

Grammaticalization within and outside of a domain

Zygmunt Frajzyngier

Dept. of Linguistics, University of Colorado

1. The problem and the scope of this study¹

The purpose of this study is to sketch a theory of the grammaticalization of coding means that do not bear any inherent syntactic, semantic, or discourse properties that would make them candidates for coding a grammatical function.

In many languages across various families, formal means that neither inherently nor iconically convey a particular meaning are used as markers of various grammatical categories. Some of these means are tone, stress, linear order, and even the use of individual segments, consonants, or vowels, and in some languages gemination and reduplication. Although some claim that gemination and reduplication carry an iconic meaning

¹ The work on this paper was supported by a grant Nr. 0439940 from the National Science Foundation to Zygmunt Frajzyngier and Erin Shay, and by a Faculty Fellowship from the University of Colorado. Data on Mupun, Hdi, and Wandala were gathered over the period of many years through fieldwork supported at various times by the National Endowment for the Humanities, National Science Foundation, Jane and Charles Butcher Award, and the University of Colorado. I am grateful to Erin Shay for the critical reading of the first draft of this paper and for making many useful suggestions. Critical comments of an anonymous reader of this study forced me to revise a number of statements. I am most grateful for those comments. Sean Allison caught a number of typos and a few infelicities of style. As always, I am grateful to Marian Safran for the editorial work on this paper. Any errors of fact or interpretation remain my own responsibility.

vaguely connected to the notion of plurality, there are other functions of these processes that have no relationship to plurality at all, as amply documented in various Chadic languages (Frajzyngier with Shay 2002; Frajzyngier, Johnston with Edwards 2005). The formal means listed code large parts of many grammatical systems. The research question of the present study is how these formal means, which code a variety of unrelated functions, emerged.

The scope of this paper is confined to the grammaticalization of tone in several Chadic languages. The importance of this choice is that tone is not iconically, symbolically, or in any other way linked with a specific meaning, whether through reference to reality or through some conceptual construct. The evidence for the non-cognitive basis of the grammaticalization of tone is provided by the fact that grammatical categories coded by tone, both within any specific language and across related and unrelated languages, belong to many functional domains. The paper discusses the following grammatical distinctions, all of which are coded solely or partially by tonal distinctions, and all of which result from grammaticalization rather than from reduction of some morphemes, the most frequent explanation of inflectional paradigmatic oppositions:

- a. point of view of the subject versus unspecified point of view in Hausa
- b. perfective versus habitual aspect in Mupun
- c. subject suffixes versus object suffixes in Gidar

- d. affirmative versus negative clauses in Gidar
- e. unmarked tense versus specific past in Wandala
- f. unmarked tense versus specific present in Wandala
- g. locative complement versus direct object marker in Hdi
- h. inherently locative goal versus inherently non-locative goal in Hdi

The study proposes a non-metaphorical explanation for all these distinctions.

2. Traditional approaches to grammaticalization

Ever since the work of Wilhelm von Humboldt (1972), the study of grammaticalization has assumed more or less the same scope and the same cause-effect relationships as far as the choice of sources for grammaticalization have been concerned. The scope has been the emergence of grammatical morphemes from individual lexical items or individual phrases. According to the traditional approach, a lexical item or a phrase is chosen as a source for a grammatical morpheme because the lexical item's semantic properties make a good fit for the grammatical function to be coded. The modern contributors that followed the traditional approach to grammaticalization include Kury_owicz (1965), Samuels (1972), Greenberg

(1978), Lehmann (2002), Heine (Heine et al. 1991; Heine and Kuteva 2002), and many others.

The traditional approach has been supplemented by claims that usage and frequency of use may cause grammaticalization (Hopper 1987; Haspelmath 2004). The traditional approach has had considerable success in that the origin of a large number of grammatical morphemes has been documented, and often explained.

The study of the motivations for grammaticalization has drawn much less attention, and the postulated motivations have never been properly argued for, even with respect to the traditional scope of grammaticalization. Nevertheless, some progress has been made in this domain as well (Frajzyngier with Shay 2003; Frajzyngier 2004).

With all this progress, there remain a large number of coding means whose origin has not been explained either by traditional historical linguistics or by grammaticalization studies. The purpose of the present study is to initiate a discussion about the origin of such markers by proposing a theory to explain the emergence of coding means that do not have inherent semantic properties. The present study aims to supplement rather than replace the existing theory and methodology of grammaticalization.

3. Grammaticalization outside and within a domain: a model

The fundamental question in the proposed approach to grammaticalization is not what the source is of a given grammatical form, but rather what the motivation is for grammaticalization. The speakers' wish to express some semantic or discourse function, the fundamental motivation for speech itself, provides only the necessary starting point for grammaticalization. As this motivation is always present in all languages, it is therefore not a good tool to explain differences in the types and functions of grammatical categories across languages. A more specific and testable motivation is required.

