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GRAMMATICALIZATION: A POPULATION FACTOR

Enoch O. Aboh

One[1] of the most researched questions in linguistics has to do with how to account for linguistic typological variation, and what this variation teaches us about the evolution of language. The question is old and has to do with the origins of mankind. In the Christian tradition, linguistic variation has its roots in the Tower of Babel:

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

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

Depending on one's religious beliefs one could stop here: God gave us language and variation, but one would be hard pressed on how to account for why the *range of linguistic variation is so narrow, and on how to explain observations* within typology, comparative, or historical linguistics that changes in linguistic patterns (e.g., grammaticalization) appear to follow certain paths.

The scholar of evolutionary linguistics, who might also be an atheist, faces the same questions. Under the assumption that the language capacity emerged as a consequence of "the great leap forward" (Hauser, Chomsky, and Fitch 2002, Chomsky 2005), a genetic mutation that triggered a rewiring of the brain, it must

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[1] I'm grateful to Anne Bannink and Wim Honselaar for their valuable comments on earlier versions of this essay. All remaining errors are mine.

be the case that this mutation happened in a few individuals before spreading through our whole species. This would mean that whatever rudimentary linguistic systems that emerged then were less diverse than modern languages. Once again, one is faced with the question why variation is constrained the way it is and why one finds similar evolutionary processes across time, space, and generation.

The tension could be reduced if it were possible to show that patterns of language use in human communicative settings may affect the language system in the long run in such a way that linguistic entities are subject to specific developments. This has been assumed to be the case in grammaticalization, "generally seen as a process whereby a lexical item, with full referential meaning (i.e., an open-class element), develops grammatical meaning (i.e., it becomes a closed-class element); this is accompanied by a reduction in or loss of phonetic substance, loss of syntactic independence and of lexical (referential) meaning" (Fischer 2009: 2). According to Heine (2003), studies in grammaticalization started in the 18th century and were based on the assumption that grammatical elements, including affixes, did not emerge spontaneously but must have derived from content words. This view was subsequently demonstrated by Givón (1971) in a seminal work in which he concluded on the basis of typological evidence that "if today's bound morphemes are yesterday's lexical words, then today's morphology is yesterday's syntax"(p. 25). This study and much related work on morphosyntactic changes has led to the characterization of grammaticalization as involving the following stages (Heine 2003: 579, but see also Heine and Kuteva 2005):

(1) Mechanisms of grammaticalization
  a. desemanticization (or "bleaching," semantic reduction): loss in meaning content;
  b. extension (or context generalization): use in new contexts;
  c. decategorialization: loss in morphosyntactic properties characteristic of the source forms, including the loss of independent word status (cliticization, affixation);
  d. erosion (or "phonetic reduction"), i.e. loss in phonetic substance.

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

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

The interaction of the mechanisms of grammaticalization in (1) and the different stages in (2) leads to two main observations:

(3)   a. Grammaticalization is a unidirectional process.
        b. Grammaticalization is an independent language-internal process (though recent studies – e.g., Bruyn 1995, Heine and Kuteva 2005 – show that it may be contact-induced as well).

Together, these observations give the impression that grammaticalization represents an explanatory theory of language change (see Fischer 2009 for a critique).

In this essay, I will show that these observations, just as descriptions of grammaticalization as an independent linguistic phenomenon, are misleading. Instead, I argue that what is referred to as grammaticalization actually represents a sequence of distinct synchronic linguistic behaviours within a speech community at a certain point in time. Put together, as is often done in historical linguistic, this succession of independent and arguably unrelated linguistic group behaviours presents us with a neat picture of diachronic change, in a way similar to kaleidoscopic motion. I will further show that grammaticalization as described in the literature does not involve the core linguistic components but can be better understood as a population factor.

