

## Functional development of directional prefixes in nDrapa and rGyalrong\*

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### Summary

This study examines the functional development of directional prefixes in two varieties of Qiangic languages of the Tibeto-Burman subfamily: Mätro nDrapa and Bola Eastern rGyalrong (Situ). While the directional prefixes of both languages primarily function as directive markers, they are further grammaticalized to more abstract functions. First, we will examine the morphological characteristics of both languages' directional prefixes. Second, we will examine their functions. Both languages show two dimensions of functional development: [1] semantic expansion of each directional marker and [2] semantic abstraction of the entire set of directional markers. Both languages show a significant contrast in the second dimension of grammaticalization: The obligatory marking of the simple past is only found in rGyalrong, whereas the clear marking of telicity is only found in nDrapa, although both languages' directional prefixes have functions of imperatives, changes of state, and perfectives. Based on these facts and using an aspectual notion of transition, we propose a hypothesis for the stages of functional abstraction occurring in the process of grammaticalization: [I] directional prefixes that indicate a transition between places, that is, direction of motion; [II] directional prefixes that indicate a certain part of aspectual/modal transitions such as the imperative, a change of state, and the perfective; [III] directional prefixes that indicate telicity, that is, a more general aspectual transition. The change from the perfective to the past may occur in each language in Stage II. According to this scale, nDrapa is in Stage III, even though the function of indicating the past is not fully developed, while rGyalrong is in Stage II.

**Key words:** nDrapa, rGyalrong, directional prefix, grammaticalization, tense/aspect

關鍵詞：扎坝语、嘉戎语(嘉绒语)、趋向前缀、语法化、时态范畴

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## 1. Introduction

### 1.1 Aims of this study

This study examines the functions of directional prefixes in the Mätro dialect of the nDrapa language and the Bola dialect of the Eastern rGyalrong (or Situ) language (henceforth rGyalrong) from a contrasting viewpoint. Figure 1 illustrates the central spot of the area where each language is spoken. Both nDrapa and rGyalrong belong to the Qiangic languages of the Tibeto-Burman language subfamily.<sup>1</sup> Moreover, they are classified into different subgroups within the Qiangic language group (cf. Sun 2000). Consequently, they show several different properties in terms of directional prefixes.

Directional prefixes are verbal prefixes that primarily indicate the direction/orientation of movement and are common to all Qiangic languages. They are regarded to be grammaticalized from other words, e.g., Nagano (1984a, b) proposes that rGyalrong directional prefixes can be traced back to motion verbs. Directional prefixes in nDrapa and rGyalrong are further grammaticalized to more abstract functions, such as aspect marking. This study focuses on the latter dimension of grammaticalization and contrastively examines the developments in nDrapa and rGyalrong. The language data of nDrapa and rGyalrong



Figure 1 Map of Bola and Mätro

<sup>1</sup> The genealogical details of the Qiangic language group are still under discussion. However, the view introduced here represents a consensus view. We will not discuss this issue further in the present paper.

examined in this study are based on primary data collected in fieldwork conducted by Shirai and Nagano, respectively, unless stated otherwise.

## 1.2 Previous studies

The present study represents the first contrastive analysis on the functions of directional prefixes in Mätro nDrapa and Bola rGyalrong. Previous studies have described the directional prefixes in one or the other alone. Functions of nDrapa directional prefixes were discussed by Shirai (2009, 2018), and descriptive studies on Bola rGyalrong by Nagano (2018, among others) included detailed discussions of directional prefixes. Other studies on nDrapa and rGyalrong have been cited by Shirai (this volume) and Nagano (this volume), respectively.

There are several studies that address the development of directive markers in Qiangic or Tibeto-Burman. Nishida (1989: 806–807) compares data for languages including Tangut, Tibetan, Ergong (sTau), Ersu, Qiang (Rma), and Prinmi, which were accessible at that time. He proposes a hypothesis on the functional development of directive markers in Tibeto-Burman, illustrated in Figure 2. His hypothesis sets two dimensions of functional development: the restriction of tense (Type I or II) and the connection with each verb stem (Type A, B, or C). We will refer to this hypothesis again in Section 5. Jacques (2014) compares Tangut, Japhug, and Prinmi, drawing attention to the similarities between Tangut and Prinmi.