A starting point for every grammaticalization is the grammatical system that exists at any given time for a particular language, with a finite number of coding means that can be combined and recombined, and a finite number of functional domains and sub-domains. The terms 'functional domain' and 'sub-domain' are understood as in Frajzyngier and Mycielski (1998):

- a. A functional domain D is a class of expressions with a certain set of meanings D^* , such that D^* is disjoint with E^* for any domain $E \neq D$ of the same language;
- b. The expressions within domain D are mutually exclusive and are constructed by the set of specific coding means $M^*(D)$;
- c. The expressions within domain D have a specific pragmatic or semantic function in common.

The description of a grammar of a language L should consist of at least three components:

1. a list of functional domains D_1, D_2, \dots , defined in terms of their sets of meanings $(D_1)^*, (D_2)^*, \dots$;
2. alternative descriptions of D_1, D_2, \dots , defined in terms of their coding means $M(D_1), M(D_2), \dots$;
3. the means of construction of expressions composed of expressions belonging to different domains of L.

A functional sub-domain shares with a functional domain the defining feature of the domain, but narrows the scope of the functional domain. Thus, an aspectual system may constitute a functional domain. The perfective aspect may constitute a functional sub-domain.

The functional domains and sub-domains theoretically may be different for different languages, but they may also overlap across related and unrelated languages. This state of the language constitutes a base from which the speaker innovates. When the speaker innovates, he or she does not start with the language as a whole, but rather with a functional sub-domain and even possibly with a particular utterance. A speaker may want to add new information to the utterance or may want to change the value of a functional sub-domain already coded in the utterance. The term 'value of a

functional sub-domain' refers to one of the oppositions that a sub-domain may have. Thus if a form within a sub-domain of tense codes past, changing its value means coding some tense other than past. Any addition of new information to the utterance is subject to the principle of functional transparency, which states that the role of any new element in the utterance must be transparent to the hearer (Frajzyngier and Shay 2003; Frajzyngier 2004). Transparency relates not to the hearer's need to understand the utterance but rather to the hearer's need to understand the role of every element within the functional domains coded in the language. The new additions or the means to code the role of new additions may be drawn from the formal means outside of the utterance. This is the case with aspectual categories in English:

- (1) *10_1_0 <670: and Arthur Wrigley shows me Parfitt who of course had an injury and **was missing** for a time* (London-Lund Corpus)
- (2) *Remains Found of 11-Year-Old Girl Who **Went Missing** 3 Years Ago* (www.foxnews.com/story/0,2933,237500,00.html - Dec 24, 2006)

Most traditional studies of grammaticalization deal with this type of language change. I shall refer to the type of grammaticalization that adds a new element to the utterance as grammaticalization outside the domain.

A change within the domain refers to a change in the value of the functional domains already coded within an utterance. This can be accomplished without the introduction of new coding means but rather through the modification of the coding means already present. If a construction has semantic property X within a certain domain, that may create the motivation for the grammaticalization of a different value within the same domain. The formal means chosen for the different value are based on the formal means within the erstwhile construction.

The formal means chosen for change within the functional domain differ from the formal means chosen for the coding of a new domain in that the former do not have to have any cognitive or referential properties that make them particularly useful for the coding of different values of a given functional domain. Grammaticalization within the domain differs drastically from grammaticalization outside the domain, which usually involves bringing in a construction from outside of the existing construction. In what follows, I first provide the evidence for the existence of this type of grammaticalization and then discuss the far-reaching implications of the proposed model for the properties of language structure; for the theory of language change; and for the theory of grammaticalization. For the present study, I have chosen to discuss the grammaticalization of just one coding means, tone. The reason for choosing tone is that inherently it has no semantic, discourse, or syntactic value. I shall discuss the similar use of word order in another study. The evidence that tone is not associated with

any semantic value is provided by the fact that it can be used to code a variety of unrelated functions, as demonstrated below for several Chadic languages. The use of tone in the coding of unrelated functional domains in unrelated languages would only strengthen the hypothesis in that the same coding means would be used for a larger number of categories.

4. Point of view of the subject versus unspecified point of view in Hausa

Hausa, a West Chadic language spoken in northern Nigeria and in Niger, uses tone as part of the underlying structure of individual lexical items and as a coding means for a variety of grammatical functions. Here, just one functional domain is discussed, where tone is the only coding means used. For a different approach to the tone on Hausa verbs, cf. Newman (2000).

The verbal system of Hausa codes the domain ‘point of view’, which has two values, the default value, not coding any specific point of view, and the point of view of the subject. The point of view of the subject is a functional primitive in that it is not composed of any features coded in the language through other means. The point of view of the subject directs the hearer to interpret the clause as to how the event may, is, or has affected the subject. The subject may be the controller of a predicate that has an object, and yet the event may still be represented from the point of view of the subject. The default point of view (excluding the point of view of the

subject) is coded by the first tone high on the verb. The point of view of the subject is coded by the low tone on the first syllable of the verb, as in Figure 1:

