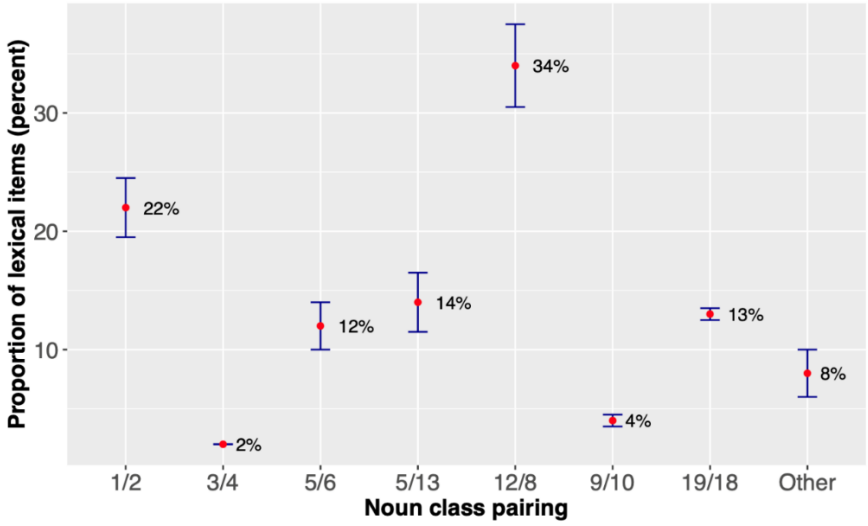

Figure 7. Distribution of the proportion of nominal concepts across singular/plural class pairings in two speakers of Munken (entire wordlist n = 612, speaker 1 = 564 data points, speaker 2 = 333 data points; the two speakers are not identified in the chart as its goal is to provide information on the overall patterns of noun class membership and a rough representation of individual-based variation). Each red dot represents the average value for the distribution of singular/plural class pairing across the two speakers. The percentage refers to the proportion of lexical items that are found in that class pairing out of the total number of lexical items considered. The lines around the points the range of percentages across the two speakers regarding the percentage of lexical items in each class.

[11] Figure 7 was created using the ggplot2 R package (Wickham 2016).

In fact, the latter point suggests a completely different interpretation. Due to the large number of nouns assigned to the Class 7∼12/8 pairing, nouns in these classes are likely to occur frequently in discourse, which means that any indices associated with this gender—i.e., singular and plural class prefixes and their corresponding agreement markers—are also very likely to occur with a frequency in discourse that is higher than those of any other class pairing. This claim finds further support in the fact that membership in the Class 7∼12/8 pairing is semantically unconstrained—nouns in this class have human, animal, and inanimate referents—unlike pairings like Class 1/2, Class 9/10, and Class 19/18 which are almost entirely composed of nouns referring to humans, animals, and diminutives respectively. From a teleological point of view, this makes the coding of Class 7∼12/8 a strong candidate for creating and maintaining linguistic distinctiveness. Within the framework of our semiosis layer model (Section 3.2.3), this means that a prefix with form *a-* in the Mungbam context has high neighbor-opposition potential, can be acquired straightforwardly, because the relevant forms are semantically and structurally congruent (in this case simply being two noun class prefixes, one with form *kV-* and the other with form *a-*), and is minimally disruptive because, on top of being congruent, these are each indices of a semantically unconstrained noun class.

Given this, what we propose is that the Class 7∼12 pattern, and, in particular, the presence of the *a-* form in Munken, is not due to well-known processes of linguistic change such as regular sound change, analogy, or borrowing, but, rather, is the result of semiosis layer change. Specifically, during the creation of the sociopolitical unit that would become the village of Munken, an individual, a group of individuals, with knowledge of other languages that used an *a-* prefix for the equivalent class in other languages engaged in a kind of linguistic "micro-engineering" to replace a *kV-* prefix on all nouns in Class 7∼12 with an *a-* prefix, without otherwise altering the noun class system. This would seem to be in line with what Warnier (1980: 842) identified as a general pattern in the Grassfields where "des chefferies crées par scission d'une autre chefferie ont dévéloppé, en quelques générations, des différences linguistiques telles qu'elles permettent d'identifier immédiatement un locuteur [the chiefdoms created by splitting off from another chiefdom have developed, in few generations, linguistic differences that allow a speaker to be immediately identified; translation by the authors]".