    The views I will defend in this essay are not completely new. In her recent chapter in *Pathways of Change*, Fischer (2009) challenges the two observations in (3), arguing that there is no principled reason why grammaticalization as a description of linguistic change should be unidirectional and that the description of the change should not be conceived of as explanation for the change. Below is an extensive

quote from her chapter:

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

However, even if one is prepared to adopt grammaticalization as an explanation for morphosyntactic change, one still has to address the actuation problem: Why does a change start in a language at a given point in time? Why do different learners of different period adopt this change and engage in some form of chain action that leads to the different stages described in (2) or (3)? These questions relate to two levels of analysis which are often collapsed in grammaticalization studies: the speaker and the population.

Approaches to grammaticalization generally focus on the latter, thus ignoring the role of the speakers in the process. In terms of Chomsky's (1986) distinction between E-language and I-language, this would mean that grammaticalization studies focus on the former. One reason for this empirical choice could be that grammaticalization studies are based on historical corpora from which it is difficult to extract individual variation. Another reason could be an idea that has been influential in modern linguistics which assumes that speakers of a community are generally monolingual and that contact-induced changes are exceptional. One can still see the effects of this view in the traditional *stammbaum* trees or family-tree models that are used to explain language diversification and which are commonly found in (typological) text books. In such mono-parental models to language diversification, in which a single ancestor language develops into different dialects, change is mainly assumed to be an independent language-internal process, as is exemplified by the sound laws.

A major drawback of a grammaticalization theory based on E-language is that it does not relate change to acquisition/learnability since the different mechanisms involved in (1) and their related stages in (2) are focussed on the lexical item only, thus suggesting that the observed change is an inherent property of the item that

is dissociated from learning strategies. Once we factor in the learner, we immediately realise that the explanation for change is to be found in what Olga Fischer calls the 'subprocesses' rather than in the collective behaviours displayed by the community of speakers. In order to show this, I will assume Aboh's (2015) view of a multi-language approach to acquisition and change.

In this framework, language acquisition and change are seen as two interdependent processes that arise from the fact that learners of a community are systematically confronted with varied input: not every learner in the community receives exactly the same input. As a result of this variation, learners develop mental grammars that emerge as a recombination of linguistic features that are selected from the inputs to which these learners are exposed. So communities are not homogeneous in terms of their linguistic practices and not all members of a community reach exactly the same competence in all registers/dialects used in the community. These observations are not new. They have been familiar to sociolinguists and dialectologists since the works of William Labov in the sixties, yet they have not been systematically integrated in formal approaches to morphosyntactic changes, and in studies of grammaticalization.2 Indeed, if individual variation is factored in, one immediately realizes that language change occurs at two different levels (as I mentioned previously):

(4) a. at the level of the learner (i.e., the individual learner who recreates the linguistic systems that she is exposed to), either in L1, 2L1 or L2, etc.;

b. at the level of the population, within which certain similar patterns developed by some individual learners may be selected instead of other competing variants; these eventually spread and become the norm within in the community.

At the individual level, change arises as a consequence of acquisition, which leads to the emergence of hybrid grammatical systems (cf. Aboh 2015). This is represented by the schema in (5) inspired by Mufwene's (2001) feature pool hypothesis (see also Ansaldo 2009).

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2 See also Ferdinand de Saussure's *Cours de linguistique générale.*