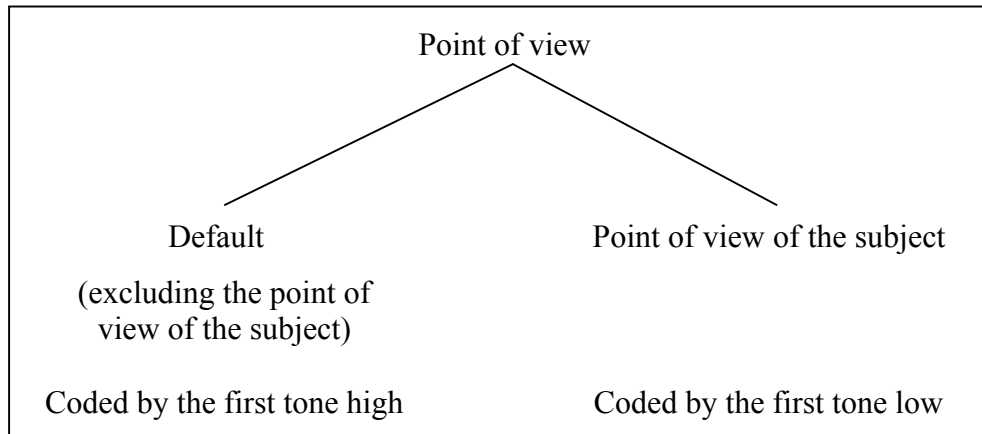


Figure 1. Domains of point of view in Hausa (Frajzyngier and Munkaila 2004: 12)

The high tone of the first syllable of the verb is the default tone, coding no specific point of view, but excluding the point of view of the subject:

(3) *kà* *tsinkèè* *igiyàa*

2M:SBJV snap:gr4² string

‘Snap the string!’ (Newman 2000: 665, the high tone is unmarked)

² The symbol ‘gr’ which stands for ‘grade’, with the following digit from 1 to 7, refers to a traditional classification of Hausa verbal forms labeled ‘grades’, as proposed in Parsons (1960/61) and retained in much of contemporary Hausa linguistic literature.

The low tone on the first syllable of the verb codes the point of view of the subject:

(4) *igiyàṛ̃* *taa* *tsìṅku*

string:DEF:F 3F.PFV snap:gr7

‘The string was snapped.’ (implies that someone has snapped the string, not that the string snapped on its own)

Subjects of verbs coding the point of view of the subject can be controlling or not:

(5) *yaarò* *yaa* *fita*

boy 3M.PFV go.out

‘The boy went out.’

(6) *iskà* *taa* *fita*

air 3F.PFV go.out

‘The air went out.’ (Frajzyngier and Munkaila 2004: 19)

The point of view of the subject is the only point of view possible for many verbs, such as *bùra* ‘ripen’, *rùba* ‘rot, spoil’, *nùka* ‘become ripe by storing’, *nùuna* ‘become ripe, mature’, *tsìra* ‘sprout, germinate’, and *dìga*

‘drip’. For other verbs, there are two possibilities. Given that the high tone is the default tone and that the low tone on the first syllable has a narrower semantic function, the derivation of the verbs with an initial low tone has high-tone verbs as a starting point. This change is achieved not through an association of the low tone with some characteristic of reality but rather through the opposition to the default tone of the verb.

Why the change of the tone from high to low should convey the point of view of the subject rather than any other possible meaning is an open question. A partial answer to this question is provided by comparative data. The opposition ‘no point of view’ versus ‘point of view of the subject’ is coded in Chadic languages from different branches and by different means. One of them is the use of different vowels for the point of view of the subject and the unmarked point of view, as is the case in Hdi (Frajzyngier with Shay 2002).

5. Perfective versus habitual aspect in Mupun

Mupun is a West Chadic language spoken in the Plateau State of Nigeria. The language is SVO, and tenses and aspects are marked by particles preceding the verb. The language has three tones, high, mid, and low. At the time I was working on the grammar of Mupun, I did not investigate the question whether the language or its verbal or nominal paradigm has a

default tone and if so, which tone it is. In my more recent work on Hausa and Wandala, I did investigate this question and found out that, indeed, in Hausa the high tone is the default tone in the verbal system, and in Wandala the low tone is the default tone throughout the language.

In Mupun, the perfective aspect is marked by the low-tone particle *kà*:

(7) a. *yii kà n-se*

yes PFV 1SG-eat

‘yes, I have eaten’

b. *mo kà toy n-jos*

3PL PFV live PREP-Jos

‘they used to live in Jos’ (they are no longer there)

c. *kà n-lay bɛɔ*

PFV 1SG-mount horse

‘I mounted a horse’ (the speaker is no longer on it)

d. *wu kà ji*

3 SG:M PFV come

‘he has come’

The habitual is marked by the high-tone particle *ká*, which in the first person precedes the pronominal subject:

- (8) *ká n-lay brəŋ*
 HAB 1SG-ride horse
 ‘I ride horses’

In the third person, the habitual marker follows the subject pronoun but precedes the verb. Unlike a clause in the perfective, a clause in the habitual aspect cannot be followed by a clause indicating the event has been completed. Thus (9b) cannot follow (9a). In another context, e.g. in isolation, (9b) is perfectly grammatical:

- (9) a. *mo ká se lua əh*
 3PL HAB eat meat goat
 ‘they do eat goat meat’
- b. **nə dʉur*
 3SG end
 ‘It [the meat, or the event] ended’

Since I do not know which tone is the default in Mupun, I cannot determine in which direction the grammaticalization proceeded, from the habitual to the perfective or from the perfective to the habitual. There is,

however, little doubt that the two aspectual markers *kà* and *ká* are related through a grammaticalization process, and that this process was not based on any semantic properties of tone but rather on the opposition of high versus low tone, which resulted in the opposition of the perfective versus the habitual aspect.