Type	IA	=>	IB	=>	IIA	=>	IIB	=>	IIC
Language	Ersu		Old Tibetan, Ergong		Qiang, Tangut, Prinmi		Tangut		Qiang dialects with <i>da-</i>
	$\left( \begin{array}{l} \text{Directives are} \\ \text{different from} \\ \text{Tense markers} \end{array} \right)$		$\left( \begin{array}{l} \text{Directives are} \\ \text{divided into} \\ \text{Present/Future/} \\ \text{Past markers} \end{array} \right)$		$\left( \begin{array}{l} \text{Directives are} \\ \text{connected to} \\ \text{the past tense} \end{array} \right)$				

Type I: Directives are used for both past and non-past.

Type II: Directives are used only in the past tense.

Type A: A verb stem may have various directional prefixes.

Type B: A certain verb stem has a particular directional prefix. The directional prefixes have a common function.

Type C: The directional prefix has a single form and function.

**Figure 2** Nishida's (1989: 806–807) hypothesis on the development of directional prefixes

There are also several studies that touch on the semantic expansion or functional development of a language's directional prefixes. For example, Sims and Genetti (2017:

135) mention the functional development of directional prefixes in the Yonghe dialect of the Rma (Qiang) language, which, like rGyalrong and nDrapa, belongs to the Qiangic branch. They conclude that directives first developed into perfectives, and later came to mark the imperative.

## 2. Profile of directional prefixes

This section contrasts the basic characteristics of directional prefixes in rGyalrong and nDrapa from a synchronic viewpoint. Table 1 lists both languages' directional prefixes and the corresponding topographically-based categories.<sup>2</sup> rGyalrong has seven<sup>3</sup> directives, while nDrapa has five. The five directive categories found in nDrapa are common to both languages. rGyalrong additionally features the “uphill” and “downhill” categories. However, the forms of prefixes for the common directive categories do not appear to be cognates, except for the “upstream” prefix.<sup>4</sup> Possible etymologies of directional prefixes are discussed in Nagano (1984a, b).

**Table 1** Forms of directional prefixes in Situ rGyalrong and nDrapa

Directions	rGyalrong		nDrapa	
	[past]	[non-past]	[plain]	[prohibitive]
upward (UPW)	to-/ta-	(to-)	ʌ-	
downward (DWN)	no-/na-	na-	a-	na-
uphill (UHL)	ro-/ra-	(ro-)		
downhill (DHL)	ri-	re-		
upstream (UST)	ko-/ka-	ku-~kə-	kʌ-	ka-
downstream (DST)	nə-	di-~nə-	ŋʌ-	ŋa-
general/neutral (NTL)	yi- (ya-)	yi-	tʌ-	ta-

See Nagano (this volume) and Shirai (this volume) for phonological transcription of each language, respectively.

In both languages, directional prefixes may indicate the direction of motion in terms of natural geography, e.g., (1) and (2). In the examples below, the language names are under-

<sup>2</sup> Synchronically, the primary meanings of the nDrapa “upstream” and “downstream” prefixes are “inward” and “outward,” respectively (Shirai, this volume). However, for the convenience of contrastive discussion, the present study uses the topographically-based categories listed in Table 1.

<sup>3</sup> The ICog-rtse dialect, which Nagano investigated in the 1980s, distinguishes nine different directions. It has upper seat (*ku-*), lower seat (*ni-*), and back to the original place (*ne-*), in addition to the Bola directional system shown in Table 1. Moreover, both downward and downriver are indicated by an identical prefix (*no-*) (Nagano 1984a, b, 2018: 73).

<sup>4</sup> Previous studies also mention the difficulty of reconstructing the directional prefixes at the Proto-Qiangic level (Nagano 1984b: 33–34, Evans 2004: 205).

lined, while the directional prefixes in the sentences are indicated in bold. In (1), a nDrapa example, the “upward” prefix **Λ-** is used, since the goal of movement (the center of Daofu County) is located at a higher altitude than the nDrapa region. Moreover, the starting point of the movement, *nɔapi3* ‘nDrapa’ is not marked by a case marker, since such a marker (such as the ablative) has not developed in the nDrapa case system (Shirai 2010). In (2), a rGyalrong example, the “uphill” prefix *ro-* is used, since the uphill direction is identical with north in Bola (see Section 3.1), and the goal (Ma’erkang) is located in this direction from India.