One thing this analysis leaves open is what the original source of the *a-* variant was. On the basis of the data that we have available to us, we have no definite answer

for this. However, in a society characterized by high degrees of individual-level multilingualism, there are many possible ways for variation to enter the semiosis layer. For example, a regular sound change in one language could produce a morphological form that is selected for in a different language, or analogical leveling in one language could result in a morphological pattern which is only partly adopted into another language. As is the case with *wanderwörter* (see Blench 2008 in an African context), this may be a situation where there is evidence for borrowing of a form even in the absence of a specific source for it.

In the next section, we look at another domain of grammar in the languages of Lower Fungom, namely tense-aspect marking. In this case, we consider the overall structure of the systems found across languages of the region and argue that accounting for the observed patterns also requires an appeal to neighbor-bias change and the semiosis layer.

6. Tense-aspect marking in Lower Fungom

6.1. Overall structure of Lower Fungom tense and aspect systems

In order to provide another example of linguistic variation which we think can be usefully examined from the perspective of a model of language change based on semiosis layers, in this section, we will consider the encoding of tense and aspect in the verbal systems of languages of Lower Fungom, with a particular focus on the referential Yemne-Kimbi group. Like other languages of the Grassfields, Yemne-Kimbi languages have relatively complex tense-aspect systems, in particular due to the presence of remoteness distinctions in the past and future tenses. For the discussion of this section, we build, in particular, on the work of Botne (2021), who synthesized the information available in a number of descriptive works on Yemne-Kimbi languages and incorporated the data into a general framework for modeling tense and aspect systems with remoteness distinctions.[12] While the grammatical subsystem being examined in this section is functionally quite distinct from noun class marking, the historical issues raised by the observed variation in the encoding of tense and aspect in these languages are quite similar. The formal encoding of tense–aspect

[12] The tense-aspect system of one Yemne-Kimbi language, Fang, is not sufficiently well-described to be discussed in this section. The same is also true for the Mufu variety, whose most closely related variety is Mundabli.

categories is not amenable to straightforward interpretations in terms of inheritance or simple patterns of contact, though there is a shared semantic foundation on which the systems are built.

Broadly speaking, tense and aspect are primarily coded in Yemne-Kimbi languages through the use of preverbal markers and tonal inflection on the verb along with other kinds of morphological marking such as segmental alternations in the verb or postverbal markers. Relevant examples, drawn from Voll's (2017) description of Mundabli are provided in (3a) and (3b). In the tense-aspect data presented in this section, the glossing abbreviations P0, P1, P2, and P3 are used for past tenses at differing degrees of remoteness (with P0 being just after utterance time and P3 being the most distant from utterance time, though not all languages will necessarily encode all possible degrees of remoteness). The abbreviations F1, F2, and F3 are used in the same way for different degrees of remoteness in the future (though see Botne 2021 for a specific way to analyze remoteness distinctions that does not assume that they strictly encode remoteness on a simple linear timeline).

(3) Mundabli (Niger-Congo, Yemne-Kimbi; Voll 2017: 197, 200)

a. *wù* *à* *tʃŭ* *kpɔ́* *wū-dzú* *w-ɔ́* *ŋgɔ̀*
CL1.PVB P2 come(b) CL3/7a.week CL3-other CL3-DET upon
'He arrived last week.'

b. *bɔ́* *kā* *mú* *ʃí* *ā* *bɔ̌*
CL2 F2 take(a) descend(a) COM CL2
'They shall bring them down.'