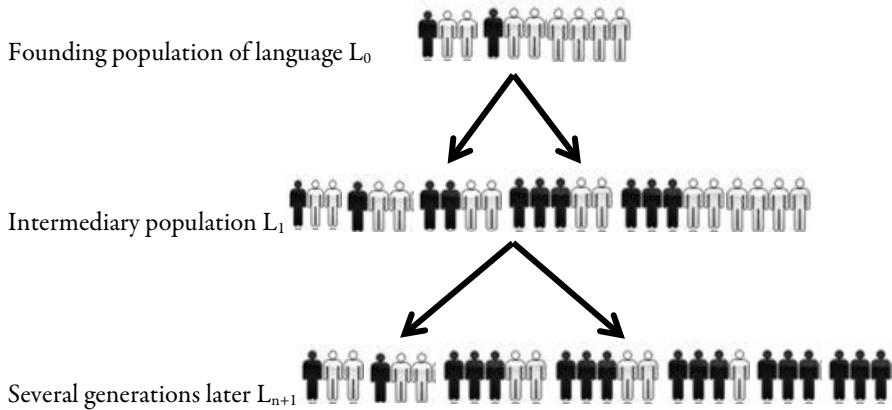(5)   Hypothetical input of a child L1 learner.
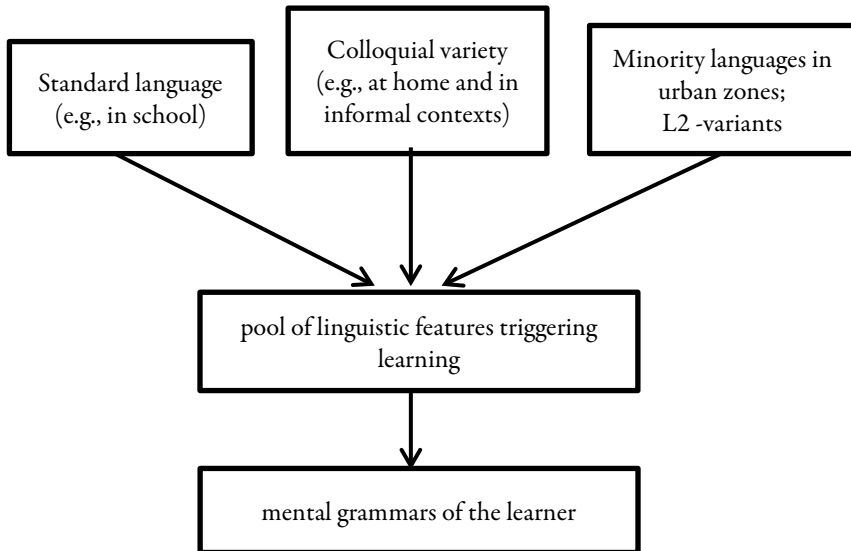
This representation shows that because learners are exposed to varied inputs consisting of different varieties (or registers), successful acquisition cannot consist in reproducing (or cloning) the grammars that generate the input. Likewise, it is unlikely that learners would develop an overarching grammar that generates all the registers that are needed for efficient communication within the learner's community. Instead, it must be the case that learners develop a set of grammars or subgrammars that represent a selection of relevant features of the input that they are exposed to. This ensures that each learner/speaker of a community is unique even though she can put her mental grammars to use to produce outputs that share a family resemblance with outputs of other members of the community (cf. Mufwene 2001, 2002, 2005, 2008, 2014).

   Based on these individual differences, we can describe the evolution of the language of a community in terms of the hypothetical scenario depicted in (6) in which individuals of different colours represent different linguistic variants of different age and sociological backgrounds (cf. Aboh forthcoming for discussion).

(6)   Hypothetical evolution of a community language

Founding population of language L_0

Intermediary population L_1

Several generations later L_{n+1}

As discussed in Aboh (forthcoming), this scenario assumes some minor variation within the founding population: the majority of the community consists of speakers of the white variant, while speakers of the black variant are a minority. In the intermediary population, the black variant has gained some momentum and has spread across almost half of the population. At this point, we can speak of coexistence of two dialects/varieties within this community. The years that follow have been favourable to the black variety which has become dominant and is spoken by a majority of the population.

This scenario shows that the variety spoken by the founding population has progressively been replaced by a competing variant that was already present in the founding population but that spread within the community. At this stage it is important to realise that competition between two varieties need not necessarily result in the complete loss of one variety nor does it mean that the variety that ends up being spoken by a minority will automatically become less prestigious. In many former European colonies, the so-called official languages inherited from the colonial power are spoken by a minority of the population and are highly prestigious, unlike the local variants spoken by the majority of the population (e.g. creoles, English varieties in South East Asia or in Africa, French varieties in Africa; see for discussion Mufwene 2001, 2008, 2014 and Aboh forthcoming).