(1) nDrapa      *ŋa=rə3*      *ŋΛŋAlpha1*      *nɔapi3*      **Λ-tti-a1**      *rɛ3*.  
 1SG=GEN      sister      nDrapa      UPW-arrive-PFV      FAC

“My sister came from nDrapa (up to Daofu = upward).”

(2) rGyalrong      *mə*      *gyagar*      *nəne*      *ronayas* {**ro-na-ya-s**}      *mə-nio*.  
 3SG      India      from      UHL-APP-back-PFV      Q-LKV

“He has come back from India (from south to north = toward the mountain side).”

Directional prefixes in nDrapa and rGyalrong show different morphological behaviors. Here, we mainly focus on the relative position of a directional prefix among verbal prefixes. In nDrapa, a verb can simultaneously have two inflectional prefixes: a directional prefix and a negative prefix. The position of the directional prefix is always leftmost, as seen in (3) and (4).

(3) nDrapa      *ndofidi=antehi3*      **ŋΛ-mə-heΛ-a1**.  
 stove.ash=only      DST-NEG-remain-FAC.PFV

“Everything has been lost except for stove ash.”

(4) nDrapa      *zei3*      **tΛ-mə-khe-a1**      *rɛ3*.  
 wife      NTL-NEG-give-PFV      FAC

“He did not give the daughter in marriage (to the frog,) (despite his promise).”

In rGyalrong, there are five slots for verbal prefixes, labeled P1 to P5 from left to right (Nagano, this volume). The position of a directional prefix differs according to its function. [i] When a directional prefix indicates both direction and past tense, it falls into slot P2; moreover, a negation or question prefix may be attached to slot P1, as in the case of (5) and

- (6). [ii] If one dares declare the direction with a prefix in a non-past sentence (even though the direction can be expressed with a verb or an adverb), it may fall into slot P2, as in (7).  
 [iii] An imperative sentence requires a directional prefix in slot P1, e.g., (8a); moreover, a progressive prefix may be attached to the P2 position, e.g., (8b).

(5) rGyalrong    wu-toñ                      mə-nə-(tə-)ši-w?  
                          3SG.GEN-meaning              Q-PST.DST-(2-)know-2SG>3

“Did you understand the meaning?”

(6) rGyalrong    wuʃo            kuruʔ            zinkey {ziŋkam-y}            ʃikthal {ja-yi-kə-thal}-tə  
                          3SG            Tibet            area-LOC                              NEG-PST.NTL-3SG-go-DEF

thakčhot    nə-ño.  
 certain            EVI-LKV

“It is certain that he did not go to Tibet.”

(7) rGyalrong    təmu            mə-nə-rtsi            no-ño-y,            ɲa            ka-čhe  
                          weather            COND-EVI-good            EVI-LKV-LOC            1SG            INF-go

ñ-əsem                      ma-na-we.  
 1SG:GEN-feeling            NEG-DWN-come

“I don’t want to go, even if the weather is good.”

(8) rGyalrong

a.    štə            w-əsmen                      təʃi            w-əŋgu-y  
           this            3SG:GEN-medicine            water            3SG:GEN-LOC.inside

tosəcolow {tə-sə-colo-w} .  
 IMP.UPW-CAUS-mix-2SG

“Mix this medicine with water.”

b.    štə            w-əsmen                      təʃi            w-əŋgu-y  
           this            3SG:GEN-medicine            water            3SG:GEN-LOC.inside

tokscolow {tə-kə-sə-colo-w} .  
 IMP.UPW-PROG-CAUS-mix-2SG

“Keep mixing this medicine with water.”

The abovementioned morphological behaviors show that nDrapa directional prefixes have their distinctive position at the leftmost part of the verb; while rGyalrong directional prefixes are embedded in morpheme slots in accordance with their non-directional functions, i.e., functions marking tense or mood. The development of such non-directional functions will be discussed in the next section.

### 3. Grammaticalization of directional markers

The primary function of directional prefixes is to indicate the direction of motion (directional markers), as in (1) and (2). However, both nDrapa and rGyalrong exhibit a semantic expansion or abstraction of directional prefixes. Here, we refer to it as the grammaticalization of directional markers. There are two dimensions to such grammaticalization:

[A]	Semantic expansion of each directional marker.
[A-i]	Expansion to other directions.
[A-ii]	Expansion to non-directional meanings.
[B]	Semantic abstraction of the whole set of directional markers.
[B-i]	Imperative.
[B-ii]	Change of state.
[B-iii]	Perfective and past.
[B-iv]	Telic.

