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The grammatical encoding of space in Yonghe Qiang

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ABSTRACT

Like other languages of the Western Sichuan linguistic area, the Yonghe variety of Qiang has robust grammatical systems for spatial concepts. Within the noun phrase, there are specialized locative casemarkers for different degrees of distance of the object being located. There is also a set of locational nouns, which are structured based on an intrinsic frame of reference, at least for some speakers. In the verb phrase, there is a system of five existential verbs, four of which have locational semantics; choice of existential depends on containment and attachment, then secondarily on the animacy of the referent being located. There is also a set of eight directional prefixes. These have different discourse frequencies, reflecting different levels of prefix-verb collocation. In addition, the prefixes primarily occur in perfective clauses and imperatives; however, they are optional when an adverbial phrase is also used. Thus, the system approximates derivation rather than inflection. These patterns of distribution, together with comparative data from other Western Sichuan languages, suggest a grammaticalization pathway from directional prefix to perfective to imperative.
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KEYWORDS

space, locational, directional, distance, frame of reference, casemarker, existential, affix, perfective, imperative, discourse, grammar, grammaticalization

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1 Introduction

The Qiang language complex, also called the Rma language-complex (Evans and J. Sun to appear), is a continuum of language varieties spoken by about 110,000 people in Western Sìchuān, China. Qiang (< Northeastern Tibeto-Burman; Bradley 1997) is spoken by those designated as belonging to the official Qiang ethnicity by the People's Republic of China, as well as by those classified as Tibetans in Heishui County. Autonyms of the different groups that speak these language varieties include: [rmæ, rma, ʐme, mǎɪ, ma, χma, ɱa], among others.

The Yonghe variety of Qiang (called *mǎɪ zɨtá*) is spoken in Yonghe Township, Mao County (Maoxian), Aba Prefecture, Sichuan, China.[1] The Yonghe valley has a population of approximately 3,300 people and is organized into five administrative villages comprised of seventeen natural villages.

The Yonghe valley *lwìtá-qhʷá* is situated between the Sichuan basin and the Tibetan plateau on the east side of the Min river. A river runs along the valley that feeds into the Min River. The Yonghe variety is endangered, as children in the villages further downstream towards the entrance of the valley are not acquiring the language and becoming monolingual in the local variety of Sichuanese Mandarin. There is minor variation among different villages within the Yonghe valley, with Lili (*dzìdzí-pù*), Ka'er (*khǎɪ-pù*) and Yongning (*qhʷètɕí-pù*) villages representing at least three different sub-varieties. Yonghe Qiang is in contact with Sichuanese Mandarin, as most Yonghe speakers are bilingual in Sichuanese and Qiang. The Yonghe variety is mutually intelligible only with the variety of Qiang spoken in the neighboring Goukou Township and belongs to the SE Maoxian subgroup of Qiang (see Sims 2014, 2016 for further discussion of the position of Yonghe in different subgroupings of Qiang varieties).

This study is based on the speech of Ka'er village, which is situated on the west side of the valley at an altitude of 2,300 meters (31.852418, 103.828678). The data has been especially enriched

[1] The following are the phonemes of Yonghe Qiang: consonants /p, t, k, q; ph, th, kh, qh; b, d, g; ts, tɕ, tʂ; tsh, tɕh, tʂh; dz, dʐ, dʑ; s, ʂ, ɕ, x, χ, h; z, ʐ, ʑ, ɣ, ʁ, ɦ; m, n, ŋ; w, j; l, ɬ /; and vowels /i, ɨ, u, ɔ, ɛ, ə, æ, ɑ/. All but the mid vowels /ɛ/ and /ɔ/ have rhotic counterparts. The distinction between /æ/ and /ɑ/ and /ə/ is neutralized when these vowels are rhoticized. Non-high rhotic vowels are transcribed as [aɪ] in order to avoid making a claim about their underlying representation. Yonghe has both word-level stress-accent as well as a privative tonal contrast in which /L/ is the relevant tone. Accented toneless syllables are high /á/, accented syllables with tones are realized as rising /ǎ/, and unaccented syllables are realized as low [à] (Sims 2017).

by the observations and contributions of Mr. Yáng Zhīquán, Sims' primary consultant, who is a traditional *ɕwìpí* 'shaman'.

The broader region in which Yonghe is situated has been called the 'West Sichuan Ethnic Corridor' (WSEC), a highly diverse linguistic area or *Sprachbund* (Chirkova 2012). Languages of this region have a variety of shared typological characteristics, such as large consonant inventories (H. Sun 2001), multiple existential verbs (Chirkova 2012, B. Huang 2013), and direction-marking verbal prefixes (H. Sun 1981, Shirai 2009, Thurgood 2017). Many of these features are shared by certain Tibetic languages in the region, as well as by non-Tibetic languages such as rGyalrong, Prinmi, etc.

Like other languages of the WSEC, Yonghe Qiang expresses spatial concepts throughout the nominal and verbal morphosyntax. This paper provides an overview of the various areas of grammar that encode spatial relationships. We begin with the noun phrase (§2), where we find spatial concepts encoded by casemarkers and locational nouns. We then turn to the Yonghe verb. Of particular interest is a set of five existential/locational verbs structured semantically around concepts of animacy, containment, and attachment (§3.1). Another central feature of the grammar is a set of eight directional prefixes structured into four antonymic pairs (§3.2). These obligatorily occur in perfective contexts and some imperative constructions. Using discourse data, we illustrate that the prefixes are used with different frequencies and have different patterns of productivity with regard to their ability to co-occur with verb stems. While some verb stems can take any of the eight prefixes, most select a subset of prefixes and there are many fixed collocations of particular prefixes with verbs.

The primary data for this study is Nathaniel Sims' corpus of Yonghe discourse. The corpus includes traditional narratives and songs, elicited Pear Film retellings (Chafe 1980), and recorded oral exchanges mediated by the smart phone app WeChat. The total size of the corpus is 5,097 words and the number of unique forms is 2,348. This data was supplemented by a set of sentences elicited with the "BowPed" topological-relations stimulus materials, developed by members of the Language and Cognition group of the Max Planck Institute for Psycholingustics (Bowerman and Pederson 1992). The data set includes thirty sentences collected in this manner. Although the corpus is small, the frequency with which the forms occurs allows us to observe a number of patterns described here; further insights would undoubtedly be available in a larger corpus.[2]

2 Spatial relations encoded in the noun phrase

Spatial relations are encoded in the Yonghe noun phrase through casemarkers (§2.1) and a set of locational nouns (§2.2).

2.1 Locative and ablative casemarkers

There are four casemarkers used to denote spatial location. Three of these are general locatives that differ only in proximity, i.e., whether the object being located is close to the speaker ('here'), somewhat distant ('there'), or quite far away ('way over there', 'in the distant past'). The same three forms also function as locational demonstratives. These are differentiated from the casemarkers

[2] Aside from these sources, some examples are from Sims' fieldnotes taken throughout trips to Ka'er Village between 2006 and 2016. These examples are labeled "fieldnotes" and are specified as either "elicited," "offered," or 'from conversation."

as they are free forms with flexibility in positioning, in contrast to the casemarkers, which are enclitic to the noun phrase.[3] The casemarkers are exemplified in (1) to (3): [4]

(1) *á kjȅntsá dæ̀mǽ ȅjɛ́*
á kjèn-tsá dæ̀mǽ ȅ-jɛ́
1SG house-LOC.PROX well in.IMP-stay
'Live well here in my house' (behave yourself!) (YZQ.SH.265)

(2) *ú tsùpáthà ɦàɪkáɪnæ̀ ɔthȅkì*
ú tsùpá-thɑ ɦàɪ-káɪ=næ̀ ɔ́-thȅ-kì
2SG river.bank-LOC.DISTAL downwards.PFV-go.PFV=LNK inwards.IMP-eat-go
'You go down to the river and drink.' (YZQ.DB.24)

(3) *á nápùɹhá sɨkàɪnæ̀*
á nápùɹ-há sɨ́-kàɪ=næ
1SG Lapu-LOC.far downstream.PFV-go.PFV=LNK
'I went downstream to Lapu and …' (YZQ.BT.1-2)

The distinction between the three phonologically similar demonstratives is neutralized in fast speech, with all three suffixes reducing to a simple low vowel. As a result, it is difficult to determine the relative frequencies of the different suffixes. The distinction between the three morphemes may be collapsing for younger speakers.

In context, more specific locative notions (such as adessive and inessive; examples 4-5) can be inferred from the shape of the referent of the noun. The locative also can also have an allative reading when the predicate is a motion verb (example 6).

(4) Adessive
qɔ̀pátʂɨ̀há dʷìxʷí ɦàmàtɛ́
qɔ̀pátʂɨ-há dwìxí ɦà-mùtɛ́
head-LOC forehead down.PFV-rub
'(He) rubbed the horse on its forehead.' (YZQ.SH.362)

(5) Inessive
háwɕjæ̀ŋ tìmíhá tɕə̌w ɔ́w ɔ̀nə̌j
háwɕjæŋ tìmí-há tɕə̌w ɔ́-w ɔ̀-nə̌j
seems.like < Ch. heart-LOC just one-CLF in.PFV-know-MED
'It seems like he knew it in his heart.' (YTD.PF.41)

[3] The surface pitch patterns for the casemarkers are determined by an interaction between tonal and accentual properties of the nouns to which they attach. Thus, we see variation in pitch patterns for these morphemes.
[4] Glosses follow the Leipzig glossing rules. Other abbreviations used include: BOR auxiliary loanword marker, DIR directional marker, DISC discourse, EVID evidential, LNK clause linker, MED mediative marker, HORT hortative, POL politeness marker, PROS prospective aspect.

(6) Allative
tʂùwú tɕə̌w ɦəɹkə́ɹnæ̀ tɕə̌w tsùpáhá thə́kìj
tʂùwú tɕə̌w ɦəɹ-kə́ɹ=næ tɕə̌w tsùpɑ́-hɑ thə́-kì-j
3SG just down.PFV-go.PFV=LNK just riverbank-LOC drink-go-MED
'He then went down to the river to drink.' (YZQ.DB.24)

The other casemarker is the ablative *-sɨ*. This can co-occur with the locative (as in 7), or be used independently (8). As in many Tibeto-Burman languages, the ablative has a number of grammatical functions, including marking agentive or genitive case and occurring as a nominalizer.

(7) *də́kɨ̀ mùtúhásɨ̀ ɦɛ̀tɕhwínæ̀*
də́kɨ̀ mùtú-há-sɨ̀ ɦɛ̀-tɕhwí=næ̀
ladder above-LOC-ABL down.PFV-take=LNK
'(She) took it down from above the ladder and …' (YZQ.EM.199)

(8) *tàtásɨ̀ ɦɛ̀thjǽ*
tùtɑ́-sɨ̀ ɦɛ̀-thjǽ < (thi + ɑ)
far.away-ABL down.PFV-bring:1SG
'I brought it from far away.' (YZQ.SH.84)

2.2 Locational nouns

Yonghe Qiang has a class of ten locational nouns that form the primary system of encoding topological relations, i.e., the spatial relationship between a figure and a ground. The ten locational nouns are presented in Table 1.

Form	Gloss
kùkú	'inside'
kɦwɛ̀ɳwí	'outside'
xúj	'above'
mùtú	'on top; upper'
kjə̌	'below; lower'
thə̌	'back'
kə̌ɹ [5]	'front'
pjæ̀npjǽ	'beside' < Chinese biān 'side'
ʁáɹ	'left'
ná	'right'

Table 1. Locational nouns in Yonghe

We analyze these as nouns as they can occur independently and, when following nouns, they occur in a genitive construction. The genitive suffix is optional in this construction but occurs with

[5] Some speakers pronounce the word 'front' with uvular a rather than a velar consonant. This is also true for the word 'inside'.

greater frequency with alienably possessed nouns; it is typically absent from inalienably possessed nouns (cf. C. Huang 2004: 144-145). Locations are inherently inalienable with respect to the ground (e.g., a table's top, or a nest's interior). For this reason, the genitive is frequently absent from these constructions, giving them a postpositional quality.

This set of nouns is structured semantically into three antonymic pairs (inside-outside, front-back, left-right), plus one set of three terms that incorporates an antonymic dimension but splits one side of the contrast into an additional two-way distinction (above-on top-below). In addition, there is one term borrowed from Chinese that allows for the specification of elements to the side without requiring delimitation as left or right. Each set of terms is further discussed and exemplified below.

These locational nouns are typically suffixed by the locative casemarker *-há*, although this can fuse with a preceding vowel, or be dropped to meet rhythmic requirements of a song or other ritual text.