Table 9 and Table 10 adapt Botne's (2021: 13) summary presentation of tense-aspect marking in Yemne-Kimbi languages. Table 9 presents an overview of past tense marking, and Table 9 presents an overview of present and future tense marking, as well as present progressive aspect. The data in the table is based on the following sources: Ousmanou (2014) for Koshin, Voll (2017) for Mundabli, Ngako Yango (2012) for Buu (buuu1246; Niger-Congo; Yemne-Kimbi), Lovegren (2013) for the five Mungbam varieties (see Section 5.2 for more information on these varieties), and Tschonghongei (2019) for Ajumbu (mbuu1238; Niger-Congo; Yemne-Kimbi). In the table, the symbol V is used to represent the position of the verb. Where relevant, it is additionally indicated if the verb stem in a given construction appears in either an

Imperfective form (IMPV) or Irrealis form (IRR), and, when Botne (2021) indicated an additional tonal feature on a verb, this indicated using a superscript L or H following his presentation. The level of descriptive detail available for Yemne-Kimbi languages varies by language, and further work may demonstrate a need to refine the presentation of some details of these systems, in particular with respect to tonal patterns. However, we do not expect any such refinements to significantly impact the general points being made here.

Botne's (2017: 32) overall assessment of the tense-aspect systems of the Yemne-Kimbi languages is that "the linguistic exponents marking temporal domains and regions vary significantly across the Yemne-Kimbi languages." At the same time, "what is striking, apart from the individual changes, is the convergent development in the organization of the tense/aspect systems to the extent that there is a nearly one-to-one correspondence between forms in all but the most recent arrival to [Lower Fungom], Koshin." An examination of Table 9 and Table 10 reveals some areas of clear similarity both formal and functional across the languages, such as the coding of the Present forms and the Future forms, which do not show an F1 and F2 distinction in most cases. At the same time, in other tenses, while there is clear functional similarity, there is also significant formal variation. Focusing on the Mungbam varieties, in particular, Missong and Abar pattern one way with respect to P2 and P3 forms, with *k*-initial forms, while Ngun and Munken pattern a different way, with *l*-initial forms, and Biya showing a form with *l*, as well, but also with an initial *à* not found in the other varieties.

	Variety	P3	P2	P1	P0
	Koshin	*nə* = *nyā* = V^{H}	*nə́* = ^{L}V	*yə́* = ^{L}V	
	Mundabli	*kə̀* V	*nà*V ~ *à* V	*fə̋* V	Ø V
	Buu		*fə̀* V	*kə̀* V	
Mungbam	Missong	*kà* V_{IRR}	*kà* V	*ká* V	Ø V
	Abar	*kə̀* V_{IRR}	*kə̀* V	*hə́* V	Ø V
	Ngun	*lē* V_{IRR}	*lē* V	*fə̋* V	Ø V
	Munken	*lē* V_{IRR}	*lē* V	*fə̋* V	Ø V
	Biya	*àlə̄* V	*àlə̀* V	*fə̋* ~ *fə̄* V	Ø V
	Ajumbu	*à* V	*á* V	*ǹ* V	Ø V

Table 9: Simple Pasts in Yemne-Kimbi languages.

Variety		Present	Prog	F1	F2
Koshin		Ø ^{L}V	V-*lə̄-lɛ̄*	*kə̄(=lə̄)*=V	*bə́*=*kə̄*=V(-*lɛ́*)
Mundabli		Ø V	*fə̋ ā* N-V	*dɨ̋* V	*kə́* V
Buu		Ø V	V *kə*	*á* V^{H}	
Mungbam	Missong	Ø V_{IMPV}	V_{IMPV} *ɲàŋ*$_{IMPV}$	*á* V	
	Abar	Ø V_{IMPV}	V_{IMPV} *lànɔ*	*á* V	
	Ngun	Ø V_{IMPV}	V_{IMPV} *lan/kə*	*á* V	
	Munken	Ø V_{IMPV}	V *ɲà*$_{IMPV}$	*á* V	
	Biya	Ø V_{IMPV}	V_{IMPV} *ɲì-ɲà*	*á* V	
Ajumbu		Ø V	V *kà*	*ń* V̄	

Table 10: Simple Present and Futures in Yemne-Kimbi languages.