In the rest of this section, we will briefly survey examples of [A] and present a contrastive discussion on [B].

#### 3.1 Semantic expansion of each directional marker

We can find plenty of examples in which directional markers semantically shift to other meanings in both nDrapa and rGyalrong. Similar semantic shifts are found in other Qiangic languages as well. For example, Evans (2004: 208) notes the following about the Rma (Qiang) language: “Within the relatively short time-depth of the Qiang (Rma) language itself, there is innovation both of forms and of codified categories of orientation.” All this suggests the semantic flexibility of directive categories.

Semantic expansions to other directive categories are observed in both nDrapa and rGyalrong. In nDrapa, the directional prefixes for upstream and downstream have been derived from those for inward and outward, respectively. This parallel expansion is also found in other languages in the central Qiangic area (Shirai 2020). This seems natural since in the regions where nDrapa is spoken, the upriver direction leads deep into the mountain, whereas the downriver direction leads to open land. In rGyalrong, the directional prefixes for uphill and downhill also mean “toward the mountain” and “toward the river”, respec-

tively. Moreover, they mean “northward” and “southward”, since the village Bola where this dialect is spoken is located on the north bank of the Suomo River, which flows west, and the area to the north of the village is mountainous (Nagano 2018: 75–76). Furthermore, the directional prefixes for uphill and downhill also mean “forward” and “backward”, respectively.

Directional markers may also be expanded to include certain meanings other than directions. In nDrapa, the downstream/outward prefix also means “drastically,” e.g.,  $\eta\lambda$ -*the1* {OUT-blow} ‘a strong wind blows’ and  $\eta\lambda$ -*tthil* {OUT-passingly.rain} ‘(It) torrentially rained.’ Contrastively, *fili1* ‘a breeze blows’ may be associated with various directional prefixes that indicate the wind directions, and a normal passing rain is expressed by the downward directive: *a-tthi3* ‘(It) passingly rained.’ In rGyalrong, the upward prefix also means that the action has been accomplished, e.g., *to-ptshe-* {UPW-cure} ‘get completely cured’.

### 3.2 Semantic abstraction of the whole set of directional markers

A number of previous studies, such as Kamei et al. (1996: 1298–1302 “directional expressions”) and Bybee et al. (1994), mention that a set of directional expressions may be grammaticalized to assume other functions. For example, directional prefixes can also function as applicative markers in Ainu, Blackfoot, Maricopa, and Choctaw (Kamei et al. 1996: 1301). Moreover, movement or directional expressions may be the lexical sources of aspect markers such as completive and anterior (i.e., perfect) in certain languages (Bybee et al. 1994: 58–59, 63–64).

In nDrapa and rGyalrong, directional prefixes function as grammatical markers, such as the imperative, change of state, and perfective markers. Shirai (2018: 416–417) discusses that the notions of transition or crossing boundaries, which are used in studies of aspect (Tatevsov 2002: 330–332; Desclés and Guentchéva 2012: 127), may go some way toward explaining the aspect/mood marking functions of directional prefixes in nDrapa. For example, the imperative evokes the transition from State to Process, and a change of state implies a transition from State to State. Directions, which is what directional markers mainly connote, involve transition between locations. Grammaticalization of directional markers may have created contexts that are free of location.

#### 3.2.1 The imperative mood

In both nDrapa and rGyalrong, a directional prefix is obligatory in the imperative mood, e.g., (9) and (8a) repeated below. The imperative evokes a transition from State to Process. When a directional prefix functions as an imperative marker, its original directional meaning may be reduced so that the directional prefix is attached, even to a verb which does not imply movement.



- (9) nDrapa      a. **ko-ttsu2.**                                      b. **ka-ttsu2.**  
                             UST-eat.IMP                                      UST.PROH-eat.IMP  
                             “Eat!”    “Don’t eat!”

- (8a) rGyalrong    štə    w-əsmen                      təjɿ    w-əngu-y  
                             this    3SG:GEN-medicine    water    3SG:GEN-LOC.inside

*tosəcolow{to-sə-colo-w}*.