A straightforward illustration of this scenario is provided by the way in which Estuary English competes with Received Pronunciation in modern English societies. Another example is the rise of *do-support* in English which Han and Kroch (2000) accounts for through an analysis of the clause structure of the English sentence that allows for aspect projection (AspP). According to these authors, the integration of this projection in the changing English clause structure indicates that there are two independent positions, both above and below the aspect head, in which the verb can be realized. The authors further indicate that the rise of do-support appears to correlate with the loss of verb placement in these two positions in which the position above AspP was lost first, followed by the position below AspP. Another interesting recent development, discussed in Sienicki (2014), is the grammaticalization of addressive *you guys* in American English from a plural noun mostly referring to a group of men into a plural marker with no gender distinction. This form is in competition with other addressive plurals such as *you all* and its variants. Students of creoles will remember the development of the number marker *bann* (derived from French *bande* 'group') in Mauritian creole, which together with the American English example, shows that lexical elements or phrasal expressions meaning 'group' may be selected by speakers to encode plurality. Yet, in these cases, such developments happen in contexts where the new variant competes with other existing alternatives, and it is the selection of these variants by a larger number of speakers that is subsequently analyzed in terms of grammaticalization. In the case of *you guys* the spread of American English across the world seems to be beneficial: an increasing number of L2 speakers adopt it, instead of *you all*, *y'all*, *ya'll* or other possible variants.

This discussion shows that diachronic language changes must first be understood as caused by changes in the population of speakers rather than as independent linguistic changes in the strict sense.

If (E)-languages 'change' because of changes in population, then I am led to conclude that studies on grammaticalization are insightful because they inform us about changes that might have occurred within a population of speakers, which led to the diffusion of a variant within that population, at the expense of other

existing variants.[3] In this perspective, grammaticalization studies should rather inform us about the different competing variants available in a community at a particular point in time-and possibly the variants that are likely to be retained in a situation of competition and selection – rather than about the presumed unidirectionality of a postulated change. These observations are compatible with Olga Fischer's view that there should in principle be no direction for 'grammaticalization'. If we had focused more on these competing alternatives, we would have noticed other possible paths of grammaticalization: other possible choices made by populations. As Fischer (2009: 153) puts it:

> So the similarities in known cases of grammaticalisation may have led to an overemphasis on a common core, and through that the idea may have arisen that grammaticalisation is an explanatory parameter in itself. To my mind it is the subprocesses that *explain* the change. I agree with linguists such as Lightfoot (1979, 1991, 1999) and Joseph (1992) that, logically, diachronic processes cannot exist because diachronic grammars do not exist. Each speaker makes up his own grammar afresh on the basis of data surrounding him, and on the basis of his general cognitive abilities or strategies (or, so one wishes, on the basis of some innate Language Acquisition Device). So why should a grammaticalisation process necessarily run from a to b, to c etc.? Why should there be unidirectionality?

While I agree with Fischer, the question arises how to explain the systematic patterns of change observed in the literature. Returning to the case of *you guys* in American English and *bann* in Mauritian creole, how can we account for the fact that in both cases a nominal expression denoting a group develops into a number marker?

To answer this question, we will return to the notion of recombination that has been introduced previously. In terms of Aboh (2015) recombination targets lexical and grammatical items and can be described as follows:

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3 Note that a change within the population need not necessarily mean a change in ethnicity, but rather that speakers select one variant over another.