In a number of Chadic languages the perfective is indeed coded by the marker *k*, which in some languages precedes the verb and in others follows the verb. The change from the perfective to the habitual, coded through the change of the tone on the marker *kV*, has not been recorded in other languages.

6. Subject suffixes versus object suffixes in Gidar

Gidar is a Central Chadic language spoken in Northern Cameroon. The language has high and low tones. The word order in Gidar is SVO. Object pronouns are suffixed to the verb. Subject pronouns precede the verb. In the inceptive aspect, subject pronouns precede and follow the verb at the same time. Although subject suffixes have the same segmental structure as object suffixes, their tonal structure is different. Object suffixes have the high tone, and subject suffixes have the low tone. This coding system is interesting because there is no semantic or syntactic property of the low tone that it

should be assigned to subject suffixes, and there is nothing inherent about the high tone that it should be assigned to object suffixes:

First-person singular:

- (10) a. *à-vàr-wá-kà*
 3M-hit-1SG-PFV
 ‘he hit me’
- b. *nà-sá-w-kà*
 1SG-stay-1SG-PFV
 ‘I remained’

Third-person singular masculine:

- (11) a. *nà-fdáa-ná-kà*
 1SG-wake.up-3M-PFV
 ‘I woke him up’
- b. *à-mdá-nà-k ...*
 3M-return-3M-PFV
 ‘he returned ...’

Third-person singular feminine:

- (12) a. *à-vàr-tá-kà*
 3M-hit-3F-PFV

‘he hit it’ (small, or a feminine object)’

b. *tà-sá-tà-kà*

3F-stay-3F-PFV

‘she remained’ (Frajzyngier 2008)

At present I cannot determine the potential direction of grammaticalization between subject suffixes and object suffixes. Knowing which tone is the default would have permitted me to determine the directionality. The two types of suffixes belong, however, to the same functional domain of coding the argument of a proposition. Object suffixes code the second argument, and subject suffixes code the first and the only argument of the verb.

7. Affirmative versus negative clauses in Gidar

An additional argument that tone in Gidar does not have any inherent semantic or syntactic properties is provided by the fact that tonal distinctions are involved in the coding of the polarity of the clause. Low-tone subject pronouns are used in indicative affirmative clauses. High-tone subject pronouns are used in negative clauses. The affirmative clause in the perfective aspect has the suffix *kà*. Subject pronouns are prefixed to the verb and have the low tone:

- (13) a. *à-míl-kà*
 3M-return-PFV
 ‘he returned’
- b. *nì-dé-kè*
 1SG-go:VENT-PFV
 ‘I came’
- c. *à-sily-éŋ-kà*
 3M-get.up-PL-PFV
 ‘they got up’
- (14) *kà-vàr-tá-kà*
 2-hit-3F-PFV
 ‘you hit it (F)’

The negative clause is marked by the particle *ɓà* in the clause-final position. Subject pronouns have the high tone:

- (15) a. *ká-vrǎ-t ɓà*
 2P-hit-3F NEG
 ‘you did not hit it’ (high tone from the object pronoun shifted to the verb)
- b. *ká-dà wày ɓà*

2P-cook food NEG

‘you didn’t cook’

c. *kə-dá wày bə̀*

2P-cook:3M food NEG

‘you didn’t cook the food’

d. *kə-mbát bə̀*

2P-go NEG

‘you didn’t go’

With respect to the directionality of grammaticalization, we are on somewhat safer ground here. In all Chadic languages (and in many other languages) the indicative affirmative clause is unmarked, and therefore in comparison to the negative clause it is more basic. Hence, the change can be assumed to be from the low tone in the affirmative to the high tone in the negative. Again, grammaticalization occurred through opposition rather than through some inherent semantic properties of the tone.

Interestingly, negative clauses coding obligation, i.e. prohibitive clauses, with respect to persons other than the first, which are also formed with the clause-final negative marker *bə̀*, have low-tone subject pronouns coding the addressee:

(16) a. *kə-vrə́-t bə̀*

2P-hit-3F NEG

‘do not hit it/her!’

b. *kà-dà wày bà*

2P-cook food NEG

‘do not cook!’ (in general)

c. *kà-d-á wày bà*

2P-cook-3M food NEG

‘do not cook this food!’ (the 3M marker *-á* has to have the high tone)

d. *kà-mbát bà*

2P-leave NEG

‘don’t leave!’