IMP.UPW-CAUS-mix-2SG

“Mix this medicine with water.”

### 3.2.2 The change of state

In both nDrapa and rGyalrong, an adjective root with a directional prefix connotes a change into the state that the adjective indicates, e.g., (10) and (11). From the viewpoint of transition, a change of state implies a transition from State to State.

- (10) nDrapa      ŋoro1    ʌ-tei-a1.  
                             3SG        UPW-big-FAC.PFV  
                             “He grew up.” (Lit. “He became big.”)

- (11) rGyalrong    ñiyoñe    to-kte.  
                             3SG.HON    UPW-big  
                             “He grew up.” (Lit. “He became big.”)

### 3.2.3 The perfective and the past

In principle, perfective sentences in both nDrapa and rGyalrong obligatorily have a directional prefix.<sup>5</sup> The perfective is regarded as the transition from Process to State. In nDrapa, there is no default choice among the five directional prefixes to indicate the perfective, so in many cases, the connection between directional prefix and verb seems arbitrary, e.g., (3) and (4) above, and (12) below.

<sup>5</sup> There are exceptions in nDrapa. Certain verbs such as *v*<sub>Λ</sub>3 ‘come’ and *ŋ*<sub>θ</sub>2 ‘hear’ cannot be connected to directional prefixes even in the perfective (Shirai 2018: 409).

- (12) nDrapa      me3      tɬ-ɛɬ=nda1      a-hso-a3.  
 mother      NTL-die=before      DWN-order-FAC.PFV

“The mother told the children (what they should do later) before she died.”

In rGyalrong, the directional prefix *nə-*, which originally only meant “downstream,” functions as the default past marker, e.g., (5) and (6) above, (13), and (14) below. (14) is an example of the simple past (past imperfective), showing that a directional prefix indicates the past in rGyalrong. It suggests that a functional expansion from the perfective to the past, which involves both the perfective and past imperfective, has occurred in rGyalrong.<sup>6</sup>

- (13) rGyalrong    nəʒo    tərʒap    nətsarn {nə-tə-sar-n}    mə-ɲos?  
 2SG    wife    DST-2-draw-2SG    Q-LKV

“Did you get married?” (Lit. “Did you get a wife?”)

- (14) rGyalrong    kəčət    wastot    nə-kə-sko-s.  
 all    very    DST-3PL-kind-PFV

“They were all so kind.”

Moreover, in rGyalrong, a directional prefix other than *nə-* ‘DST’ may also be used as a past marker. For example, *no-* ‘DWN’ is the default choice for the verb *pšit* ‘spit,’ as in (15). Moreover, the speaker may choose *to-* ‘UPW’ instead, as in (16), which figuratively means that the speaker invited his own misfortunes.

- (15) rGyalrong    ɲa    mišthit    nopšin {no-pšit-ɲ}.  
 1SG    saliva    DWN-spit-1SG

“I spat.”

<sup>6</sup> In the synchronic descriptive perspective, the primary tense-aspectual function of rGyalrong directional prefixes is to indicate the past tense. However, we can assume that they originally had the Perfect meaning from certain non-past examples with a directional prefix. In the following example, the reduplication of a verb with a directional prefix (*no-we* ‘DWN-come.NPST’) indicates the iterative.

- wuʒo    no-we                      no-we                      nə-ɲos.  
 3SG    DWN-come.NPST    DWN-come.NPST    EVI-LKV

“He often comes (here).”

- (16) rGyalrong    ña        mišthit    topšin {**to**-pšit-ñ}.  
                          1SG        saliva        UPW-spit-1SG

“I spat into the wind.” (Lit. “I spat upward.”)

Here, the function of a directional prefix in nDrapa is described as the perfective, since its use in the simple past is not obligatory. Both sentences in (17) and (18) are from the same folktale. However, the former has a directional prefix, while the latter does not. This is probably because a directional prefix may be used if the speaker wants to express a temporal boundary. These findings may suggest that nDrapa directional prefixes are undergoing a functional expansion to the past.

- (17) nDrapa        məñei1        n[hΛ=rə4        me3        **to**-po-a1.  
                          sibling            pair=GEN        mother        NTL-exist<sub>1</sub>-FAC.PFV

“There was (also) the mother of the two siblings.”