(7)   Lexical/grammatical item

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              ┌─────────────────────────────────┐
              │    Lexical/grammatical item     │
              └─────────────────────────────────┘
                   /            |            \
  ┌──────────────┐  ┌────────────────────┐  ┌──────────────┐
  │  Phonology   │  │   Morphosyntax     │  │  Semantics   │
  ├──────────────┤  ├────────────────────┤  ├──────────────┤
  │    Rules     │  │ Rules underlying   │  │    Rules     │
  │  underlying  │  │ distributive       │  │  underlying  │
  │ pronunciation│  │ properties         │  │interpretation│
  │              │  │ in clauses         │  │              │
  └──────────────┘  └────────────────────┘  └──────────────┘
```
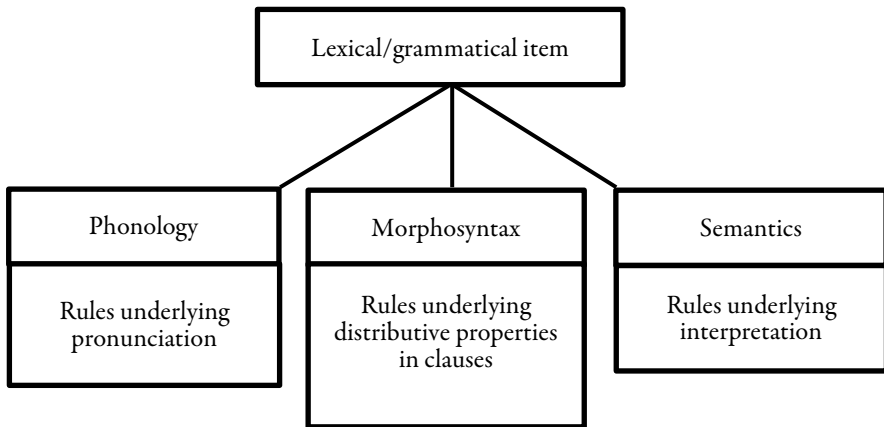
In terms of this description, a lexical/grammatical item consists of three components minimally: phonology involving rules regulating pronunciation, morphosyntax dealing with rules regulating distributive properties, and semantics including rules underlying interpretation. Given this description, acquiring a language involves discovering the abstract properties that are associated with these components of lexical items. I mentioned previously that learners of all languages live in a multi-language environment because the input they are exposed to contains linguistic features of different registers, dialects and maybe languages. During acquisition, learners select relevant features from the input they receive and recombine them into new lexical/grammatical items as part of their mental grammars. This is the source of language change at the individual level and may affect any component of the lexical/grammatical item, depending on the inputs that the learner is exposed to and the learning hypotheses that she entertained. Recombination is the source of variation within and across individuals. Yet, the process appears to be constrained by two main factors: UG-related constraints and general learning biases.[4]

UG-based constraints are structural and may turn out to be inbuilt. Indeed, despite the numerous individual variations commonly discussed in sociolinguistic

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[4] Such learning biases may be favored by syntactic factors specific to the language the learner is exposed to or, as suggested by Fischer (2009: 163), by 'universal iconic constraints.'

literature, apparent cross-linguistic universals suggest that learners do not vary on all aspects of languages and that not all aspects of learning are subject to infinite variation. It is therefore conceivable that certain areas of language are immune to variation: potential competing alternatives that learners could create through re-analysis are systematically excluded. (Maybe such alternative variants are unlearn-able and cannot be easily replicated by other members of the community). A good example of this could be the cross-linguistic expression of tense, mood, and aspect (TMA). Studies on language acquisition have shown that verbal inflectional mor-phology is particularly vulnerable in contexts of second language acquisition. The literature on creole languages, for instance, reports that these languages did not re-tain the conjugation forms or agreement patterns of their Romance/Germanic lexifiers or Niger Congo substrates, but developed TMA expressions that are rigidly ordered according to the format: Tense>Mood>Aspect>V. Various explanations have been proposed to account for this fact. Muysken (1981) argues that this format derives from a universal category *Aux* whose internal organization and interpretation are regulated by an unmarked universal semantic principle: tense scopes over mood which scopes over aspect. Therefore, the rigid sequencing ob-served derives from universal semantic scope relations internal to every learner. Alternatively, Bickerton (1981, 1988) proposes that this rigid ordering is deter-mined by the Language Bioprogram, a specific human language device. While this debate continues to date, cross-linguistic studies by e.g. Foley and Van Valin (1984), Bybee (1985), Hengeveld (1989) and Cinque (1999) indicate that the rigid pat-tern described in creoles and schematized in (8), is also common in non-creole languages, regardless of morphological type. One could easily imagine alternative combinations of this sequencing underlying language variation, yet this seems not to be the case. Therefore the general schema in (8) is a language universal that can be assumed to be internal to leaners. In this description, the terms tense, mood, and aspect stand for more fine-grained domains.