The same structure can be used with respect to the first-person singular:

(17) *nà-dáw mbát bà*

1SG-FUT go NEG

‘I should not go’

The fact that prohibitive forms have the low rather than the high tone on the subject pronoun provides evidence that the high tone is not an

obligatory component of a negative clause but is used to code negation only when it is in contrast with the low tone, as in examples (14) and (15).

8. Unmarked tense versus present in Wandala

Wandala is a Central Chadic language spoken in the Far-North Province of Cameroon and in North-Eastern Nigeria. The pragmatically unmarked verbal clause has the form: Subject pronoun Verb Noun phrase. The noun phrase following the verb may represent either the subject or the object, with the distinction between the two syntactic relations coded on the verb.

Wandala has two tones, low and high. The default tone is low, and the high tone is a coding means for a variety of functions. The evidence for the default status of the low tone and the grammatical function of the high tone is provided by the fact that when two syllables with different tones merge, the high tone remains and the low tone is deleted.

The low tone on subject pronouns preceding the verb is the default and does not code a tense. Clauses with subject pronouns so marked may refer to past- or present-time events. The high tone on subject pronouns codes the specific present or the specific future time reference. The high tone on the verb codes the past tense (all data from Frajzyngier's fieldnotes):

(18) a. *tà ksá gdzà gyálè*

3PL take young girl

‘they chose the girl’

b. *tá ksà gdzà gyálè*

3PL take young girl

‘they are taking/will take the girl’

(19) a. *à màgá trà*

3SG do work

‘he worked’

b. *á màgà trà*

3SG do work

‘he is working/will work’

The hypothesis regarding the emergence of the high tone on subject pronouns as coding the specific present or future is as follows. Within the domain of tense, the low tone on the pronoun is the default; it does not code tense, aspect, or any other category. One of the means to change the tense of the clause is to change the tone on the pronoun. The other means is to change the tone on the verb, as described in the next section.

9. Unmarked tense versus specific past in Wandala

In Wandala, a Central Chadic language, a change in the tone of the monosyllabic verb from the default low tone to the high tone changes the unmarked tense to the past tense, as illustrated below:

- (20) a. *à kà trà*
 3SG finish work
 ‘he finishes the work’
- b. *à ká trà*
 3SG finish work
 ‘he finished the work’
- c. *à kyà gàhè*
 3SG break pot
 ‘he breaks a pot’
- d. *à kyá gàhè*
 3SG break pot
 ‘he broke a pot’

For bisyllabic verbs, the past tense is coded through the high tone on the second syllable of the verb. In addition to example (19) above compare the following:

- (21) a. *à pàtá cìcìlè*

3SG pound fiber

‘he was pounding fibers’

b. *à pàtà cicilè*

3SG pound fiber

‘he is pounding/pounds fibers’

In reduplicated verbs the past tense is coded on the last syllable of the first part of the verb:

(22) a. *má žàgàdǎ-žàgàdè*

HYP run-run

‘when he ran away (from one place)’

b. *má žàgàdà-žàgàdè*

HYP run-run

‘if he runs . . .’

10. Locative complement versus direct object marker in Hdi

Hdi (Central Chadic) is verb-initial in pragmatically neutral clauses.

Nominal subjects follow the verb. The object phrase follows the verb or the

nominal subject, and is marked by the high-tone preposition *tá*, glossed as

OBJ:

(23) *kà wà-dá-p tá tsá vərə yá dzághà*

SEQ take.PL-ALL-OUT OBJ DEF beans DEM home

‘they brought the beans home’

(24) *zá á zwáyítú tsá wà ká-’á kà*

eat NEG child OBJ DEF NEG COMP-3SG SEQ

klá-úgh-tà kà f-ù-d-ú-tà

take-D:SO-REF SEQ put-SO-ALL-EP-REF

‘‘Children do not eat it,’’ he [Hyena] said [and he] took it and ate it up.’ (lit. ‘put it in himself’)

The locative stative preposition is low-tone *tà* ‘at, on’. The stative locative phrase may occur in the same position in which the object phrase occurs, viz. in the position after the nominal subject:

(25) *ndzàdà-vá-tà ùvá tà xvá*

last-APPL-REF cat PREP work

tà ñghá-l ná kà sá-ghá kɾì

IPFV see-UH DEM SEQ arrive-D:GO dog

‘When Cat had spent some time working on the field, one sees
Dog coming.’

(26) *ngá lá-mà-ní ndá tà ʒàŋgwàdák*

NORM enter-IN-3SG ASSC PREP back.entrance

‘She should enter through the back of the compound.’

(27) *ngá sá-bà tsá m̀ndú yá j̀b̀il ndá*

NORM arrive-OUT DEM man DEM outdoors ASSC

lg̀ùt-á ngrá tà vghá-ní

cloth-GEN black PREP body-3SG

‘The man should come out wearing black clothes.’

The directionality of change here is from the locative stative preposition to the direct object, rather than from the direct object to the locative stative preposition. The argument in favour of the locative to direct object direction is provided by the fact that the locative preposition has a much wider range of syntactic positions than the direct object. The locative prepositional phrase may also occur in a number of positions in which the object marked by the preposition *tá* cannot occur, e.g. in the clause-initial position:

(28) *tà x̀il-á v̀akú x̀is ngá pgh-ày-ní tá pgh̀*

PREP back-GEN year two NORM pour-PO-3SG OBJ libation

‘After two years he should pour a libation.’