In the P1 forms, Abar and Missong no longer pattern together, but Ngun, Munken, and Biya do, on the whole. Looking outside of Mungbam, the Buu system is only described as having a two-way Past tense distinction, and its system uses similar forms to some Mungbam varieties, but they appear to be flipped with respect to what they encode, with an *f*-initial form for a P2 form and *k*-initial form for a P1 form. The Mundabli forms, again, overlap with forms found in other varieties, but not in any way that results in a clear isogloss. Ajumbu is somewhat different from the other languages in the past tense in the form of its markers, though there are some areas of overlap, such as with Mundabli in P2 and a partial overlap with Biya in P3 and P1.

In the Progressive forms, with the exception of Mundabli, all languages show a postverbal marker coding progressive aspect, and, while there is some formal overlap, there are also some formal differences among all the varieties, with the exception of Ajumbu and Buu, which show some differences in tone, where the Buu postverbal marker's tone is predictable based on its phonological context (Ngako Yango 2013: 99–100).

Notably, the patterns of formal convergence in tense-aspect marking do not overlap with lexical similarities among the varieties, at least on the basis of the most up-to-date analyses of lexical variation among Lower Fungom varieties, as discussed in Good et al. (under review). Within Mungbam, Missong is the unambiguous lexical outlier and does not form any kind of low-level grouping with Abar. Ngun and Biya form a relatively clear unit, as well, and while both are also relatively close to Munken, this is not the same grouping that is implied by the tense-aspect marking. The other varieties are otherwise relatively distant from each other in lexical terms

on the whole, making it hard to detect any obvious mismatches between the tense-aspect systems and the lexical data.

6.2. Interpreting the similarities and differences among the tense-aspect systems

Botne (2021) develops a historical proposal for the development of salient formal aspects of the tense-aspect patterns discussed just above in terms of standard notions of genealogical inheritance and borrowing. His proposal for tense and progressive markers is summarized in Table 11, which is adapted from his original table (Botne 2021: 29).

In Table 11, rows labeled *Common form* are for forms appearing in multiple Yemne-Kimbi languages with no obvious single source. The label *Innovation* is applied to two changes. The first is the development of the progressive marker in Abar, which appears to transparently derive from a verb meaning ‘go’ (Lovegren 2013: 450).

Change	**Particle**		**Recipient**							**Source**
Common form	*á*	FUT	Ngun	Abar					Buu	
Innovation	*lànɔ*	PROG		Abar						
Borrowing	*làn*	PROG	Ngun							(< Abar)
Borrowing	*hấ*	P1		Abar						(< Biya)
Borrowing	*fə̃*	P1	Ngun			Munken				(< Biya)
Borrowing	*fə̃*	P1			Biya					(< Mmen)
Common form	*ɲà*	PROG			Biya	Munken	Missong			
Borrowing	*lē*	P2			Biya	Munken				(< Ngun)
Borrowing	*á*	FUT			Biya	Munken	Missong			(< Ngun, Abar)
Borrowing	*kà*	P2					Missong			(< Abar)
Innovation	*ká*	P1					Missong			
Borrowing	*fấ*	P1						Mundabli		(< Limbum?)
Borrowing	*kə̀*	P3						Mundabli		(< Abar?)
Borrowing	*nà*	P2						Mundabli		(< Koshin ?)

Table 11: Proposed changes using a traditional model of descent and contact (Botne 2021: 29).

The second is the Missong P1 form, which Botne (2021: 18) treats as a Missong-specific extension of a *ka* form to P1 contexts after being borrowed from Abar in P2 and P3 contexts. As indicated in the table, he treats many of the other forms as a result of extensive borrowing across different language pairs, including two donor languages from outside of Lower Fungom, namely Mmen and Limbum.