2.2.1 Containment: Inside-outside

The first antonymic pair, *kùkú* 'in/inside' and *khwèɳ̊wí* 'out/outside', construes the ground as a container and locates the figure with respect to the container's interior or exterior. These terms can be used to denote both the static location of the figure with respect to the container (1) or the dynamic movement of the figure into or out of it (2). When denoting static location, these nouns are suffixed by the locative casemarker *-há*, as illustrated in (9) (ellipses indicate intonation boundaries). The casemarker is absent when indicating motion trajectories, as in (10):

(9) *wàjí wùʈ́á kùkú-há tɕə̌w … wàjí … wàjí-tɕwí … jĭj lé̱j*
wə̀jí-wùʈ́á kùkú-há tɕə̌w … wə̀jí … wə̀jí-tɕwí … jĭ-j lé̱-j
bird-nest inside-LOC just bird bird-DIM two-CLF exist-MED
'There were two little birds inside of the bird's nest.' (YZQ.IS.44-47)

(10) *kíwùnà ʑípùkàɪwáɪ thə̀kì tɕə̌w dʑwìtá khwèɳ̊wí hèlwínǽ*
kí=wunæ ʑ́ípù-kàwáɪ thə́-kì tɕə̌w dʑ́wìtá khwèɳ̊wí hè-lwí=næ
thus=TOP demon-king that-CLF just doorway outside out.PFV-come=LNK
'In this way, that demon king came out of the doorway.' (YZQ.PLP.101)

2.2.2 The vertical axis: Up-above-under

There are three locational nouns that locate figures with respect to the vertical axes of the grounds. Of these, two are commonly used: *mùtú*, which denote figures that are vertically higher than the ground, and *kjà*, which denotes figures that are vertically lower. A third locational noun *xúj* is not commonly used. It does not appear in the discourse corpus and is not a form chosen in the BowPed elicitation task. Example (11) was observed in a conversation and recorded in fieldnotes. Like *mùtú*, it is used to describe a relationship where one object is vertically higher than another. The context for this example was describing the location of a backpack that was in a closet on the upper floor of a house.[6]

[6] This form is also prefixed to the noun *mjáná* 'side' (< Ch. miàn + LOC *-á*) to mean 'upper side' (*xúj-mjáná;* compare *kjà-mjáná* 'lower side').

(11) *ú pànáxújà séj*
ú pànáxúj-à sé-j
2SG things above-LOC exist-MED
'Your things are up above.' (Fieldnotes, from conversation)

The commonly used Yonghe form *mùtú* is cognate with the word for 'sky' in other Qiang varieties (e.g., Ronghong *mutu ~ mutup* 'sky'). As a locational noun in Yonghe, it means 'on', 'on top of' or 'in the upper part of'. Example (12) comes from a folk song describing the building of traditional houses. The phrase *ɔ ʂwa lɔ ti ʂɔw* constitutes the chorus that brackets the main lyric.

(12) *ɔ ʂwa lɔ ti ʂɔw xɬəɳi mùtú ɳíkì tsùjá ɔ ʂwa lɔ ti ʂɔw*
ɔ ʂwɑ lɔ ti ʂɔw xɬə-ɳí mùtú ɳíkì zù-já ɔ ʂwɑ lɔ ti ʂɔw
soil-black atop what make-DISC
(Chorus) 'What do we place on top of black soil?' (Chorus)

ɔ ʂwa lɔ ti ʂɔw xɬəɳí mùtú xɬəxí tsùjá ɔ ʂwa lɔ ti ʂɔw
ɔ ʂuɑ lɔ ti ʂɔw xɬə-ɳí mùtú xɬə-xí zù-já ɔ ʂwɑ lɔ ti ʂɔw
soil-black atop soil-red make-DISC
(Chorus) 'We place red soil on top of black soil!' (Chorus) (LDY.HBS.31-32)

Examples (13-14), which show the use of *mùtú* in describing situations both with and without contact, were elicited using Figures 1 and 2.

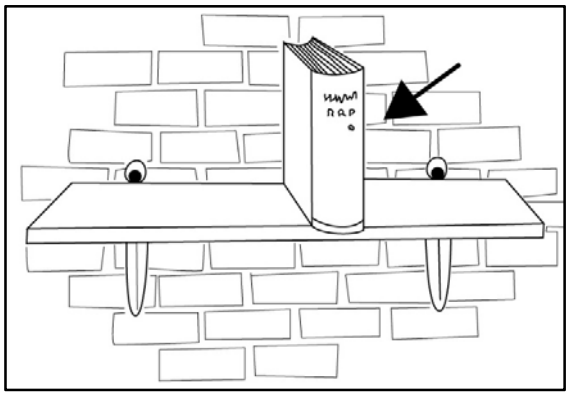

Figure 1. Bowerman and Pederson (1992) Picture #8

(13) *tʂwətsɿ mùtúhá lǎɹʐ̩ əpán séj*
tʂwətsɿ mùtú-há lǎɹʐ̩ ə-pán sé-j
table atop-LOC book one-CLF exist-MED
'There is a book on the table'. (YZQ.BP.8)

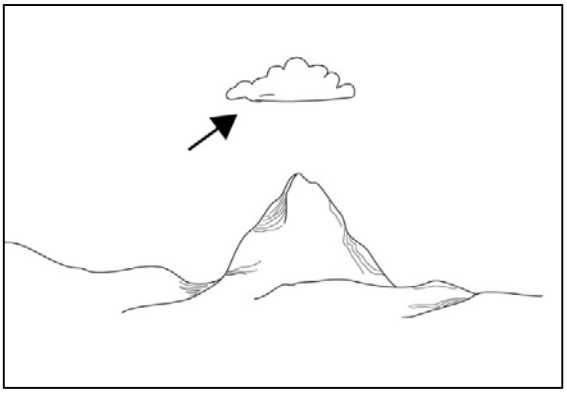

Figure 2. Bowerman and Pederson (1992) Picture #36

(14) *ɣwáɹpù mùtúhá dá ə̀thɔ̀ sɛ́j*
ɣwáɹpù mùtú-há dá ə́-thɔ̀ sɛ́-j
mountain above-LOC cloud one-CLF exist-MED
'There is a cloud above the mountain.' (YZQ.BP.36)

The noun *kjă* denotes a figure that is vertically lower than a ground, either with or without contact. Examples (15) and (16) were elicited using Figures 3 and 4:

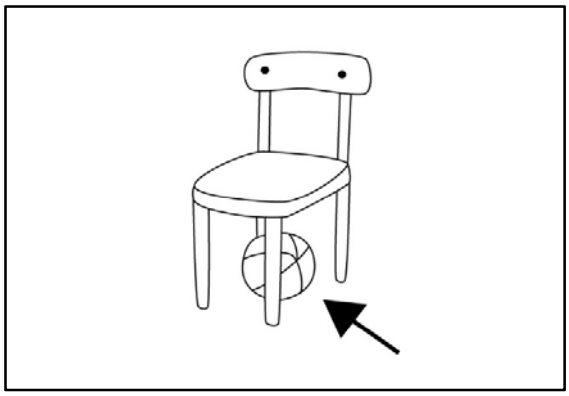

Figure 3. Bowerman and Pederson (1992) picture #16

(15) *dátsɿ̀ kjàhá ʐ̩́tɛ̀sɿ̀ ə̀tə́ sɛ́j*
dátsɿ̀ kjà-há ʐ̩́tɛ̀-sɿ̀ ə̀-tə́ sɛ́-j
chair below-LOC play-INS one-CLF exist-MED
'There is a basketball below the chair.' (YZQ.BP.16

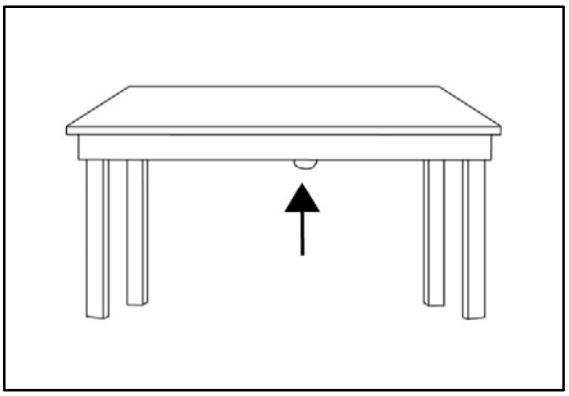

Figure 4. Bowerman and Pederson (1992) Picture #53

(16) *tʂʷə́tsɨ̀ kjàhá pànáˊ ətə́ ʷéj*
tʂwə́tsɨ̀ kjù-há pùnáˊ ə-tə́ wɛ́-j
table below-loc thing one-clf exist-med
'There's a thing underneath the table.' (YZQ.BP.53)

2.2.3 The horizontal axes: Front-behind-side-left-right

There are five locational nouns which indicate positions on horizontal axes from the ground: *thă* 'behind', *kăɹ ~ kàɹkáɹ* 'in front', *pjæ̀npjǽ* 'beside', *wáɹ* 'left', and *ná* 'right'. All of the terms on the horizontal axis form an orientation system that has an intrinsic frame of reference (Levinson 2003); grounds are conceptualized as having inherent fronts, backs, and sides, and figures are located accordingly.

The locational noun *thă ~ thàwá-kjɛ́* 'behind' is transparently related to the word *thàwá-kjɛ̀* 'buttocks' (cf. Ronghong *sta*). The development of lexemes with this meaning into markers of spatial deixis is well attested in other languages and follows a general grammaticalization pathway whereby body parts are used to express spatial locations (e.g., Heine, Claudi, and Hunnemeyer 1991:152; see Heine and Kuteva 2002:62 for 'buttocks' specifically). Example (17) was produced when the speaker was asked to describe Figure 5.

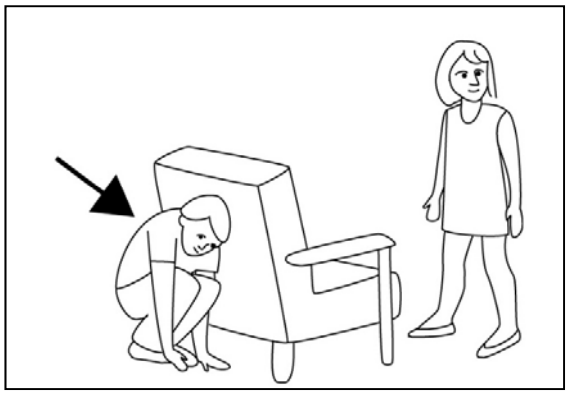

Figure 5. Bowerman and Pederson (1992) Picture #64

(17) *dátsɨ tàwákjɛ̀há mí ɛkjɛ jɛ́j*
dátsɨ tàwákjɛ́-há mí è-kjɛ́ jɛ́-j
chair back-LOC person one-CLF exist-MED
'There is a person behind the chair.'

By contrast, the form *kǎɹ* means 'in front' (cf. Ronghong *qəːɹ*) . Figure 5 can also be described by example (18).

(18) *dátsɨ kàɹkáɹhà mæ̌ èkjɛ́ jɛ́j*
dátsɨ kàɹkáɹ-hà mæ̌ è-kjɛ́ jɛ́-j
chair front-LOC mother one-CLF exist-MED
'There is a mother in front of the chair.' (YZQ.BP.64.2)

The word *kǎɹ* can be reduplicated to give the meaning of further in front. Compare examples (19) and (20).

(19) *qá kàɹthá ʐɨ̀tɛ̀sɨ̀ ə̀tə́ sɛ́j*
qá kàɹ-thá ʐɨ̀tɛ̀-sɨ̀ ə̀-tə́ sɛ́-j
1SG front-LOC play-INS one-CLF exist-MED
'There is a basketball in front of me.' (Fieldnotes, offered example from YZQ)

(20) *qá kàɹkáɹthà ʐɨ̀tɛ̀sɨ̀ ə̀tə́ sɛ́j*
qá kàɹkáɹ-thà ʐɨ̀tɛ̀-sɨ̀ ə̀-tə́ sɛ́-j
1SG front-LOC play-INS one-CLF exist-MED
'There is a basketball further in front of me.' (Fieldnotes, offered example from YZQ)

Example (21) also illustrates the reduplicated form; it was used in describing Figure 6.