The syncretism of the locative and object functions is known in other languages, e.g. in Spanish with respect to human direct objects. It is interesting that in Hdi it is not the same preposition used but rather an altered preposition, viz. the preposition with high rather than low tone.

11. Inherently locative versus inherently non-locative goal in Hdi

The directional locative complement in Hdi is marked by the preposition *da* with the high or the low tone. When the locative complement is represented by a noun that is inherently locative, such as a toponym, the directional preposition *da* has the high tone:

(29) *lá-xà-dá dá xdí ...*

go-DOWN-1SG PREP Hdi

‘Having gone to Hdi I ...’

(30) *tà xúlá tsá mántsá kà lá-f-i dá mókólò*

PREP back DEF then SEQ go-UP-1SG PREP Mokolo

‘Afterwards I went to Mokolo.’

When the locative complement is represented by an inherently non-locative complement, the directional preposition *da* has the low tone:

- (31) *dàgà rvéré, dàgà gwì'yán kà*
 CONJ (Hau.) lion CONJ (Hau.) elephant SEQ
ddà-dá-tá-xèn dà ví mà xàdík
 fall-ALL-REF-3PL PREP fire PREP ground
 ‘Lion and Elephant fell into the fire in the ground.’
- (32) *kà lá-ghá-tsí dà ùvá*
 SEQ go-D:PVG-3SG PREP cat
 ‘... and he went to Cat.’

The direction of grammaticalization in Hdi is proposed to be from *dà* to *dá*. The nouns that can serve as complements of the preposition *dà* encompass a much broader range of meanings than the nouns that can follow the preposition *dá*, viz. only toponyms and a few inherently locative nouns. The narrower group is marked as distinct from the default class, which encompasses all ordinary nouns.

12. A scenario for grammaticalization within a domain

It would appear that grammaticalization within a domain, as documented above, should not happen. How is the listener to know what meaning is conveyed by the changed coding means? Is this type of change sudden, e.g. by a tacit agreement, or is it gradual? A sudden change is out of the question simply because it has not been attested except for cases of edicts by governments or other authorities, as documented in Hagège (1993, 2004). Given that change within a domain produces a meaning opposite to that of the starting state, wouldn't a gradual change produce as undesirable a result (albeit a less disastrous one) as a gradual change in the direction of traffic? Not necessarily.

The new function may emerge as an evolutionary product of numerous small changes, some potentially conscious, others unconscious. We cannot predict what the new function will be, but we can predict that it will still be a subdomain of the same domain of which the old function is a part.

Evidence for conscious attempts by speakers to encode a new function is provided by utterances that a speaker may consider to be ambiguous to the hearer. The case in point is the complements of verbs of saying with subjects coding the same number, gender, and person as the subject of the matrix clause. In such clauses, the second pronoun is coreferential with the first pronoun:

- (33) 1_2_1 <366 B> *and **he** said **he** happened to mention that Oscar was away for a couple of days* (London-Lund Corpus)³
- (34) 7_1_2 <609 c> *I think **he** said that **he**'d seen most of them*
(London-Lund Corpus)
- (35) 2_12_0 <57 a> *I thought **she** said **she** was about the same age as me, skiing* (London-Lund Corpus)

When speakers of English are told that the subject pronoun in the complement clause in such sentences unambiguously codes co-reference with the subject of the main clause (Frajzyngier 1997), they counter this argument by producing sentences with varying degrees of stress and loudness on the pronominal subject of the complement clause, or pauses after the subject pronoun, and claim that such sentences indicate disjoint reference. Experimental studies concerning perceptions of such clauses indicate that the hearers do not actually know what the speaker intends to convey (Cooper 1976). Nevertheless, repeated attempts by different speakers to convey the meaning through changes of tone or intonation, through stress, or through vowel length may eventually convey the meaning intended by the speaker.

Such a scenario can be observed in fieldwork elicitation conditions, when speakers of the target language might add stress, loudness, or even an

³ The pronunciation notation of the London-Lund Corpus has been omitted in examples (33) to (35).

extraneous morpheme to convey a meaning that they detected to exist in the language of elicitation but that actually is not coded in the target language.

13. The directionality of grammaticalization within a domain

The directionality of grammaticalization from a lexical item to a grammatical morpheme has most often been taken for granted, which did not prevent discussions triggered by occasional cases of (part of) a grammatical morpheme having become lexicalized. Frajzyngier (1996, 1997) demonstrated that with respect to grammaticalization involving two grammatical morphemes, bidirectionality rather than unidirectionality is to be theoretically expected and is actually attested in natural languages. Can one talk about the directionality of grammaticalization within a domain? Most certainly, and it is an important issue. When one is faced with two morphemes that code different sub-domains of the same domain and that differ only in tone or stress, how is one to know which morpheme constitutes the base from which the grammaticalization proceeded? There are no theoretical assumptions that define which is the base and which is the product of further grammaticalization. This decision must be based on the analysis of individual languages. For languages for which there are historical data, an examination of past records may provide reliable information about the directionality. Here the method of traditional

historical linguistics, including dates of attestation, may provide a reliable answer. For all languages, including those without historical data, the comparative method applied to forms and functions may yield reliable information as well. If one can reconstruct a form-function pair as representing an earlier part of the grammatical system, the emergence of a new function coded by an altered (rather than a new) form will provide evidence of innovation, and hence grammaticalization. Language-internal determination of directionality should include information about the default/unmarked form in any given domain. The non-default form is the product of grammaticalization.