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

This format is partially exemplified by example (9) from Hidatsa (Siouan), where the postverbal TMA particles in boldface display the mirror image of their English

equivalents in preverbal position.

(9) Wíra i apaari **ki**   **stao**   **ski**
    tree   it grow INCHOATIVE REMOTE.PAST CERTAINTY.OF.SPEAKER
    'The tree **must have begun** to grow a long time ago.'
    [Hidatsa, Hengeveld 2006: 53]

If we adopt Baker's (1985) mirror principle – i.e. the ordering of morphemes in the morphological component mimics their licensing order in the syntactic component – we are led to conclude that the different orderings in Hidatsa and English are manifestations of a unique underlying structure constrained by the semantic hierarchy in (8) (Cinque 1999). This is partially shown by the sentence in (10), reported by Givón and cited in Cinque (1999:56). In this example from Ute, the verb root precedes the habitual morpheme, which precedes the tense morpheme, which in turn precedes the evidential marker. In this agglutinating language, the ordering is similar to that of Hidatsa (isolating), but mirrors that of English in (9).

(10) Tukua-tuka-na-puga-vaaci.   (Ute, Uto-Aztecan)
     meat-eat-HAB-PAST-EVID (hearsay)
     '(She) used to eat meat (so I hear).'

In his seminal book, Cinque (1999) shows that the ordering of TMA markers can be detected cross-linguistically if we pair them with their matching adverbs. Cinque (1999: 106) concludes that the clausal spine includes the rich hierarchy in (11).

(11) *The universal hierarchy of clausal functional projections (a second approximation)*
     [*frankly* Mood$_{speech\ act}$ [*fortunately* Mood$_{evaluatıve}$ [*allegedly* Mood$_{evidential}$ [*probably*
     Mod$_{epistemic}$ [*once* T(Past) [*then* T(Future) [*perhaps* Mood$_{irrealis}$ [*necessarily* Mod$_{necessity}$
     [*possibly* Mod$_{possibility}$ [*usually* Asp$_{habitual}$ [*again* Asp$_{repetitive(I)}$ [*often* Asp$_{frequentative(I)}$
     [*intentionally* Mod$_{volitional}$ [*quickly* Asp$_{celerative(I)}$ [*already* T(Anterior) [*no longer*
     Asp$_{terminative}$ [*still* Asp$_{continuative}$ [*always* Asp$_{perfect(?)}$ [*just* Asp$_{retrospective}$ [*soon* Asp$_{proximative}$
     [*briefly* Asp$_{durative}$ [*characteristically(?)* Asp$_{generic/progressive}$ [*almost* Asp$_{prospective}$
     [*completely* Asp$_{SgCompletive(I)}$ [*tutto* AspP1$_{Completive}$ [*well* Voice [*fast/early* Asp$_{celerative(II)}$
     [*again* Asp$_{repetitive(II)}$ [*often* Asp$_{frequentative(II)}$ [*completely* Asp$_{SgCompletive(II)}$

Whether every language has such a rich inflectional system responsible for the

ordering of TMA markers is an empirical question, but the relevant observation here is that this systematic mapping of adverbs and TMA markers constrains possible reanalyses of data from learners of certain semantic classes of adverbs or verbs into corresponding grammatical TMA markers. Accordingly, the fact that individual learners of a population may reanalyse the verb 'stay' into a marker of frequentative, repetitive, or habitual aspect is constrained by the semantic hierarchy in (11). The same is true for the reanalysis of the verb 'finish' or the quantifier 'all' into a marker of completive aspect.

The three cases just mentioned emerged in Gbe languages. In Gungbe, for instance, the verb *nɔ̀* 'stay' also serves as a mark of habitual aspect as indicated by the sentences in (12). Example (12a) illustrates the verbal usage, compared to example (12b) which instantiates the habitual marker. Example (12c) shows that both forms can co-occur.