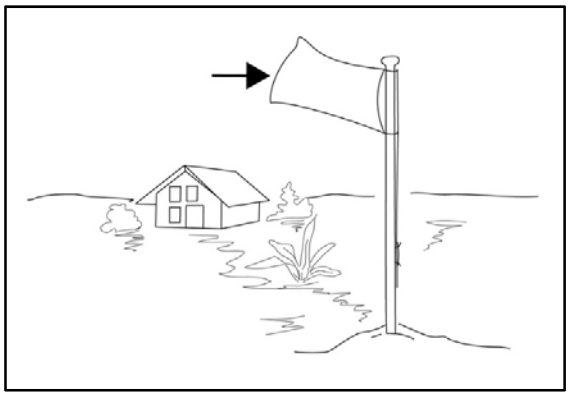

Figure 6. Bowerman and Pederson (1992) Picture #56

(21) *tɕí kàɪkáɪthà dʑí ə̀lə́ wéj*
tɕí kàɪkáɪ-thɑ dʑí ə̀-lə́ wé-j
house front-LOC flag one-CLF exist-MED
'There is a flag in front of the house.' (YZQ.BP.56)

Both *kǎɪ ~ kàɪkáɪ* 'front' and *thàwá-kjɛ́* 'back' can be extended metaphorically into the temporal realm, with 'front' referring to temporal locations that precede others and 'back' referring to temporal locations that follow. This suggests a conceptualization of time where one is facing the past, the temporal realm which one has experienced and so is visible, while the future is behind one, invisible and unknowable. This is comparable to the situation in Chinese, in which the 'past' and 'present' are described as 'front' and 'back' respectively (Boroditsky 2000). When used in this manner, the forms function as temporal adverbs and are not embedded in noun phrases; this usage is exemplified in (22 – 24).

(22) *tsɨ́tə̀ pànáɪ kàɪkáɪsɨ̀ wújˀ*
tsɨ́-tə pànáɪ kàɪkáɪ-sɨ wú-j
this-CLF thing front-ABL COP-MED
'This is a thing from the past.' (Fieldnotes, offered example from YZQ)

(23) *thàwákjɛ́ mí ə̀tə́*
thàwá-kjɛ́ mí ə̀-tə́
back-CLF person one-CLF
'Later on, one person …' (YZQ.HG.17)

(24) *tə̀xí hə́tə̀ kǎɪ nɛ̀lɛ́j*
tə̀xí hə́-tə̀ kǎɪ nɛ̀-lɛ́-j
gold that-CLF front upstream.PFV-exist-MED
'(He) put that gold one in first.' (YZQ.SH.61)

The form *pjɛ̀npjɛ́* 'beside', is a borrowing from Chinese *biān*. This borrowing is also found in the Ronghong variety (LaPolla and C. Huang 2003:59; C. Huang 2015:671). As in Ronghong, this loanword does not take the locative suffix.

(25) *tǐ pjɛ̀npjɛ́ tʂájìnæ̀ tɕə̌w "lítɕì lítɕì" jìwù-tɕhí*
tǐ pjɛ̀npjɛ́ tʂá-jì-næ tɕə̌w "lítɕì lítɕì" jì-wù-tɕhí
earth < Ch. side arrive-CSM=LNK just (herding call) say-3P-need
'When you get to the side of the field you need to yell "lítɕì lítɕì" (to the ox).' (YTY.PF.30)

While *pjɛ̀npjɛ́* indicates either side of a figure, 'left' and 'right' indicate particular sides with respect to the inherent frame of reference. Although Yonghe Qiang has native terms *wáɪ* 'left' and *ná* 'right', they are not commonly used in conversation and do not appear in the corpus of spoken texts; the Chinese loans *zuǒ* 'left' and *yòu* 'right' are used instead.

The native terms do occur in phrases found in naturally produced descriptions of the Bowerman and Pederson figures. In these cases they occur bound to a nominal root, either *tɕhǽ* 'side' or *zí* 'hand', and function as adverbs.

These examples reveal an intrinsic frame of reference (Levinson 2003). That is, 'left' and 'right' are used to refer to the relationship of the figure and ground from the perspective of the ground, as opposed to the perspective of the speaker. Example (26) was produced when the speaker was asked to locate the dog with respect to the doghouse in Figure 7:

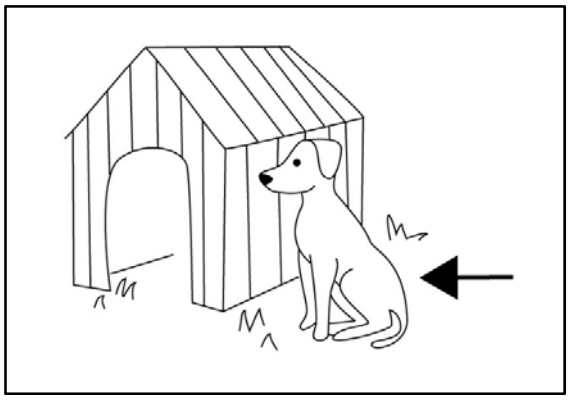

Figure 7. Bowerman and Pederson (1992) Picture #6

(26) *tɕísì wàɹtɕhǽhá khʊwí ə́tə́ jɛ́j*

tɕí-sì	wàɹ-tɕhǽ-há	khwí	ə́-tə́	jɛ́-j
house-GEN	left-side-LOC	dog	one-CLF	exist-MED

'There is a dog on the left side of the house.' (YZQ.BP.6)[7]

The spatial term *wàɹ-tɕhǽ* 'left side' here invokes a conceptualization of the house with a front and locates the dog from the perspective of the house so oriented. This is unlike the use of such terms in languages like English, where 'left' and 'right' are relative to the orientation of the speaker viewing the picture. Note that this is also different from the use of the cognate form in Ronghong, which uses a relative frame of reference, so locates objects to the left from the speaker's perspective (Huang 2015: 683).

Although our corpus is small, some evidence suggests that speakers might use either relative or intrinsic frames of reference when speaking Qiang, possibly under the influence of Sichuanese or other Qiang varieties. The picture in Figure 8 elicited two different responses from speakers, one from Mr. Yang Zhiquan (age 46) and another from his apprentice (age approximately 30).

[7] The genitive is optional in this example.

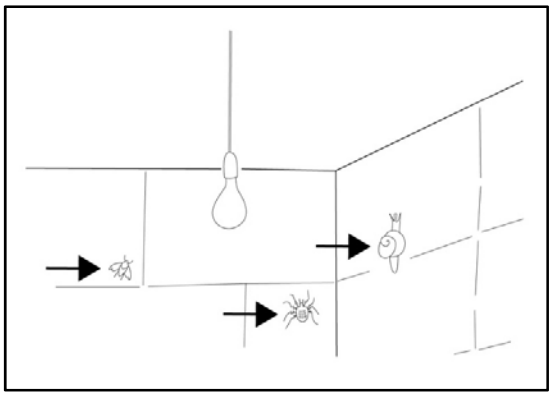

Figure 8. Bowerman and Pederson (1992) picture #52

(27) a. Yang Zhiquan: *bùthíthà bùɳìχáɪ ətə́ jɛ́j*
bùthí-thá bùɳìχáɪ ə-tə́ jɛ́-j
wall-LOC house.fly one-CLF exist-MED
'There's a fly on the wall.'

b. *ʑìwáɪ bùʂá ətə́ jɛ́j*
ʑì-wáɪ bùʂá ə-tə́ jɛ́-j
hand-left spider one-CLF exist-MED
'The spider is on the left (on the wall),

c. *ʑìná ..*
ʑì-ná …
hand-right
and on the right …'

d. Apprentice: *ɳìwújà*
ɳì-wú-jà
NEG:COP-COP-DISC
'That's not correct.'

e. Yang Zhiquan: *ʑìná bùʂá ətə́ jɛ́j*
ʑì-ná bùʂá ə-tə́ jɛ́-j
hand-right spider one-CLF exist-MED
'The spider is on the right.'

f. *ʑìwáɪ bùɳìχáɪ ətə́ jɛ́j*
ʑì-wáɪ bùɳìχáɪ ə-tə́ jɛ́-j
hand-left house.fly one-CLF exist-MED
'The fly is on the left.'

We see that Mr. Yang begins with an intrinsic orientation where the wall has a front that is facing the speaker; from this orientation, the spider is on the wall's left. He is then questioned by his apprentice in line d, and then switches to a relative orientation when describing the bugs in lines e-f. These two speakers also demonstrated different frames of reference when describing Figure 9.

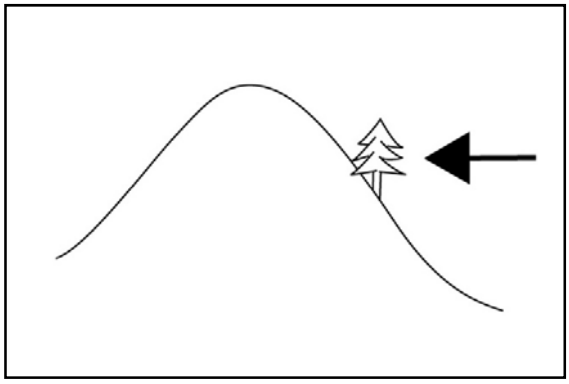

Figure 9. (Bowerman and Pederson 1992) picture #17

(28) a. Yang Zhiquan: *ɣwàɹpú wàɹtɕhá …*
ɣwàɹpú wàɹ-tɕhú …
mountain left-side
'The left side of the mountain …'

b. Apprentice: *yoùbiān méj*
yoù-biān méj
right-side DISC
'You mean the right side!'

c. Yang Zhiquan: *yoùbiān jǽ?*
yoù-biān jǽ
right-side Q
'The right side?'

d. *ɣwàɹpú nàtɕháthà phú ətə́ wéj*
ɣwàɹpú nà-tɕhá-thà phú ə-tə́ wé-j
mountain right-side-LOC tree one-CLF exist-MED
'There is a tree on the right side of the mountain.'

Note that unlike a house, a hill does not have an intrinsic front. Mr. Yang's choice of *wáɹ* 'left' indicates that he is conceptualizing the hill as facing the viewer in the picture and then using that as the basis for the intrinsic frame of reference by which he locates the tree. Interestingly, when the student corrects him, he uses borrowed Chinese forms that invoke a relative frame of reference, which Mr.

Yang then applies as he changes the Qiang. Mr. Yáng appears to be an interesting case of a full bilingual whose two languages use competing frames of reference.

3 Spatial encoding in the verb phrase

Within the verb phrase, spatial relations are encoded through three interacting grammatical subsystems: existential verbs with inherent spatial relations; a set of directional marking prefixes; and spatial and directional adverbials. The latter forms will not be discussed here.

3.1 Existential verbs with inherent spatial relations

One of the shared typological features of languages of the Sichuan linguistic area is the presence of multiple existential verbs (Chirkova 2012:162, C. Huang 2013). Yonghe follows suit with its neighbors, with five verbs that perform existential and locational functions. Four of the verbs specifically invoke a figure-ground relationship, while the fifth verb only predicates existence and has no locative semantics. These verbs are used to denote static location only. Some scenarios from the BowPed drawings were interpreted as dynamic by the Qiang consultants, who preferred to use a motion verb rather than an existential predicate (e.g., a picture of a man with a cigarette in his mouth was translated as "the man is biting a cigarette").

Grammatically, the existential construction constitutes the Basic Locative Construction of Yonghe Qiang (Levinson and Wilkins 2006:15). It simply consists of a noun phrase followed by a verb (example (30) below). Ground referents are frequently left unspecified, with their existence inferable from the existential verb and their identity accessible through discourse context or general world knowledge (32). A noun phrase may be used to specifically indicate the ground referent, in which case it takes the general locative casemarker (31, 33).

The most general of the verbs is the simple existential *xú*, which has no locational function. It denotes that something exists or is available or accessible; if negated, it indicates that something no longer exists. Both the negated and non-negated forms of the verb are exemplified in (29):

(29) *kàɹkáɹ tjǽnʂɨ mɔ̀xúj, pɨ́tɕɛ̀ xùjítì*
kàɹkáɹ tjǽnʂɨ mɔ̀-xú-j, pɨ́tɕɛ̀ xù-jí-tì
front television NEG-exist-MED now exist-CSM-DISC
'There didn't use to be such things as televisions, now there are.' (YZQ.WC.19)

The verb *lɛ́* denotes that a referent is located within a container. The referent can be animate or inanimate, as illustrated in examples (30) and (31):

(30) *ɹàkjɛ́ àpáwpáw lɛ́nà hɛ̀thɛ́thɛ̀tɕhì*
ɹàkjɛ́ à-páwpáw lɛ́=nà hɛ̀-thɛ́thɛ̀-tɕhì
bone one-CLF exist=LNK out-throw-want
'If there's a bag of bones (inside), we need to throw it out.' (YZQ.PLP.18)

(31) *wəjíwùtʂá kùkú-há tɕəw … wəjí … wəjítɕwí … jĭj lɛ́j*
wəjí-wùtʂá kùkú-há tɕəw wəjí … wəjí-tɕwí … jĭ-j lɛ́-j
bird-nest inside-LOC just bird bird-DIM two-CLF exist-MED
'There were two little birds inside of the bird's nest.' (YZQ.IS.44-47)

Perhaps the most interesting verb in the group is *wɛ́*, which is used when a referent (the figure) is either attached to a ground (e.g., a scab or a stamp on an envelope), or has had sufficient physical contact to damage the ground (e.g., a rock that hit someone in the head (i.e. "connects" with it), causing loss of consciousness), or defines negative space (i.e., absence of an expected substance, as with a hole in a piece of cloth or absence of cellphone service) with respect to the ground. An example of the latter is found in (32):

(32) *qá gwĭsɨtsá ɦàpú ətə́ wɛ́j*
qá gwĭ-sɨ-tsá ɦàpú ə-tə́ wɛ́-j
1SG wear-NOM-LOC hole one-CLF exist-MED
'There's a hole here in my clothes' (YZQ.WC.18)

Table 2 presents these verbs with examples of figure-ground pairings where each is used.