14. Implications

With respect to grammaticalization theory, the present study indicates that grammaticalization processes should be divided into those that happen outside of the domain, i.e. processes that introduce new domains, and grammaticalization within the domain, essentially processes that introduce new sub-domains.

Grammaticalization processes outside the domain are more likely to use lexical items and phrases that carry semantic or discourse functions appropriate for the new domain to be coded. Grammaticalization processes within the domain are more likely to use the existing coding means, and

newly grammaticalized functions are coded through a change to the existing coding means. Grammaticalization processes within the domain do not depend on the semantic or discourse properties of the source.

Grammaticalization theory had come under severe criticism from various directions, e.g. Campbell (2001), Joseph (2001), Newmeyer (2001). Some of the criticism implied that traditional historical linguistics better explains the changes that grammaticalization theory purports to explain (Campbell 2001). Grammaticalization within the domain deals with issues with which traditional historical linguistics has never dealt. Therefore, for theories of language change, historical linguistics should incorporate the methods and findings of grammaticalization theory.

One of the ubiquitous characteristics of languages is the presence of binary oppositions of forms and functions. The product of grammaticalization within a domain per force creates binary oppositions of form and function. Hence, one of the most important implications of the present study is that it explains the emergence of binary oppositions in language structures.

15. Open questions

Given that grammaticalization within a domain is a new approach, by its nature it should generate more questions than answers. The first open

question is which forms can be exploited for grammaticalization within the domain. In addition to tone, other means commonly exploited are stress (English) and intonation in many languages from different families. How often are vowel length and consonant gemination used? Are there any other means that are used?

While the question about the origin and the forms of new markers can be formulated in terms that allow rigorous investigation, questions about the emergence of new functions are not simple at all. The notion of the ‘opposite function’ is not intuitively obvious and is not predictable for any given function. The opposite function emerges only as an evolutionary product of the narrowing of a number of possible functions that the change of form may engender.

One could ask why in Hausa the ‘no point of view’ category is the opposite of the ‘point of view of the subject’ category. Why is the ‘point of view of the object’ not the opposite of the ‘no point of view’ category?

The absence of the coding of nominal numbers may result in both singular and plural coded by different means, or just in the opposition ‘unmarked’ versus ‘plural’.

If we take the case of the habitual and the perfective aspects in Mupun, the two categories are not opposite, as the language has also imperfective, coded by an unrelated grammatical morpheme. But if we take the values of ‘bound’ as one of the features of the habitual and the

perfective, the two aspects have opposite values with respect to the feature ‘bound’.

If we take the inherently non-locative complement and the inherently locative complement in Hdi, they are opposite.

So the question as to what is the opposite and what is not the opposite for a given function may be answered only through an analysis of the functional domains coded within the grammar of a specific language rather than through reference to commonsensical notions of functions and the relationships among functions.

References

- Campbell, Lyle. 2001. What’s wrong with grammaticalization? *Language Sciences* 23: 113-161.
- Cooper, William E. 1976. Speech timing of coreference. *Acoustics, Speech, and Signal Processing, IEEE International Conference on ICASSP '76*: 548-548.
- Fischer, Olga C. M., Muriel Norde & Harry Perridon (eds). 2004. *Up and down the cline: The nature of grammaticalization*. Amsterdam: John Benjamins.

- Frajzyngier, Zygmunt. 1987. Grammaticization through analysis. In *Papers from the 2nd Pacific Linguistics Conference*, Scott DeLancey & Russell Tomlin (eds), 125-140. Eugene: University of Oregon.
- Frajzyngier, Zygmunt. 1993. *A Grammar of Mupun*. Berlin: Reimer.
- Frajzyngier, Zygmunt. 1996. *Grammaticalization of the Complex Sentence: A case study in Chadic*. Amsterdam: John Benjamins.
- Frajzyngier, Zygmunt. 2004. Principle of functional transparency in language structure and language change. In Frajzyngier et al. (eds), 259-284.
- Frajzyngier, Zygmunt. 2008. *A Grammar of Gidar*. Frankfurt: Peter Lang.
- Frajzyngier, Zygmunt. 2008. Grammaticalization, typology, and semantics: Expanding the agenda. In *Rethinking Grammaticalization: New perspectives*, María José López-Couso & Elena Seoane (eds), 61-102. Amsterdam: John Benjamins.
- Frajzyngier, Zygmunt & Jan Mycielski. 1998. On some fundamental problems of mathematical linguistics. In *Mathematical and computational analysis of natural language*, Carlos Martin-Vide (ed), 295-310. Amsterdam: John Benjamins.
- Frajzyngier, Zygmunt with Erin Shay. 2002. *A Grammar of Hdi*. Berlin: Mouton de Gruyter.
- Frajzyngier Zygmunt & Erin Shay. 2003. *Explaining language structure through systems interaction*. Amsterdam: John Benjamins.