Some of the proposed borrowing patterns are plausible from a sociolinguistic perspective, such as claims that some Mungbam varieties may have borrowed forms from Abar, the most widely spoken Mungbam variety. Other proposals are less plausible, such as the proposal that Biya *fə̋* is the source of an Abar form *hə́*. Not only does this proposal require sound change to have affected the Abar form, but it is also sociolinguistically problematic given that Biya is associated with a much smaller village than Abar and is not especially socioculturally powerful in the Lower Fungom region. More striking is the proposal that the entire Mundabli past tense marking system is borrowed, especially given that one of the proposed scenarios, involving Mundabli adopting a *nà* marker from Koshin is a poor fit for the social reality that Mundabli and Koshin have historically had an antagonistic relationship. More broadly, Botne's (2021) rests on the rather striking assumption that borrowing of tense and aspect markers within Yemne-Kimbi languages is a common phenomenon even though this runs counter to general observations regarding the fact that functional elements, such as tense markers, are less prone to borrowing than content elements (see, e.g., Tadmor 2009: 60).

In a manner parallel to our analysis of Class 7∼12 patterns in Section 5, we are less interested in critiquing the details of Botne's (2021) analysis than in recognizing the ways in which a semiosis layer approach can provide a more insightful account of the observed patterns than one which is limited to viewing the development of linguistic systems primarily through the lens of genealogical inheritance and borrowing. As is the case with noun class systems, tense and aspect marking in Yemne-Kimbi languages has three key characteristics: (i) there is a common set of functional distinctions encoded across all of the languages of the region, (ii) these distinctions are encoded using markers with broadly similar formal properties, and (iii) the actual sets of formal markers found are drawn from a relatively limited set of patterns that show non-systematic recurrences across languages. The Class 7∼12 case involved only two markers, an *a-* and *kə-*, while the tense and aspect markers discussed here are more varied. However, the same basic patterns remain.

From the perspective of a semiosis layer approach to language change, the explanation for these patterns involves a relatively straightforward extension of the account offered for Class 7∼12 markers in Section 5.5. They share several key features with Class 7∼12 markers. The relevant elements are relatively high frequency items given the nature of tense-aspect marking in Yemne-Kimbi languages, resulting in high neighbor-bias potential. They encode semantic categories that are largely aligned across the varieties, which means that each variety will have a means for expressing them, which will also make it easy to acquire a new variant occupying a slot that speakers have already acquired independently. Finally, their predictable syntactic positioning and phonological structure (e.g., as CV elements) means that replacing them with forms with similar shapes will be minimally disruptive to the overall system. Taken together, these features make tense-aspect markers good candidates for encoding neighbor-bias selection, which is precisely where we expect to see semiosis layer change.

Adopting a semiosis layer approach to the development of tense and aspect marking in Yemne-Kimbi languages allows us to account for the obvious similarities found across the languages without need to propose complex, and largely unsupported, borrowing scenarios such as those presented in Table 11. This is because we do not need to identify any one specific variety as the source for a given set of variants or assume that variation is purely the result of regular internal changes creating new forms which are then transferred across varieties in a neat chronological fashion where such borrowings are seen as discrete and independent events. Rather, we can view the variation as resulting from the availability of a layer of "floating" variants in the local sociolinguistic space which are assembled to create tense-aspect systems which show formal overlap across the group of languages but not in a way that creates clear higher-level divisions. The resulting differences also result in systems where each variety has at least one element that distinguishes it from each other variety while also having forms which overlap with many other varieties.