Form	Description of Use	Attested scenarios
xú	to exist (general existential; no location specified)	For something to exist, be available, or be accessible; when negated, for something to be dead, finished, or gone
lɛ́	to exist within a container	Birds in nest; bags of bones hidden in floorboards; fish in water; liquor in a cup
wɛ́	to exist attached to another entity; to exist in sufficient contact with another entity to damage it; to exist as negative space with regard to another entity	Scars; scabs; fire; mold on a wall; stamps on a letter; trees; pieces of fabric woven together; flesh on bones; bullets in flesh; rocks that do bodily harm; holes in clothing; accents when speaking a foreign language; cellphone service or wifi connections.
jɛ́	to exist at a location, for animate objects not in containers or attached to a larger entity	Goats on rocks; people on horses; people in a room
sɛ́	to exist at a location, for inanimate objects not in containers or attached to a larger entity	Bowls on a table; basketballs under a chair

Table 2. Existential verbs, meanings, and scenarios

Levinson and Wilkins (2006) discusses the extent to which various semantic notions are likely to be realized through the Basic Locative Construction in a given language (i.e., the construction that occurs as the unmarked response to the question "Where is the X"). In their hierarchy, both 'damage' and negative space are treated as a single node, and this node is adjacent to the one for attachment. The fact that all three notions are marked by a single existential predicate in Yonghe Qiang is further evidence of a strong semantic link between them. The most common and widely used sense of this verb is attachment, which suggests that it is the basic meaning. The other two can be analyzed as extending from this core sense: negative space is inseparable from and defined by its ground and so is figuratively attached; damage requires significant contact between the two entities, perhaps sufficient to establish a conceptual link – or attachment – between them.

As with the other existential verbs, the ground does not need to be specified when *wé* is used, but can be inferred from general knowledge. For example, this verb is used to predicate the existence of trees (example 33); in this case, the choice of an existential verb indicating attachment entails the ground (literally and figuratively in this case).

(33) *phú ə̀wɔ́tsɨ̀ wéj*
phú ə̀-wɔ́tsɨ̀ wé-j
tree one-CLF exit-MED
'There was a tree' (YZQ.IS.44)

It is interesting to note that if both attachment and containment are potentially relevant, attachment takes priority in the selection of the existential verb. Example (34) illustrates this point:

(34) *á djékwì kùkú-tsà pàpá èkjé wé*
á djékwì kùkú-tsà pàpá è-kjé wé
1SG mouth inside-LOC sore one-CLF exit
'I have a sore here inside my mouth.' (YTD.WC.5)

Finally, if the specific spatial parameters of containment and attachment are not relevant, two other existential predicates exist which locate objects at a specified or implied location. The verb *jé* is used if the referent is animate and *sé* is used if the referent is inanimate, as showing in (35) and (36):

(35) *àɪkáɪkìnànì tɕjé hə́tə̀sɨ̀ mǎ hə́tə̀ jéj*
àɪ-káɪ-kì = næ = ni tɕjé hə́-tə̀-sɨ̀ mǎ hə́-tə̀ jé-j
in.PFV-go-go.AUX-LNK=TOP son that-CLF-GEN mother that-CLF exist-MED
'He went in and the son's mother was there.' (YZQ.PJ.37)

(36) *kə̀wú ɦǎpí séj*
kə̀wú ɦǎpí sé-j
bowl many exist-MED
'There are a lot of bowls.' (Fieldnotes, elicted example from YZQ)

Figure 10 presents the overall structure of the system as a flowchart consisting of a series of questions that determine the appropriate verb for a given predication. The first question to be considered is whether the referent is located. If not, the general existential *xú* is used. If so, the question checks as to whether the specific semantic relationships are involved in the order of priority: attachment, containment, animacy.[8]

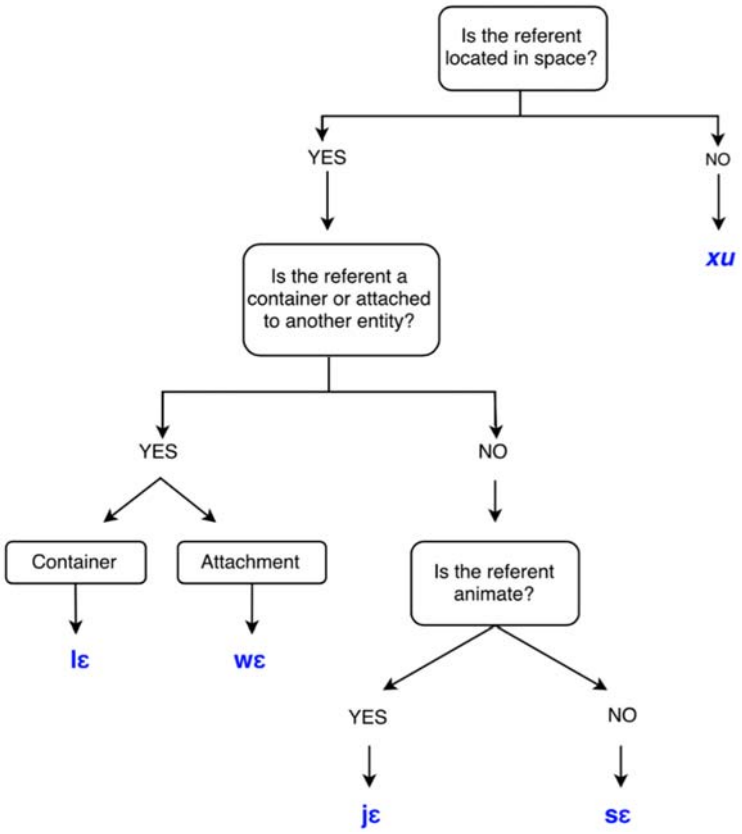

Figure 10. Choosing existential verbs in Yonghe Qiang

3.2 Directional prefixes in Yonghe Qiang

Yonghe has eight verbal prefixes indicating direction. The eight prefixes are organized into four binary pairs that correspond to distinct spatial dimensions: vertical, riverine, towards or away from the deictic center, and into or out of a container. The distribution of these prefixes is complex, as they interact with aspect and construction type in addition to verbal semantics. They have variable behavior, suggesting they fall closer to the derivational side of the inflection-derivation continuum (Bybee 1985). They occur with different frequencies in discourse and they have differential distributions with respect to verb stems. There are many examples of fixed collocations of a given prefix with a given verb.

[8] An anonymous reviewer wondered whether it whether there might be some overlap in usage of these existential verbs. Although a larger corpus could conceivabley find more flexibility in usage, counter examples have not been attested in the data available to us. For example, we find no cases of *sé* used to predicate animate objects and no examples of *jé* predicating inanimate objects.

We begin the discussion by describing the basic phonological and semantic characteristics of the eight prefixes (§3.2.1). We then turn to their interaction with the aspectual system and with particular construction types (§3.2.2). From there, we discuss where they fall with respect to inflectional and derivational prototypes (§3.2.3). Finally, we look at them from a historical perspective (§3.2.4), comparing them to prefixes in other Qiang varieties.

3.2.1 Forms and core semantics of Yonghe directional prefixes

Yonghe directional prefixes occur as the leftmost element of the verb. While they frequently attach directly to the verb stem, the negative and continuous prefixes can intervene. Each of the eight prefixes has multiple allomorphs, largely due to vowel harmony, although the prefixes participate in vowel harmony processes to different extents. The attested allomorphs of each prefix are provided in Table 3, together with the number of examples of each prefix in the discourse corpus. It can be seen that both individual prefixes and particular axes occur with significantly different frequencies. The bar graph in Figure 11 provides another visualization of these frequencies; the Series 1 and 2 labels are cross-referenced in Table 3.

Axis	Category	Form	Allomorphs	n=	Series
Cis/Translocative	cislocative	dzV-	dzɨ-, zɨ-	59	1
	translocative	dV-	dɛ-, dɔ-, dɑ-	33	2
Vertical	Upward	tV-	tə-, tɛ-, ti-, tɑ-, tæ-, taɪ-,	211	1
	downward	hV-	ɦɛ-, ɦə-, ɦɑ-, ɦæ-, ɦɔ-, ɦaɪ-,	207	2
Riverine	upstream	nV-	nɛ-, nə-, naɪ-	13	1
	downstream	sV	sɨ-, sə-	54	2
Containment	inward	V-	ə-, ɛ-, ɑ-, aɪ-, ɔ-	83	1
	outward	hV-	hɛ-, hə-, haɪ-, hɔ-	61	2
			Total:	**721**	
			Corpus Size	5,098 words	
			% of Corpus	**14%**	

Table 3. Directional prefixes, with allomorphs and discourse frequencies

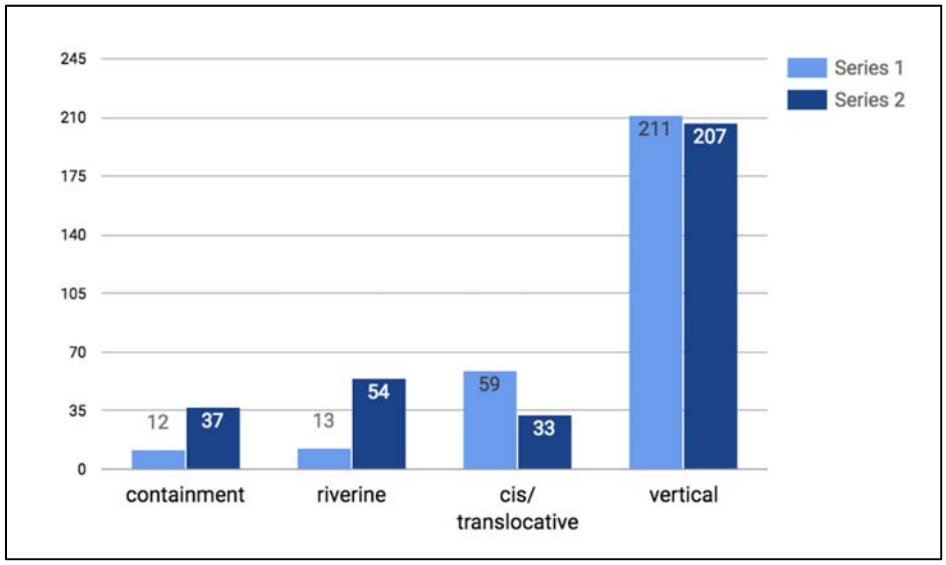

Figure 11. Frequency of directional prefixes in the discourse corpus

In the following sections, we will introduce each axis in order from general to specific: cis/trans-locative, vertical, riverine, and containment. Appendix 1 lists each verb attested with each prefix in the discourse corpus. In addition, elicitation of possible prefix-verb collocations has revealed that some verbs select only a limited number of directional prefixes (frequently one), resulting in lexicalizations where the original meaning of the prefix can become opaque. These will be discussed in the sections on each prefix below.

3.2.1.1 The cis/translocative axis

The cislocative *dzV-* and translocative *dV-* prefixes make up about 12% (92/721) of the directional prefixes in the corpus. This axis is the most semantically general and is used for movement where there is no clear vertical ascent or descent, and where the motion does not follow any set pathway or lead inwards or outwards. These verbs indicate motion towards and away from the deictic center.

Note that this axis has been called "speaker-based" by others (Evans and Sun to appear). We prefer cis/translocative since in Yonghe these prefixes are oriented with respect to a variable deictic center. While this is typically the speaker in conversational discourse, it may also be shifted to the hearer. Consider the following examples, taken from an exchange between Sims in the United States and Qiang speakers in China using the application WeChat.