- Frajzyngier, Zygmunt & Mohammed Munkaila. 2004. *Grammatical and semantic relations in Hausa: 'point of view' 'goal' and 'affected object'*. Cologne: Koepppe.
- Frajzyngier, Zygmunt, David Rood & Adam Hodges (eds). 2004. *Linguistic diversity and language theories*. Amsterdam: John Benjamins.
- Frajzyngier, Zygmunt & Eric Johnston with Adrian Edwards. 2005. *A Grammar of Mina*. Berlin: Mouton de Gruyter.
- Giacalone-Ramat, Anna & Paul J. Hopper. 1998. Introduction. In *The Limits of Grammaticalization*, Anna Giacalone-Ramat & Paul J. Hopper (eds), 1-12. Amsterdam: John Benjamins.
- Givón, Talmy. 1990. *Syntax. A functional-typological introduction*, vol. 2. Amsterdam: John Benjamins.
- Greenberg, Joseph H. 1978. How does a language acquire gender markers? In *Universals of human language*, Joseph H. Greenberg, Charles A. Ferguson & Edith Moravcsik (eds), vol. 4: 47-82. Stanford: Stanford University Press.
- Hagège, Claude. 1993. *The language builder: An essay on the human signature in linguistic morphogenesis*. Amsterdam: John Benjamins.
- Hagège, Claude. 2004. On the part played by human conscious choice in language structure and language evolution. In Frajzyngier et al. (eds), 105-118.

- Haspelmath, Martin. 2004. On directionality in language change with particular reference to grammaticalization. In Fischer et al. (eds), 17-44.
- Heine, Bernd, Ulrike Claudi & Friederike Hünemeyer. 1991. *Grammaticalization. A conceptual framework*. Chicago: University of Chicago Press.
- Heine, Bernd & Tania Kuteva. 2002. *World lexicon of grammaticalization*. Cambridge: Cambridge University Press.
- Hopper, Paul J. 1987. Emergent grammar. *Berkeley Linguistic Society* 13: 139-157.
- Hopper, Paul J. & Elizabeth C. Traugott. 1993. *Grammaticalization*. Cambridge: Cambridge University Press.
- Joseph, Brian D. 2001. Is there such a thing as 'grammaticalization'? *Language Sciences* 23: 163-186.
- Joseph, Brian D. 2004. Rescuing traditional (historical) linguistics from grammaticalization theory. In Fischer et al. (eds), 45-71.
- Kury_owicz, Jerzy. 1965. The evolution of grammatical categories. *Diogenes* 51: 55-71. [reprinted 1975. *Esquisses linguistiques II*, 38-54. München: Fink.]
- Lehmann, Christian. 2002. *Thoughts on grammaticalization: A programmatic sketch*. 2nd rev. ed. [1st ed., 1982.] Erfurt: Seminar für Sprachwissenschaft der Universität.

- Newman, Paul. 2000. *The Hausa Language. An Encyclopedic Reference Grammar*. New Haven and London: Yale University Press.
- Newmeyer, Frederick J. 2001. Deconstructing grammaticalization. *Language Sciences* 23: 187-229.
- Parsons, Frederick W. 1960/61. The verbal system in Hausa. *Afrika und Übersee* 44: 1-36.
- Samuels, Michael L. 1972. *Linguistic evolution, with special reference to English*. Cambridge: Cambridge University Press.
- von Humboldt, Wilhelm. 1972. Über das Entstehen der grammatischen Formen und ihren Einfluß auf die Ideenentwicklung. Schriften zur Sprachphilosophie. [Werke in fünf Bänden, Andreas Flitner & Klaus Giel (eds), Band III] 2nd rev. ed. [1st ed., 1822.] Darmstadt: Wissenschaftliche Buchgesellschaft.

Abbreviations

1	first person	IPFV	imperfective
2	second person	M	masculine
3	third person	NEG	negative
ALL	allative	NORM	normative
APPL	applicative	OBJ	object marker

ASSC	associative	OUT	extension coding the
COMP	complementizer		movement 'out'
CONJ	conjunction	P	person
D	dependent (aspect)	PL	plural
DEF	definite	PO	potential object
DEM	demonstrative	PREP	preposition
DET	determiner	PFV	perfective
DOWN	extension coding the	PVG	point of view of goal
	movement 'down'	REF	referential
EP	epenthetic	SG	singular
F	feminine	SEQ	sequential
FUT	future	SO	subject orientation
GEN	marker of modification	SBJV	subjunctive
GO	goal orientation	UH	unspecified human
HAB	habitual	UP	extension coding the
HYP	hypothetical		movement 'up'
IN	extension coding the	VENT	ventive
	movement 'in'		