(12) a. Àdàmá   nɔ̀   mí   dè.
          Adama   stay   1PL   place
          'Adama stayed at our place.'
      b. Àdàmá   nɔ̀   wà   àzɔ́n   mí   dè.
          Adama   HAB   do   work 1PL   place
          'Adama used to work at our place.'
      c. Àdàmá   nɔ̀   nɔ̀   mí   dè.
          Adama   HAB   stay   1PL   place
          'Adama used to stay at our place.'

In Fongbe, a closely related language, the verbs *fó* and *vɔ̀* can be used lexically, as shown in (13) (Da Cruz 1995: 362).

(13) a. Kɔ̀kú   fó   àzɔ̌   ɔ́.
          Koku   finish work   DET
          'Koku finished the work.'
      b. Kɔ̀kú   vɔ̀   mɔ́lìnkún   ɔ́.
          Koku   finish rice   DET
          'Koku finished the (plate of) rice.'

These verbs can also be used as completive markers as indicated in (14).

(14) a. Kòkú wà àzǒ   ɔ́   fó.
          Koku do work DET finish
          'Koku finished doing the work.'
      b. Kòkú ɖù   mɔ́lìnkún   ɔ́   vò
          Koku eat   rice   DET finish
          'Koku finished eating the rice.'

While Gungbe displays the constructions in (13) similarly to Fongbe, it is interesting to note that the Gungbe equivalents of the Fongbe examples in (14) involve the quantifier *kpó* roughly translated by *all*.

(15) a. Kòkú wà àzɔ́n   lɔ́   kpó.
          Koku do work DET all
          'Koku finished doing the work.'
      b. Kòkú ɖù lésì   lɔ́   kpó.
          Koku eat rice DET all
          'Koku finished eating the rice.'

Gungbe and Fongbe illustrate in a straightforward manner how learning biases determined by the hierarchy in (11) may lead to the emergence of grammatical categories. Note that reanalysis in these cases does not involve the mechanisms of grammaticalization evoked in (1) and (2) as is often presumed in the literature. My claim is that such learning biases affect individual learning, thus determining reanalyses, i.e. subtle grammatical changes on the individual level. Reanalysis thus described appears to target the contiguous semantic notions in (11). Such changes at the individual level may or may not spread across the population depending on, for instance, socio-historic, economic or geopolitical factors (see for instance, Edmond and Faarlund's 2014 book on the emergence of Modern English). The more learners of a certain population engage in the same learning biases, the greater the chance that their reanalyses will spread across the population, thus leading to language change at the population level. In terms of this analysis, the notion of grammaticalization must be seen as the cumulative effect of similar individual reanalyses.

Understood this way (i.e., as a population factor) there should in principle be no predefined direction in grammaticalization: we cannot predict what linguistic choices will be made by successive generations of a given population. While the re-

analysis just described determines the semantic change typical of grammaticalization, and answers the actuation question as resulting from semantic universals in the case of TMA markers, changes in forms (e.g., shortening) that sometimes accompany such a process must be understood as a consequence of factors external to learning. For instance, it is reasonable to assume that high frequency of use of a certain reanalysed form, which may result from the spread of this new form in the population, may eventually lead to morphophonological changes such as shortening or reduction. It is worth pointing out, however, that the Gbe examples discussed in (12-15) show that language type might also play a role: in these examples, the grammaticalized forms are morphologically identical to their source.

In conclusion, the view of grammaticalization I have defended in this essay indicates that the phenomenon belongs to "principles not specific to the faculty of language", that is, the third factor as defined by Chomsky (2005: 6). The other two factors are genetic endowment, and experience.

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