(37) *ú nə̀kə̀ɹ dzɨ̀lwìwá*
ú nə́kə̀ɹ dzɨ̀-lwì-wá
2SG when CIS-come-PROS
'When will you come (from America to China; speaker is in China)?' (YZQ.WC.23.1)

(38) *tʂhəntɛlin hæ̀dwíkjɛ̀ úhà dzɨ́lwìnà xɔ́gwɔ́ tsùwájwà*
tʂhəntɛlin hæ̀dwí-kjɛ́ ú-há dzɨ́-lwì=næ xɔ́kɔ̀ zù-wá-j-wɑ̀
name ten-CLF 2SG-LOC CIS-come-LNK hotpot < Ch. make-PROS-MED-Q
'(Name), is it so that ten people will come to your place and make hotpot?' (YZQ.WC.23.2)

(39) *ú tʂàwphjǽ dzɨ̀ʂə́wthàmì*
ú tʂàwphjǽ dzɨ̀-ʂə́w-thù-mì
2SG pictures < Ch. CIS.PFV-receive-BOR-Q
'Did you receive the pictures?' (YTD.WC.21.1)

In (37), the cislocative marker is predictably used to refer to motion towards the speaker. However, in (38) and (39), the cislocative indicates motion towards the hearer, indicating that a shift is possible in conversational discourse. We also find that motion can be construed relative to third-person referents in narrative discourse. Typically the main character is the deictic center, but this may shift during the unfolding of a narrative.

Examples of a shifting deictic center in narrative can be seen in Pear Film retellings. In this film a man standing in an orchard picking pears is initially the main focus of the film. In the retelling of the story by Yonghe speakers, the cislocative and translocative clearly establish this character as the deictic center of the narrative, as demonstrated in (40):

(40) *tshɛ̀ɕítɛ̀ ə̀tə́ dzɨ̀lwínæ̀ dɔ̀phúj*
tshɛ̀-ɕítɛ̀ ə̀-tə́ dzɨ̀-lwí=næ dɔ̀-phú-j
goat drag one-CLF CIS.PFV-come=LNK TRANS.PFV-flee-MED
'A person dragging a goat came and left (the place where the man picking pears).' (YZQ.PF.10)

Later on in the film, a young boy steals the farmer's pears and the focus of the film shifts to this new character. This is reflected in the discourse, where the action is subsequently construed as being towards or away from the boy:

(41) *thàmàsá tɕìmǽ ə̀tə́ dzɨ̀lwínæ̀*
thàmàsá tɕìmǽ ə̀-tə́ dzɨ̀-lwí=næ
another girl one-CLF CIS.PFV-come=LNK
'Another girl came (towards the boy) and…' (YZQ.PF. 22)

Some verbs occur exclusively with the cis/translocative prefixes. For example, *dzɨ́-mùtɛ̀* 'to search for' only takes the cislocative, regardless of the direction of the searching (searching is conceptualized as bringing something towards the agent). Similarly, *dɛ̀-kjɛ́* 'to open (of a door)', *dɔ̀-phú* 'to flee', and *dà-wàtɕjɛ́* 'to step across' can only take the translocative, even if the action is towards the speaker.

The translocative and cislocative directional markers extend semantically to mark clockwise and counter-clockwise direction respectively. This follows a pattern noted by Evans, who writes (2004:6):

The semantic range of 'to ego' may be explained by considering the directions indicated by a sweeping motion with the right hand toward the self. This motion could be construed as 'to ego', 'counterclockwise', and 'leftward'. Likewise, the opposite motion would give the opposite senses.

In Yonghe we thus find, for example, the contrast between *dzɨ-tɕʷí*, with the cislocative, 'turn a doorknob counter-clockwise' and *dɛ̀-tɕʷí*, with the translocative, 'turn a doorknob clockwise'.

In addition to indicating literal direction towards, the cislocative can be used with the verb stem *lý* 'come' to indicate the arrival of a particular time. Thus, we see a metaphorical extension of the spatial to the temporal realm, a common cross-linguistic pattern (Haspelmath 1997, Lakoff and Johnson 1980). In these cases, time is conceptualized as moving towards the deictic center, as in (42). Note that different prefixes are used when referents are concrete (e.g., people).

(42) *dzæ̀mǽ ʂíxù dzɨ-lwí-j dzæ̀mǽ kwɛ̀kúj*
dzæ̀mǽ ʂíxù dzɨ-lwí-j dzæ̀mǽ kwɛ̀-kú-j
lunch time < Ch. CIS.PFV-come-MED lunch gather-NAR-MED

'Lunch time arrived and (she) collected the lunch.' (YZQ.IS.109)

The cislocative and translocative are also used in an adverbial construction indicating distributed action between two places or agents (similar to English back and forth or here and there). In this construction, the verb occurs three times: first with the cislocative, then with the translocative, then without a prefix but following the demonstrative *kɨtə̀* 'thus; in this manner'. In (43), both referents are equal in agency, so the action is interpreted as reciprocal:

(43) *típæ̀ jìkjɛ̀ ɦă ɦɛ̀thɛ́j ó*
típæ̀ jì-kjɛ́ ɦă ɦɛ̀-thɛ́-j ó
husband.and.wife two-CLF INT down.PFV-get.along DISC

n̥íkì dzɨ́sɨ̀ ɛ̀kjɛ́ wúnæ̀ dzɨmì dɛ́mì kɨtə̀ míj
n̥íkì dzɨ́-sɨ̀ ɛ̀-kjɛ́ wú=næ dzɨ́-mì dɛ́-mì kɨ́tə̀ mí-j
what eat-NOM one-CLF COP=LNK CIS-feed TRANS-feed thus feed-MED

'That couple really get along well, if there is just one thing to eat, they will feed it to each other.' (lit. 'feeding towards, feeding across, they thus feed') (YTD.WC.1.8)

When there is a single agent, the construction can be used to indicate multiple objects in different places, as in (44). This construction is similar to the Sichuanese Mandarin construction [Verb guòlai Verb guòqù] 'to X back and forth'.

(44) *dzɨmì dɛ́mì kɨtə̀ mí*
dzɨ́-mì dɛ́-mì kɨ́tə̀ mi-j
CIS-feed TRANS-feed thus feed-MED

'(She) fed (the baby birds) this way and that.' (YZQ.IS.77)

3.2.1.2 The vertical axis

The vertical axis is the most commonly used in the corpus and the 'up' and 'down' directional markers comprise 63% (407/721) of the attested prefixes. The vertical axis is used for actions in which the vertical dimension is primary, and there is not a pathway or orientation towards a river or road which is inherent to the motion. Tables 4 and 5 give a few examples of verbs that take the 'up' and 'down' directional prefixes.

Form	Gloss
tə-ʂə́	PFV-lift
tə-tʂʰə́	PFV-hurry
tə-sá	PFV-recognize
tɛ̀-ʐʷɛ́	PFV-finish
tì-ʷí	PFV-stand

Table 4. Some verbs that take the tV- 'up' directional prefix

Form	Gloss
ɦàɹ-ʷáɹ	PFV-hang
ɦɔ̀-tɹ́zɹ̀	PFV-sit
ɦɛ̀-xʷɛ́	PFV-smoke (of meat)
ɦɛ̀-ɕʷɛ́	PFV-shine
ɦə-sə̌	PFV-spill

Table 5. Some verbs that take the hV- 'down' directional prefix

Sentences exemplifying the two prefixes of the vertical axis are given in (45-46).

(45) *á dòqúnǽ nàphí kàtsú jɪ̌tə tə̀ʂánæ̀*
á dò-qú=næ nə-phí. kətsú jɪ̌-tə tə-ʂə́=næ
1SG TRANS.PRF-scared=LNK rock-white fist two-CLF up.PFV-lift=LNK
'I got scared and picked up two fistfuls of white rocks and …' (YZQ.BT.12)

(46) *ɕìmí ɦé-pjɛ̀ ètɕìtɕí ɦàsə̌j*
ɕìmí ɦé-pjɛ̀ ètɕìtɕí ɦà-sə̌-j
fruit that-CLF all down.PFV-spill-MED
'All of the fruit spilled (onto the ground).' (YZQ.PF.30)

Verbs borrowed from Sichuanese most commonly occur with the directional markers belonging to the vertical axis, the most common prefixes for native verbs and those used for verbs without explicit directional meanings. Examples (47) and (48) illustrate the use of the 'up' and 'down' prefixes with loanwords.

(47) *qəpátʂɨ hátə təpjæ̀nthájˀ*
qəpátʂɨ hɑ́-tə tə-pjæ̀n-thɑ́-j
head that-CLF up.PFV-change-BOR-MED
'His head had changed (into that of a dragon).' (YZQ_DB.30)

(48) *tʂʻǎtsɨ tɕə̌w ɹàkjɛ́ ɦɛ̀tɕjɛ́thà*
tʂʻǎtsɨ tɕə̌w ɹàkjɛ́ ɦɛ̀-tɕjɛ́-thɑ
then just bone down.PFV-connect-BOR
'Then (the Qiang shaman) reassembled (his) skeleton.' (YZQ_PJP.35)

One of the main metaphorical uses of the vertical axis is in relationship to time. In Yonghe Qiang the arrow of time points upwards, with earlier events conceptualized as higher than subsequent events. When describing the Chinese twelve-animal zodiac (49-50), one speaker used the 'upwards' prefix to indicate the sequential order of the animals. This sequence was portrayed in order of ascendance.

(49) *tshɛ́ təkáɹnæ̀ wàsá wútì*
tshɛ́ tə-káɹ-næ wàsá wú-tì
goat up-go.PFV=LNK monkey COP-DISC
'After the goat is the monkey.' (YZD.ZD.17)

(50) *wàsá təkáɹnà ʐwí wútì*
wàsá tə-káɹ=na ʐwí wú-tì
monkey up-go.PFV=LNK rooster COP-DISC
'After the monkey is the rooster.' (YZD.ZD.17)

3.2.1.3 The riverine axis

The riverine prefixes are used to indicate motion with relation to the flow of a river. They are used even if the travel that entails changes in altitude, as long as there is a clear path of a river. Thus, the riverine axis supersedes both the vertical and cis/translocative axes. For example, when speaking of traveling from Chengdu to Maoxian, a rise of approximately 1,100 meters, the 'upwards' directional prefix is used because there is no river along the entire path from Chengdu to Maoxian. However, when speaking about going from Maoxian to Ka'er village (a rise of about 700 meters along the Mín river, as well as the river flowing through the Yonghe valley), speakers use the 'upstream' directional marker. Once arriving in the village, speakers use the containment axis to refer to motion into and out of houses. Examples (51-52) show the riverine directional prefixes being used for literal direction.

(51) *sɨ̀kə́ɹná xàɹɲʷwí tɛ̀jɛ́náɲi*
sɨ̀-káɹ=næ xàɹɲʷwí tɛ̀-jɛ́=næ=ɲi
downstream.PFV-go.PFV=LNK Maoxian up.PFV-exist=LNK=TOP
'(He) went downstream and arrived at Maoxian' (YZQ_FCP.30)

(52) *bàlɛ́ hátə nàkáɪj*
bàlɛ́ hə́-tə nə̀-káɪ-j
wife that-CLF upstream.PFV-go.PFV-MED
'That wife went upstream' (YZQ_EM.168)

The downstream prefix can also mark motion along pathways. This is nicely illustrated by examples from the Pear Film retellings. There are no rivers present in the film, but there is a road that winds from the woods towards an orchard. In the course of the film, a character's hat falls down to the ground behind him as he is traveling up the road. Both Yonghe speakers who recounted this part of the story used the 'downstream' marker to refer to the motion of the hat.

(53) *ʑwètúhá sɨxítɛ̀wùj*
ʑwètú-há sɨ-xítɛ̀wù-j
road-LOC downstream.PFV-toss-MED
'(The hat) was tossed on the ground.' (YZQ_PF.39)

(54) *sɨxítɛ̀wùjna jə̌w*
sɨ-xítɛ̀wù-j=næ jə̌w
downstream.PFV-toss-CSM=LNK again < Ch.
'(The hat) was tossed downstream and then (again)…' (YXM.PF.32)

Similarly, the upstream marker is used to recount a scene where the boy runs into a rock when biking up the road.

(55) *nə̀páɪ hátəhá náthùkìnæ*
nə̀páɪ hə́-tə-há nə́-thù-kì=næ
rock that-CLF-LOC upstream.PFV-bump-go.AUX=LNK
'(The child) ran into ran into that rock and …' (YZQ_PF.27-28)

The natural pathway encoded by the 'upstream' and 'downstream' directional markers can also extend to pathways besides rivers and roads. For example, when talking about rubbing down an animal along the grain of the hair, the 'downstream' directional is used.

(56) *dzùkjɛ́há sɨmátɛ̀ sɨmátɛ̀*
dzù-kjɛ́-há sɨ-mátɛ̀ sɨ-mátɛ̀
back-CLF-LOC downstream.PFV-rub downstream.PFV-rub
'(He) rubbed and rubbed the back of the horse.' (YZQ_SH.161)

The motions of stretching or unfolding take the downstream prefix. For example, the downstream prefix used with the verb *ʈʂhí* 'to point' means *sɨ-ʈʂhí* 'stretch out the arm'. Conversely, action against the grain is marked using the 'upstream' prefix. An example of this is the verb 'to bend'

nə-læ̀wé and 'to kneel' *nə-khjǽ*, which both take 'upstream' markers. Example (57) is from a story of a man inserting gold nuggets into a horse's anus, a motion against the natural direction of movement.