- (18) nDrapa        hpei2        tei~tei=la1        p[ɦjΛ3        mə-po3        sa3.  
                          local.lord        big~NMLZ=LOC        child        NEG-exist<sub>1</sub>        ADM

“The great lord did not have a child.”

### 3.2.4 Telicity

Telicity implies a transition over an endpoint. Here, we examine the correlation between telicity and the use of directional prefixes in non-past situations.

The behavior of directional prefixes in non-past situations differs significantly between nDrapa and rGyalrong. In nDrapa, a verb in a non-past predicate may also have a directional prefix, whereas in rGyalrong a directional prefix is rarely found in non-past predicates. The environments of prefixation in nDrapa tend to correlate with aspect (Shirai 2018): [i] if the predicate is [+telic] and expresses a future event, a directional prefix strongly tends to be attached, e.g., (19), which may not mean “he is putting on the cloths”; [ii] if the predicate is the progressive, a directional prefix strongly tends not to be attached, even if the verb is [+telic], e.g., (20), which may not mean “the child will break cups”; [iii] if the predicate is non-past and [–telic], a directional prefix is optional and tends not to be attached, e.g., (21).

- (19) nDrapa        ŋoro1        (rosa3)        kjemΛ1        Λ-cci1        t-ε3.  
                          3SG            (soon)        cloths        UPW-put.on        IPFV-FAC.IPFV

“He will (soon) put on the cloths.”

(20) nDrapa    pʌfɰʌ3    tɛuu2    tɔndɔ1    tʃhɛ=t-ɛ3.  
 child        now        cup        break=IPFV-FAC.IPFV

“The child is breaking (a lot of) cups now.”

(21) nDrapa    somuŋi3    ŋa=rʌ3    pʌfɰʌ3    fiɣɛhɣɛ=wu3    ji=t-ɛ3.  
 tomorrow    1SG=GEN    child        teacher=ACC    help=IPFV-FAC.IPFV

“My child is going to help the teacher tomorrow.”

In rGyalrong, the empty P2 slot indicates the non-past tense, as in (22). The direction can be expressed by other strategies, such as adverbials. However, a directional prefix may be used, in rare instances in which the speaker strongly intends to use it, as in (23) and (7) repeated below.

(22) rGyalrong    ña        din {Ø-dit-ñ}.  
 1SG        Ø-give-1SG

“I (will) give (something).”

(23) rGyalrong    šimomo    yiŋo    santsam    mə-ku-ta-y,    makmə  
 now        1PL        border        COND-UST-go-PL    soldier

kupjaj {kə-wu-pja-y}.  
 UST-3>1-arrest-1PL

“If we go to the border, we will be arrested by the soldiers.”

(7) rGyalrong    təmu        mə-nə-rtsi        no-ño-y,        ña        ka-čhe  
 weather        COND-EVI-good        EVI-LKV-LOC        1SG        INF-go

ñ-əsem                    ma-na-we.  
 1SG:GEN-feeling        NEG-DWN-come

“I don’t want to go, even if the weather is good.”

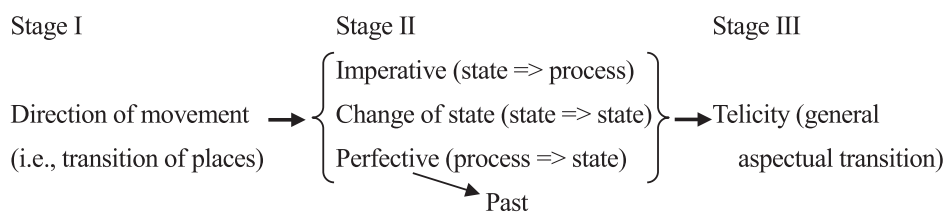
The rGyalrong non-past examples with directional prefix that we have found so far are limited to telic cases. This may suggest a potential correlation between telicity and directional markers. However, the fact that most non-past sentences lack a directional prefix (e.g., (22)) suggests that the correlation is limited. We tentatively conclude that the function of directional prefixes has been expanded to a telicity marker in nDrapa, though rGyalrong is in the beginning stages of such a functional expansion.

#### 4. Stages of grammaticalization

The directional prefixes in Qiangic languages are thought to have been grammaticalized from other words such as motion verbs (Nagano 1984a, b)<sup>7</sup> and then undergone grammaticalization from directional markers to other grammatical markers. Here, we discuss the latter grammaticalization on the basis of the abovementioned facts regarding nDrapa and rGyalrong.