We realize that we are again replacing a complex and speculative scenario with another admittedly speculative scenario. However, our proposal at least has the advantage of relating linguistic events with speech community events—i.e., situations of increased ideological pressure for linguistic singularity—that existing knowledge on the societies of the Grassfields portrays as the norm in precolonial times. In this sense, it can account for both the observed grammatical patterns while also explaining why they have some properties (e.g., those in line with neighbor-opposition) but not

others (e.g., broader lexical convergence), whereas earlier accounts lack such potential explanatory power. Therefore, while we certainly would not say that the current state of the evidence is consistent only with our account, we believe that, for any competing account to be stronger, it must not only be able to provide a structural linguistic mechanism through which the relevant patterns were produced but also a sociolinguistic account as to why those patterns are found instead of other logical possibilities.

7. Conclusion

We have taken the first steps to model a mechanism of language change, involving semiosis layers and neighbor-bias, which we believe is needed to account for the entirety of the dynamics of change in the small-scale societies of the Cameroonian Grassfields and, most likely, beyond. We are aware that our proposals here may be controversial from the perspective of traditional approaches to historical linguistics, in particular the idea that much more language change in the Grassfields is likely to be consciously directed than previous work has assumed. We also acknowledge that our proposals also are somewhat speculative in nature insofar as the data we have provided does not rule out other pathways of change that would result in the observed patterns. Nevertheless, we think they offer a promising way forward to provide a full, socially embedded, account of the operation of language change in this part of the world.

From a methodological perspective, studying potential instances of semiosis layer change requires data that are not typically available from traditional descriptive resources. For instance, on the structural linguistic side, in order to determine if a change will have high neighbor-bias potential, having data on the frequency of the use of a specific linguistic feature can be crucial. However, this may not always be readily available. Noun class system descriptions, for example, do not always provide detailed information on the proportion and frequency of usage of the nouns that belong to the class, which can be important for assessing whether change in the form of a noun class marker is a candidate for analysis as a semiosis layer change. On the sociolinguistic side, it is important to have information on the patterns of multilingualism found within an area as well as the ways that linguistic difference is linked to local identities. We, therefore, hope that work along the lines of what has

been presented here may stimulate kinds of data collection in highly multilingual areas that have not typically been prioritized.

The analyses presented above also suggest the importance of looking at patterns of language change in forms without significant (or any) change to the semantic distinctions expressed within a linguistic system from a strongly sociolinguistic perspective. The semiosis layer approach suggests that it is precisely these kinds of forms that should be targets for changes intended to construct new social identities mediated, at least in part, through linguistic difference.

With respect to the situation of the Grassfields specifically, we believe the approach presented here can address longstanding problems of historical analysis. Despite the fact that the languages are clearly related on some level, it has proven difficult to assign languages of the region to clear-cut subgroups. We believe that this is likely not due to the fact that insufficient work has been done to find such subgroups. Rather, widespread semiosis layer change would create patterns of variation that simply do not align with the family tree model (see also Schadeberg 2003: 156 for comparable observations for Bantu languages).

More broadly, given that we understand the semiosis layer change to be directly tied to the construction of social identities and to the internal workings of societies, the way that the diverging and overlapping patterns of tense and aspect marking parallel the crisscrossing structures of social alliances in frontier societies (in the sense of Kopytoff 1987, as discussed in Section 4) is striking. This suggests a possible long-term research agenda that looks at the ways that patterns of language change align with abstract social structures, and this may, in turn, allow for a more complete view of language change in small-scale societies, in particular, than has been possible to date.

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Abbreviations

CL*n* = noun class *n*
COM = comitative
DET = determiner
F1 = hodiernal future tense
F2 = post-hodiernal future tense
F3 = remote future tense
FUT = future tense
IMPV = imprfective
IRR = irrealis
P1 = hodiernal past
P2 = pre-hodiernal
P3 = remote past
PROG = progressive aspect
PVB = preverbal
V = verb base
V^{H} = verb base associated with a high tone
V_{IMPV} = imperfective
V_{IRR} = irrealis verb base
^{L}V = verb base associated with a low tone

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CONTACT

pierpaol@buffalo.edu
jcgood@buffalo.edu