(57) *tə̀xí hə́tə kǎɪ nè́lé̝j*
tə̀xí hə́-tə kǎɪ nè-lé̝-j
gold that-CLF front upstream.PFV-exist-MED
'(He) put the gold one in first.' (YZQ.SH.61)

The riverine prefixes also extend metaphorically to the cultural spaces within the household. Similar systems have been described for Ronghong Qiang (C. Huang 2015) and also for most rGyalrong langauges including Situ (Lin 2002: 37, Nagano 1984b), Tshopdun (Caodeng) (Sun 2017), Japhug (Jacques 2008: 251-258; Jacques 2017), and Khroskyabs (Lai 2013:79-80; 122-124). The 'upstream' and 'downstream' directionals are used to denote motion towards or away from the seat of honor in the household, typically the seat closest to the *mú.pàɪ jé̝-sɨ̀* [god exist.animate-NOM] 'altar', a spot across from the front door and facing the entrance to the living room. This household-internal orientation does not necessarily correspond to the direction of the local river. Consider Figure 12, a photograph taken of Mr. Yáng Zhōngpíng performing a ceremony in Lapu village. The altar is considered 'upstream'; the riverine axis is represented with a white arrow. On the other hand, the local river flows somewhat perpendicular to this, as represented by the blue arrow.

Figure 12. Metaphorical and actual riverine axes in a Qiang household

Evidence for this orientation system is provided in example (58), which comes from a conversation between Nathaniel Sims and Mr. Yáng Zhīquán. Mr. Yáng Zhīquán had asked Sims to

take a picture of the household altar in his home in Maoxian. After Sims took the photo, Mr. Yáng Zhīquán produced the following:

(58) *sì-tʂǎw-thá-mì*
sɨ̀-tʂǎw-thá-mì
downstream.PFV-take.picture < Ch.-BOR-Q

'Did (you) take the picture (of the altar)?' (Fieldnotes, from conversation)

Note the use of the 'downstream' prefix as the perfective marker for the verb 'to take a picture', indicating the location of the photographer with respect to the altar, or indicating the path of motion for the picture to move into the phone. It is worth noting that houses in urban areas, away from any local river, are also organized around the same household-internal riverine axis.

3.2.1.4 The containment-based axis

The containment-based axis refers to motion into or out of a container. This is the second-most frequently used axis in the corpus. The most typical use of these verbs is to refer to motion into or out a house (59-60).

(59) *màtʂá sítʰɛ̀kìnæ̀ zúlìkì ɦàɪkáɪj*
mùtʂá sɨ́-thɛ̀-kì-næ̀ zú-lì-kì hàɪ-káɪ-j
food downstream.PFV-drink=LNK field-plow-go.AUX out.PFV-go.PFV-MED

'He ate the food and went out (from the home) to plow the fields.' (YZQ.EM.65)

(60) *ó kjɛ̀ntʰá àɪkáɪnæ̀*
ó kjɛ̀n-thá àɪ-káɪ=næ
DISC house-LOC in.PFV-go.PFV=LNK

'Oh! Then (he) went into the house and …' (YZQ.EM.151)

The inward prefix is often used with verbs of perception and cognition, e.g.: *à-sá* 'hear', *ə̀-ɬɔ̀tì* 'understand', *ə̀-nə́* 'know', *àɪ-múɪ* 'dream'.

Many verbs that involve motion away from the body – such as reaching the arms above the head, pointing, kicking, and waving – take the outwards prefix as opposed to the translocative. This suggests that the body (and/or the space around the body) is conceptualized as a container, so motion away from this is seen as outwards movement rather than movement away. There also seems to be a link between up and outwards; ascending to heaven takes the *ɦV-* prefix, as does an example where a dragon goes into the sky. In addition, see example (61), from a Pear Film retelling, which describes movement of the farmer who climbs up a ladder by a tree to pick pears after putting down his last load:

(61) *pæ̀ɕímí tɕʰwíkìj; ə̀thú ɦɛtɕʰwí; thə̌ ɦèlénæ̀ hə̀ɹkə́ɹnæ̀ jə̌w tɕʰwíkìj*
pæ̀ɕìmí-tɕʰwí-kì-j ə̀-thú ɦɛ̀-tɕʰwí thə̌ ɦɛ̀lé=næ
pear-pick-go.AUX-MED one-CLF down.PFV-pick behind down.PFV-exist=LNK

hàɹ-káɹ=næ jə̌w tɕʰwí-kì-j
out.pfv-go=lnk again pick-go.aux-med

'(The farmer) went pear picking. One time, (he) picked (pears) and put them down behind him and went back out and picked again.' (YZQ.PF.5-7).

3.2.2 Co-occurrence of directional prefixes with verb stems

Yonghe verbs vary in their ability to take directional prefixes, ranging from none to eight. The majority take somewhere between these two extremes. Only a very small number of verbs do not take directional prefixes.[9] These are presented in Table 6.

Form	Gloss
gjæ̌	'love'[10]
tɕʰí	'want'
tápù	'like'
zə̀té	'cry'

Table 6. Verbs that do mot take directional prefixes

Some of these verbs appear to include a fossil of a directional marker that has been reanalyzed as part of the verb stem, providing an explanation as to why they no longer require a prefix. For example, the first syllable of *tápù* 'like' might be derived from the *tV-* upwards prefix. These lexemes are now clearly disyllabic verb stems; for example, the negative prefix goes to the left of them; with other verbs it intercedes between the stem and directional prefix.

Motion verbs generally take the largest number of directional prefixes, although this may be constrained by the semantics of the verb (e.g., it is not possible to use 'go' with a cislocative prefix). When used with motion verbs, these prefixes indicate literal direction. Paradigms of three motion verbs with directional prefixes are given in Table 7.

Direction	'go'	'come'	'jump'
towards	--	*dzì-lwí*	*dɛ̀-súté*
away	*dà-káɹ*	--	*dzì-súté*
upwards	*tà-káɹ*	*tə̀-lwí*	*tə̀-súté*
downwards	*ɦàɹ-káɹ*	*ɦɛ̀-lwí*	*ɦɔ̀-súté*
upstream	*nə̀-káɹ*	*nɛ̀-lwí*	*nɛ̀-súté*
downstream	*sì-káɹ*	*sì-lwí*	*sə̀-súté*
inwards	*àɹ-káɹ*	*ɛ̀-lwí*	*ə̀-súté*
outwards	*ɦàɹ-káɹ*	*ɦɛ̀-lwí*	*ɦə̀-súté*

Table 7. Directional prefixes and motion verbs

[9] The same is true for the rGyalrong langauges Situ and Japhug (see Jacques 2017:601 and 2012:1213 respectively).
[10] This word is a borrowing form Tibetan *dga.* Thanks to an anonymous HL reviewer for this observation.

Verbs with prefixes marking literal direction can be either perfective or imperfective. Examples with *káɹ* 'go' are given in (62-63). This verb is unique in having a suppletive stem alternation: *káɹ* is the perfective form and *kí* is the imperfective and used with auxiliaries. Note that directional prefixes are found with both:

(62) *qá hàɹkǎɹ*
qá hɑ̀ɹ-kǎɹ (< kaɹ + ɑ)
1sg out.pfv-go.pfv:1sg
'I went out.' (Fieldnotes, elicted example from YZQ)

(63) *qá nàkìwá*
qá nà-kì-wɑ́
1sg upstream-go.impf-pros:1sg
'I will go upstream.' (Fieldnotes, from conversation)

Examples (64) and (65) have the motion verb *wáɹlə* 'herd'; the prefixes are functioning directionally and the aspect is imperfective.[11]

(64) *tèdzɻ́ təwáɹlə̀lá "jéwtɛ̀ jəwtɛ̀ jəwtɛ̀" jítɕhì*
tɛ̀-dzɻ́ tə-wáɹlə = lá "*jə́wtɛ̀ jə́wtɛ̀ jə́wtɛ̀*" jí-tɕhì
upwards-direction upwards.PFV-herd=LNK (herding call) say-want
'When herding upwards, you need to say "jə́wtɛ̀ jə́wtɛ̀ jə́wtɛ̀".' (YTY.HG.28)

(65) *ɦàɹdzɻ́ ɦàɹwáɹlə "ɦékwè ɦékwè ɦékwè" kàjétɕhì*
ɦàɹ-dzɻ́ ɦàɹ-wáɹlə "*ɦékwè ɦékwè ɦékwè*" kàjé-tɕhì
downward-direction downwards.PFV-herd (herding call) yell-want
'When herding downwards, you need to yell "ɦɛ́kwɛ̀ ɦɛ́kwɛ̀ ɦɛ́kwɛ̀".' (YTY.HG.29)

Most verbs only take the prefix in perfective aspect or imperative constructions (this is discussed in more detail below). Such verbs tend to take a limited number of prefixes: either a single prefix, prefixes from a single axis, or a broader subset. Frequently the prefixes retain their directional meanings. For example, consider the verb *wí* 'stand', which takes a prefix in perfective contexts; when used with the upwards prefix *tə̀-*, it denotes standing something right-side up, but when used with the 'downwards' prefix *ɦə̀-* it denotes standing something upside-down. Another example, taken from the Pear Film narratives, is *tɕhwí* 'pick'; *ɦè-tɕhwí* with 'downwards' is used to denote picking pears from a tree, while *tè-tɕhwí* with 'upwards' is used for picking pears up off the ground.

However, the meaning of a verb-prefix combination is not always so transparent. For example, the verb *ɛ́ɹ* 'release' can take at least four directional prefixes (presented in Table 9). The prefix *ɦè-* 'outwards' is used in most scenarios and may be considered the default; noun-verb collocations result

[11] The adverbial is composed of the directional marker prefixed to a stem that only occurs in this construction to our knowledge. Three directional markers are attested as prefixes to this stem in the corpus: *tV-* 'upwards', *ɦV-* 'downwards', and *sV-* 'downstream'.

in specific lexicalized meanings and we find different prefixes occur; the relation to direction is still recoverable.

English translation	Form	Direction
'release'	*ɦè-ɕí*	outwards
'urinate / defecate'	*ɦè-ɕí*	downwards
'release (to get out of school)'	*dè-ɕí*	translocative
'crow (of a rooster)'	*tè-ɕí*	upwards

Table 8. Lexicalized prefix-V combinations with ɕí 'release'

There are some verb forms for which changing the directional prefix results in an antonymic relationship between the verbs. In these cases the meanings have again lexicalized, and the semantic connection to the directional is in some cases less apparent. Relevant examples are provided in Table 9:

English translation	Form	Direction
'win'	*tə-kú*	upwards
'lose'	*ɦɔ-kú*	downwards
'raise by placing something under'	*tə-tɕí*	upwards
'press downwards'	*ɦè-tɕí*	downwards
'turn to the left'	*dè-tɕʷí*	translocative
'turn to the right'	*dzɨ-tɕʷí*	cislocative

Table 9. Opposing prefixes create antonymic meanings

In other examples, the directional prefixes differentiate two verbs with a similar core meaning. Examples are provided in Table 10.