Grammaticalization is generally characterized by morphological reduction and semantic bleaching. Morphologically, directional prefixes have not undergone further reduction in either language. However, the difference of their positions in the verbal complex may suggest different stages of grammaticalization: in rGyalrong, a directional prefix occurs at a position closer to the verb than other prefixes, such as a negative prefix, whereas in nDrapa, a directional prefix always occurs at the leftmost position of the verb complex. We tentatively conclude that the former type is morphologically at a more advanced stage of grammaticalization.

In terms of the semantic/functional dimension of grammaticalization, Nishida (1989: 807) identified two stages of functional development for directional prefixes: [I] directional prefixes that are used both in the past and non-past; and [II] those that are used only in the past (see Fig. 2 for details). However, the behavior of nDrapa directional prefixes does not fit either of these categories. Moreover, Nishida's classification does not take the imperative, change of state, or telicity into account.



**Figure 3** Stages of grammaticalization of directional markers (conjectural)

Here, we hypothesize the stages of functional generalization (or semantic bleaching) illustrated in Fig. 3 on the basis of the notion of transition or boundary crossing (Tatevsov 2002: 330–332; Desclés and Guentchéva 2012: 127; Shirai 2018). In the first stage, the transition that the directional prefixes refer to is limited to the context of location, though they can be used regardless of the tense, aspect, and mood. This stage corresponds to Nishida's [I]. In the second stage, the limitation to location is lost so that the function has expanded to aspectual transition, albeit still partially. In the third stage, further expansion has led the directional prefixes to mark telicity. In this hypothesis, nDrapa is in the third stage,

<sup>7</sup> Whether this is true in the case of the directional affixes of Proto-Tibeto-Burman remains unclear. Nishida (1989: 806–807) maintains that Proto-Tibeto-Burman also had certain directional prefixes.

while rGyalrong is in the second stage, along with Tangut. Besides, the functional expansion from the perfective (Stage II) to the past may occur naturally, as seen in rGyalrong.

However, the order of the second and third stages remains controversial. Another possibility is that the function of directional markers has first become associated with telicity and then developed into the different aspects and moods. This would seem to agree with the generalization by Bybee et al. (1994: 81–87), i.e., the development from anterior (Perfect) to perfective and simple past. Nevertheless, we tentatively conclude that the hypothesis illustrated in Fig. 1 is more reasonable in the present study, since in other Tibeto-Burman languages such as Lai, parts of directional markers are distributively developed into markers of parts of tense/aspect (Peterson 2003: 414–415, Kavitskaya 1997: 176–178). We expect that further contrastive studies on other languages will clarify the historical development of directional prefixes.

## 5. Concluding remarks

The present paper conducted a contrastive discussion on the functions of directional prefixes in Mätro nDrapa and Bola rGyalrong. We concluded that rGyalrong is at a more advanced stage of morphological development. Moreover, we proposed a tentative hypothesis for the stages of functional abstraction occurring in the process of grammaticalization: [I] directional prefixes that indicate a transition between places, i.e., direction of motion; [II] directional prefixes that indicate part of an aspectual/modal transition such as the imperative, a change of state, and the perfective; [III] directional prefixes that indicate telicity, i.e., a more general aspectual transition. The change from the perfective to the past may occur in each language at Stage II. According to this scale, nDrapa is in Stage III, even though the function to indicate the past is not fully developed, while rGyalrong is in Stage II.

## Abbreviations

1	first person	DST	downstream D
2	second person	DWN	downward D
3	third person	EVI	evidential
>	action going from left to right	EXP	experiential
ACC	accusative	FAC	factual
APP	applicative	GEN	genitive
CAUS	causative	HON	honorific
COND	conditional	IMP	imperative
D	directive	INF	infinitive
DEF	definite	INW	inward D
DHL	downhill D	IPFV	imperfective

ITR	iterative	PL	plural
LKV	linking verb	PROG	progressive
LOC	locative	PROH	prohibitive
NEG	negative	PST	past
NFC	neutral factual	Q	question
NTL	neutral D	SG	singular
OUT	outward D	UHL	uphill D
P	prefix	UPW	upward D
PFT	perfect	UST	upstream D
PFV	perfective		

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