English translation	Form	Direction
'bloom (of flowers)'	*tà-pá*	upwards
'shine (of stars)'	*ɦà-pá*	downwards
'close (of a door)'	*ɦà-qʷá*	outwards
'turn off (of a light bulb)'	*ɦà-qʷá*	downwards
'hug, embrace'	*dzɨ-tʰə́*	cislocative
'carry in arms'	*tə-tʰə́*	upwards

Table 10. Opposing prefixes differentiate verbs with similar meanings

In other cases, homophonous verbs are distinguished by the different directional prefixes that they take, as illustrated in Table 11:

English translation	Form	Direction
'sell'	*tə-χʷá*	upwards
'darken (of the sky)'	*ɦà-χʷá*	downwards
'stab'	*nɛ̀-tsɨ́*	upstream
'steam'	*ɦɛ̀-tsɨ́*	downwards
'boil'	*tə-sú*	upwards
'lock'	*ɦɔ̀-sú*	downwards

Table 11. Homophonous verbs differentiated by directional prefixes

Many verbs select only one of the eight prefixes. Sometimes these collocations seem to result from metaphorical extensions. For example, a conceptual metaphor UP IS BIG/SMALL IS DOWN is at play in *tə-bǎɹ* 'become big' with the upwards prefix and *ɦɔ̀-tsə̌* 'become small' with downwards. In other cases, the choice of prefix does not denote either literal or metaphorical direction. We refer to these as opaque collocations. For example, *pú* 'buy' uses the cislocative, but *χʷá* 'sell' takes *tV-* 'upwards', an entirely different axis. Further examples are presented in Table 12:

English translation	Form	Direction
'steal'	*tɛ̀-xʷí*	upwards
'become'	*tə-pɔ́*	upwards
'work'	*ɦàɹ-bùɹlú*	downwards
'build'	*ɦàɹ-tʂɨ́*	downwards
'forget'	*ɦɛ̀-mɛ̌*	downwards
'die'	*ə̀-ʂə́*	inwards
'throw'	*sɨ̀-xítɛ̀*	downstream
'err'	*dà-tshá*	translocative

Table 12. Some opaque collocations

3.3 Directional prefixes and perfective aspect

As noted above, motion verbs that co-occur with directional prefixes can occur in both perfective and imperfective contexts. This is also true of the verb *lɛ́* 'give', which uniquely selects the downward prefix. Example (66) illustrates this verb in the prospective aspect:

(66) *pǎtshɨ̀ tɕhínæ̀ pǎtshɨ̀ ɦɛ̀lɛ̀má*
pǎtshɨ̀ tɕhí=næ pǎ-tshɨ̀ ɦɛ̀-lɛ̀-má
pig-flesh want=LNK pig-flesh down-give-PROS:1SG
'If you want pork, I'll give you pork.' (YZQ.SH.223)

By contrast, the rest of the Qiang verbs only take the directional prefixes in perfective contexts and in imperative constructions (discussed in §3.4). When used as perfectives, verbs vary in the degree to which the prefixes also mark direction. As shown in the preceding section, in some cases the directional meaning is quite apparent and in other cases (such as the opaque collocations) it is entirely lost. Speakers may use adverbial constructions to specify the direction of motion for verbs

with set collocations. For example, although the verb *χwá* 'to sell' takes the upwards directional prefix in the perfective aspect, speakers can also indicate the literal direction of the selling periphrastically (i.e. 'S/he up-sold it in a downwards manner.')

While others have described the prefixes as past-tense markers (H. Sun 1981), distributional facts argue that perfective is a more accurate characterization in Yonghe. Perfective aspect indicates the temporal boundedness of an event, reported without regard to the relevance of the information or to the relationship of the activity to the time of the reporting (Comrie 1976). Dahl and Vellupilai (2013) note that perfectives are "the default way of referring to a completed event in the language in question;" this is true for Qiang.

One piece of evidence in favor of the claim that the prefixes mark perfective aspect is the distribution of the prefixes with stative verbs; the prefixes only occur to denote a temporally bounded entrance into a state, as in (67). They do not occur with predicates denoting ongoing states, even if located in the past (68):

(67) *ɦàtə́ àɹwǎɹ*
ɦɑ̀tə́ ɑɹ-wǎɹ
INT in.PFV-tired:1SG
'I have become very tired' (YZQ.DB.22)

(68) *tɕjɛ̀ hətə̀ tɕə̌w ə́w wǎɹjˈ*SEP
tɕjɛ́ hə́-tə̀ tɕə̌w ə́-w wǎɹ-j
son that-CLF just one-CLF dumb-MED
'That son was just a little dumb.' (YZQ.FCP.8-9)

Related to this is the use of directional markers with locational existential verbs, which are also inherently stative. When the prefixes combine with these predicates, the result is a dynamic meaning (70-71; recall that *wé* is the existential verb for things which are attached, while *jé* is the existential verb for animates that are unattached and not in containers):

(70) *pǎtshɨ̀ tɛ̀wɛ́ tʂàtsɨ́ tɕə̌w mɛ́zə̀ àχá təpòzúj*
pǎtshɨ̀ tɛ̀-wɛ́ tʂǎtsɨ́ tɕə̌w mɛ́-zə̀ à-χá tə̀-pò-zú-j
flesh up-exist then just person-face one-CLF up.PFV-became-ITT-MED
'His flesh grew back and he looked like a person again.' (YZQ.PLP.138)

(71) *phəɹtʂúhá tɛ̀jɛ́næ̀*
phəɹtʂú-há tɛ̀-jɛ́=næ
forest-LOC up.PFV-exist=LNK
'He arrived at the forest and …' (YZQ.IS.24)

In some cases, the combination results in a transitive 'put' verb, as in (72), with the inanimate existential and (73), with the container existential:

(72) *dzùpáhá pàntí ətə́ èsə́j*
dʑùpá-há pàntí ə-tə́ è-sə́-j
foot-LOC bandaid one-CLF inwards.PFV-exist-MED
'(S/he) put a bandaid on (her/his) foot.

(73) *təphí hətə kǎɪ nèlə́j*
təphí hə́-tə kǎɪ nè-lə́-j
silver that-CLF first upstream.PFV-exist-MED
'He put the silver one in first.' (YZQ.SH.63)

Even with dynamic verbs, the directional prefixes are limited to telic predicates. In (74), the final verb *thə́* 'drink' has a directional prefix denoting a telic situation; there is a specified amount of water consumed. When the verb is habitual, as in (75), the directional prefix is absent.

(74) *thə́t-thə́: tsú ətún àɛá kɨtə sətʰèj*
thɛ-thɛ, tsú ə-tún à-ɕá kɨtə sə́-thèj
drink-drink water one-CLF one-CLF thus downstream.PFV-drink-MED
'(He) drank and drank, and drank one ton of water in one instant.' (YZQ.DB.29)

(75) *tsə́ xĭ mètʰə́mùlè*
tsə́ xĭ mè-thə́-mù-lè
1PL alcohol NEG-drink-NOM-PL
'Those of us who don't drink alcohol.' (Fieldnotes, from conversation)

The directional prefixes are also found on verbs in succession to indicate a sequence of events in narrative discourse, each one temporally bounded with respect to the next; see (76).[12]

(76) *hǎɪqə ɦèkwínæ̀ təχwákìnæ̀ kʰáɪpùkìj*
hǎɪqə ɦè-kwí=næ tə-χwá-kì=næ kʰáɪ-pù-kìj
grass down.PFV-cut=LNK up.PFV-sell-cut-go.AUX=LNK rice-buy-go.AUX-MED
'(They), after cutting down grass and having gone and sold it, would go and buy rice' (YZQ.DB.3)

Directional markers are not used with reduplicated verbs in adverbial phrases, as shown in (77-78); see also (74) above.

[12] The final verb in this example does not carry a directional prefix due to the incorporated noun. This construction is used to denote verbs with generic objects or to indicate habitual aspect.

(77) *ʈʂàtsɨ́ wútʂɨ̀tʂɨ́ wùtʂɨ̀tʂɨ́ zɨ̀tázɨ̀tá kɨ́tə̀ sɨ̀kǎɹj*
tʂàtsɨ́ "wútʂɨ̀tʂɨ́ wùtʂɨ̀tʂɨ́" zɨ̀tá-zɨ̀tá kɨ́tə̀ sɨ̀-kǎɹ-j
then onomatopoeia say-say thus downstream.PFV-go.PFV-MED

'Then he went downstream (to Maoxian) saying "wuzhizhi wuzhizhi".' (YZQ.FCP.29)

(78) *qànú qànú wùjé wùjé kɨ́tə̀ èlwǽ*
qà-nú qà-nú wùjé-wùjé kɨ́tə̀ è-lwǽ (< lwi + ɑ)
1SG-REFL 1SG-REFL call-call thus inwards.PFV-come:1SG

'I came in as I was calling myself' (YZQ.BT.54)

3.4 Use of Directional Markers as Imperatives

In addition to their use in perfective contexts, Yonghe Qiang directional prefixes are also used in imperative constructions. Verbs may be marked as imperative by the directional prefix only, or the prefix may be combined with one of the imperative suffixes: *-nu* 'singular imperative', *-sa* 'hortative', and *-pɔ* 'polite imperative'. These are illustrated in (79)-(81).

(79) *àpéj sɨ̀thénù*
à-péj sɨ̀-thé-nu
one-CLF downstream.PFV-drink-IMP

'Drink one cup!' (YTD.WC.7)

(80) *xǐ sɨ̀qúsà*
xǐ sɨ̀-qú-sɑ
alcohol downstream.IMP -swallow-HORT

'Cheers! / Let's drink!' (Fieldnotes, from conversation)

(81) *nɛ̀lwípɔ̀*
nɛ̀-lwí-pɔ
upstream.IMP-come-POL

'Come upstream!' (YPZ.WC.1.5)

There is sometimes a difference between the directional prefix a verb takes when used as an imperative and the one found when used to mark perfective aspect. For example, compare the forms of *tɕɐwítɕɐwi* 'ask' in (82) and (83); in (82), an imperative example, it takes *V-* 'inward', while in (83), a perfective example, it takes *tV-* 'upward'.

(82) *étɕɐwìtɕɐwì étɕɐwìtɕɐwì ú dæ̀mǽ ɦɛ̀jétɛ̀tɕʰì*
é-tɕɐwìtɕɐwì é-tɕɐwìtɕɐwì ú dæ̀mǽ ɦɛ̀-jétɛ̀-tɕʰì
inwards.IMP-ask inwards.IMP-ask 2SG well down.PFV-write-need

'Ask lots of questions! You need to write down (the transcriptions) well.' (YZQ.WC.8.8)

(83) *dæ̀mǽ ɦɛ̀mɛ̀jɛ́tɛ̀næ̀ tɛ̀tɕwítɕwì mànájì wátì*
dæ̀mǽ ɦɛ̀-mɛ̀-jɛ́tɛ̀=næ tɛ̀-tɕwítɕwì mà-ná-jì-wá-tì
well down.PFV-NEG-write=LNK up.PFV-ask NEG-good-ADV-PROS-DISC
'If (you) don't write them well, it will be hard to ask questions.' (YZQ.WC.8.9)

In all cases where a verb selects a different prefix in the imperative, the prefix found is *ɛ́-* 'inward'. This is also the default imperative marker for Chinese loanwords (84). Verbs which take the *V-* prefix in perfective aspect do not take a different prefix in imperatives; an example is *sá* 'listen' in (85).

(84) *dzɨ̀lwínæ̀ tjǽxwà àtáthà*
dzɨ̀-lwí=næ tjǽxwà à-tá-thà
cislocative.PFV-come=LNK phone< Ch. inwards.IMP-call<Ch.-BOR
'Call when you have arrived.' (YZQ.WC.3.2)

(85) *àsánù*
à-sá-nù
inwards.IMP-listen-IMP
'Listen!' (Fieldnotes, from conversation)

Verbs that typically do not take directional prefixes, such as *zìlwí* 'wait', can take the inwards prefix in imperative constructions, thus *ɛ́-zìlwì* 'wait!' These suggest that this prefix has begun to grammaticalize into a distinct imperative marker, even though it is still embedded in the system of directionals. Non-control verbs, such as *tápù* 'like', never occur in imperative constructions.

The use of the *V-* 'inward' prefix as the default in imperative constructions is reflected in the distribution of the prefixes in the corpus. Figure 13 shows that of the fifty-seven imperative constructions, twenty have the 'inwards' prefix, a reversal of the pattern found for the corpus as a whole (Table 3 and Figure 11 above), where *tV-* 'up' and *ɦV-* 'down' are statistically predominant.

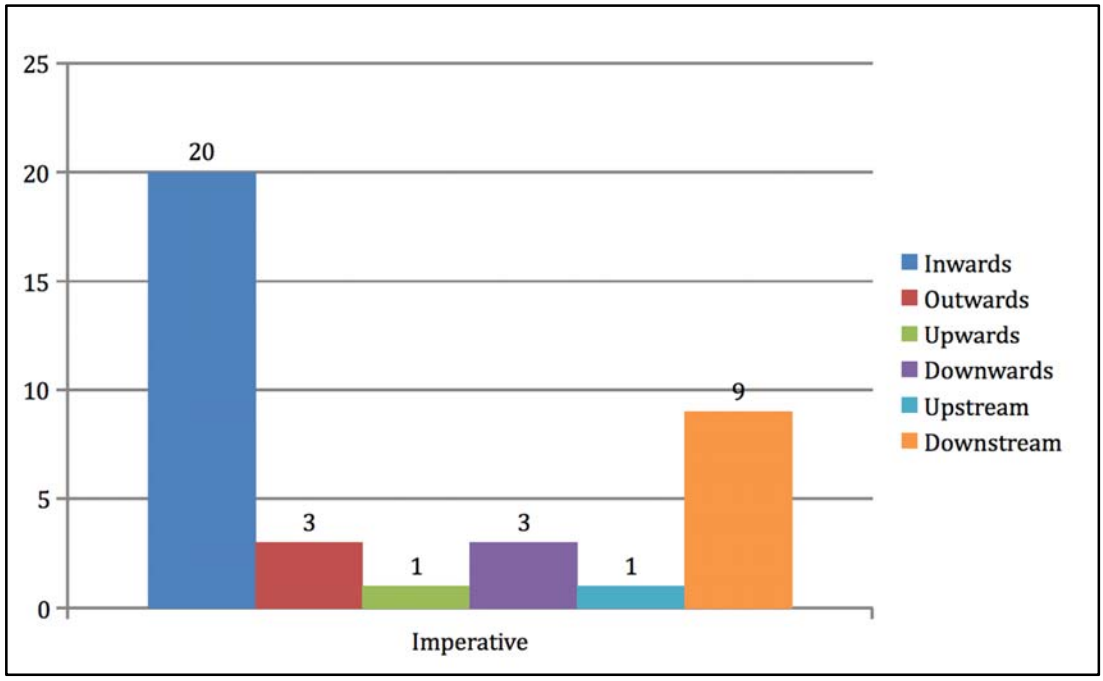

Figure 13. Distribution of directional prefixes in imperative constructions in the discourse corpus

Related to the imperative are three Yonghe prohibitive constructions. One of these involves an alternation in accent placement such that the directional prefix takes the word-level accent which has a prohibitive meaning. Examples are given in (86a-d):

(86a) *tə̀ʂə́*
tə̀-ʂə́
upwards.PFV-lift
'(to) lift upwards' (elicted from YZQ)

(86b) *tə́ʂə̀*
tə́-ʂə̀
upwards.PROH-lift-IMP
'don't lift upwards!' (elicted from YZQ)

(86c) *hàqwá*
hù-qwá
outwards.PFV-close
'to close (the door)' (elicted from YZQ)

(86d) *háqwà*
há-qwà
outwards.PFV:PROH-close

'don't close (the door)!' (elicted from YZQ)

A second prohibitive construction suffixes the negated auxiliary verb *tɕhí* 'want' to the verb stem, i.e., *V-mè-tɕhí* [verb-NEG-want], as in (87):

(87) *dzǎ mètɕhí*
dʐǎ mè-tʂhí
be.shy NEG-want

'Don't be shy!' (Fieldnotes, from conversation)

As noted above, this is one of the small set of verbs that never occur with a directional prefix, so it is not surprising to find the prefixes absent from this construction. Finally, there is a third prohibitive construction, this one using the particle *zɨxwá*. With this construction, directional prefixes are possible but not required, as demonstrated by (88), which has the prefix, and (89), which does not:

(88) *phúqphùqtjɛ́ tìwí zɨxwájì*
phúqphùq-tjɛ́ tì-wí zɨxwá-jì
tree.trunk-CLF upwards-stand PROH-say

'(The eagle said to Paejaelypu) You shouldn't stand the trees upright.' (YZP.PLP.127)

(89) *mǎ tsɨ́tə̀j kɨ́tə̀ qɨ̀tɛ́ zɨxwáɛ̀inæ̀*
mǎ tsɨ́-tə̀-j kɨ́tə̀ qɨ̀tɛ́ zɨxwá-ʂi-næ
mother this-CLF-OBJ thus hit PROH-EVID-DISC

'I realize I shouldn't hit my mother in that way.' (YZQ.IS.82)

3.5 Grammaticalization: From directional to perfective to imperative

The historical development of perfective markers from directional prefixes is consistent with the grammaticalization pathway that Bybee, Perkins and Pagliuca (1994) have called "perfective from bounders". They define "bounders" as adverbs with locational meanings (such as *up, down,* etc.). These can come to indicate completion or attainment of a limit, for example English *drink* versus *drink up*. The authors report that:

> The use of such adverbials may be highly irregular in a language, with verb-adverb pairs being restricted to certain combinations, or it may become very widespread in a language, with the adverbs becoming grammaticized and generalized to occur with many verbs. In such cases it may eventually happen that almost all verbs participate and have forms with and without bounders. In such cases the verbs without bounders may be viewed as imperfective in aspect, which the verbs with bounders are perfective. A contrast develops that resembles the perfective/imperfective distinction. (Bybee, Perkins, and Pagliuca 1994: 87-88).

This pathway from bounders to markers of aspect has been attested in Zhoukeji rGyalrong (Lin 2011) and also fits well with the Qiang case. Evans (2004) has reconstructed a set of "orientation prefixes" that functioned to mark perfective aspect in proto-Qiang. Although they were prefixes as opposed to the adverbials discussed by Bybee, Perkins, and Pagliuca, the same process is at work. As we have seen, Yonghe (like the other Qiang varieties) has a large number of primarily idiosyncratic pairings of particular prefixes with verbs; this places the system closer to the derivational end of the inflectional-derivational spectrum (Bybee 1985). On the other hand, almost all verbs do combine with at least one of the prefixes in perfective contexts. In this sense, the system seems inflectional; some prefix is required, although which specific prefix occurs depends on the verb stem. The result is a system that still retains directional semantics, although this is largely lost when coding aspect or mood.

This is especially true in Yonghe in cases where a verb selects a single prefix, rendering the directional system moot. The semantic bleaching is sufficiently advanced that some speakers do not perceive verbs with the same prefix as being semantically related. Further evidence of this bleaching is the use of a directional adverbial that reinforces the literal directional meaning of the prefix, as in (90):

(90) *sìdzí sìtsǽmǽnæ̀ lákə̀ ètwí mɔ́phùj*

sì-dzí	sì-tsæ̀mǽ	lákə̀	è-twí	mɔ́-phù-j
downstream-direction	downstream.PFV-look=LNK	nothing	in.PFV-see	NEG-able-MED

'I looked downstream and wasn't able to see anything.' (YZQ.BT.21)

A second relevant grammaticalization pathway is from perfective to imperative (Bybee, Perkins, and Pagliuca 1994: 212; and, for Qiang, Evans 2004: 7). Van der Auwera, Malchukov, and Shalley (2009: 100) provide a pragmatic explanation for the cross-linguistic propensity for perfectives to be incorporated into imperative constructions, namely that when one directs someone to undertake an action, one typically expects the person to complete it. This suggests a possible two-step process for Qiang, with the development of imperatives occurring *after* the prefixes had grammaticalized into markers of perfective aspect, as shown in Figure 13.

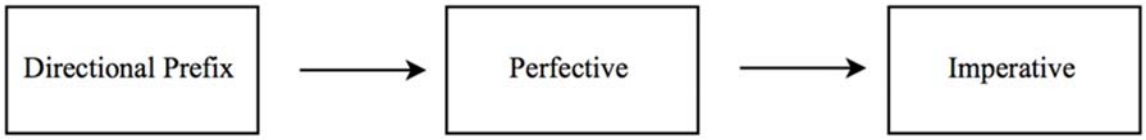

Figure 13. Proposed grammaticalization pathway

This pathway of grammaticalization is further supported by an examination of the grammatical functions of directional prefixes within other languages of the linguistic area. Table 13 presents the grammatical functions of the directional prefixes in some languages of Western Sichuan. Languages sampled include Muya (Shirai 2009, Gao 2015), Niuwozi Prinmi (Ding 2014), Stau (Jacques, Antonov, Lai and Lobsang Nima 2017), Zhuokeji rGyalrong (Lin 2011); data on Namuzi

Guiqiong, Biama, and Shixing were compiled by Shirai (2009). The checked boxes indicate functions where directional prefixes are obligatory whereas the tilde represents optional use of directional markers.[13]

Language	Direction	Perfective	Imperative	Imperfective
Muya	✓	✓	✓	✓
Zhuokeji rGyalrong	✓	✓	✓	✓
Japhug rGyalrong	✓	✓	✓	✓
Yonghe Qiang	✓	✓	✓	
Stau	✓	✓	✓	
Niuwozi Prinmi	✓	✓	✓	
Queyu	✓	~	✓	
Tangut	✓	✓	✓	
Namuzi	✓	✓		
Guiqiong	✓			
Baima	✓			
Shixing	✓			

Table 13. Directional prefixes in languages in the West Sichuan linguistic area

With the exception of Queyu,[14] all of the languages that require directional markers for imperatives also require them in perfective aspect. Some langauges have extended the use of directional to imperfective verbs as well. For example, in Muya all verbs (unless they are nominalized; see Gao 2015) take directional prefixes, such that the directional meanings are largely fossilized (Shirai 2009:16). In Zhuokeji rGyalrong the perfective and past imperfective marker both grammaticalized from the 'downward' directional prefix (see Lin 2011). In Yonghe, however, directional prefixes occur with imperfective apsects only when marking literal direction. It is worth noting that Yonghe Qiang differs from Japhug, Stau and Tangut in having only one series of directional prefixes, whereas these languages distinguish different series of prefixes marked by the vocalism of the prefix and/or some consonantal changes. For example, Stau has two series of prefixes; one for perfective or imperative verbs and another for interrogative or irrealis verbs (Jacques et. al 2017).

There are differing views as to the origin of the directional prefixes in the language area. Different sources that have been proposed include grammaticalization of motion verbs of Proto-Tibeto-Burman, (Nagano 1984a), developments from orientation pronouns (B. Huang 1994), or parallel innovations (LaPolla 1994). See Thurgood (2017) for a discussion of this issue. While all languages in this sample have directional prefixes, only a subset also use them to mark perfective

[13] Thanks to an anonymous HL reviewer for this observation.

[14] Queyu possesses proper perfective prefixes and thus does not use directional markers for perfective aspect (Wang 1991). The development of directionals into imperatives in Queyu remains for further research.

aspect and only a subset of those also use the markers in imperative constructions. This suggests that the presence of the aspectual function is a precondition for use in the imperative.

4 Summary and Conclusions

Directional and locational concepts have been incorporated into many aspects of Yonghe Qiang grammar; indeed the language could be considered "exuberant" in this respect, requiring speakers to constantly attend to the relative locations and trajectories of discourse referents and encoding these in one or more grammatical categories in most clauses. This system is realized through case marking, locational nous, existential verbs, directional prefixes, and adverbial phrases, occurring alone or in combination with other categories.

While unusual from a broad typological standpoint, the grammatical encoding of space in Yonghe follows patterns typical of languages of the Western Sichuan linguistic area (Chirkova 2012). Of course there are cross-linguistic differences in the degree of elaboration of particular subsystems for marking spatial meanings. This is true even within the Qiang language complex. For example, in Ronghong there are distinct forms for 'above' or 'below' depending on whether the ground is a mountain, a valley, a building, etc. (LaPolla and C. Huang 2003:58; C. Huang 2015: 670), but these distinctions have not yet been attested in Yonghe. On the other hand, we find evidence for an intrinsic frame of reference in Yonghe, while Ronghong is described as having a "viewer-centered" (i.e., relative) referential frame (C. Huang 2015: 683-686). Other notable features of Yonghe include a lack of solar orientation in the prefixes (cf. Mawo, Evans and J. Sun to appear); the dominance of the vertical axis in marking the perfective (as compared to Mawo, which uses the translocative (H. Sun 1981)); and particular lexicalized prefix-verb pairings.

This study has benefitted from multiple types of data. The sentences collected using visual stimuli, including the Bowerman and Pederson pictures and the Pear Film, allowed us to easily uncover common phrasings for a wide variety of spatial relationships. The discourse corpus, on the other hand, revealed that the deictic center of the system can shift from the speaker to hearer in conversational discourse or from one character to another in narratives. It also allowed us to see how speakers can reinforce the core directional grammar with adverbial phrasings, especially in cases where the literal meanings of the prefixes have been bleached. Finally, discourse data allowed us to examine the relative frequency of forms, which especially proved insightful in comparing the perfective and imperative uses of the prefixes.

The study has uncovered several interesting insights into Qiang conceptual systems. With regard to the relationship between space and time, Yonghe is similar to Chinese, in that 'front' and 'back' are linked to the past and future respectively. Events are seen as coming towards a human deictic center (as the use of the cislocative demonstrated), as opposed to the human moving forward through time. On the other hand, the Yonghe have an additional conceptual metaphor based on the vertical axis, with events accumulating over time from the past – which is lower – to the future – which is higher. Also interesting was the extension of the riverine axis to natural pathways or directions of movement, such as paths, roadways, or the natural direction of hair growth on an animal. Finally, we saw the extension of the directional system to the organization of the Qiang household; this feature is seen in neighboring languages, such as rGyalrong (Lin 2017).

The complex distribution of the directional prefixes suggest that the system is largely derivational in nature, which was unexpected, given the overall frequency of the prefixes and the fact

that they occur quite regularly in perfective and imperative contexts. Turning to diachrony, the Yonghe and comparative facts suggest a grammaticalization pathway from directional prefix to perfective to imperative.

In sum, the grammatical encoding of space in Yonghe Qiang is a rich area of study, which provides insights into a wide variety of synchronic and diachronic aspects of the language. It is hoped that this study will bring attention to the complex systems attested in the languages of the Western Sichuan linguistic area as global typologies of the grammatical encoding of spatial categories are more fully developed.

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