Up and Down the Mountain

Untranslatability and Space

Untranslatability is one of the parts of the study of languages with the broadest appeal. Anthropologists make grand theories upon finding Hawaiian has the same word for uncle and father; students bemoan the fact that Nepali has 10 different ways to say "you"; psychologists argue about the implications of Mayan having no terms for left and right; and pretty much everyone perks up their ears when they hear that Eskimo has dozens of words for snow; even Al Bloom couldn't resist getting involved when he studied Mandarin's lack of a subjunctive tense. (Morgan 1870, Levinson 1999, Martin 1986, Bloom 1981).

"Untranslatability" is a mouthful, and it lacks some finesse. A three-way division is what we really should be expressing here – one with plenty of gray area but also with some fairly solid categories. In this paper, I'll refer to a word that can be reasonably expressed in another language in one word as "codable" in that language (e.g. German "augen"= English "eye"). If a word can reasonably be expressed in another language in one word plus some number of modifier words, it is "markedly codable" – it can be coded if its counterpart is "marked up." (e.g. Eskimo "apun"= English "snow on the ground"). If a word cannot reasonably (without resort to strange circumlocutions) be expressed in another language, it is "uncodable" (e.g. English "you" cannot be coded in Nepali, which requires a 2nd person pronoun to also express some level of formality).

However weird some of these examples might sound, some of them are a little more understandable than others. We expect different cultures to have different kinship systems and terms, or more emphasis on social formality and different forms for addressing others. We can see that people living in a different environment might make more distinctions between key factors of that environment that we do. Understanding space, however would seem to be one of those problems that all humans share (Levinson 2001). We all have to move around in the world, we all have make some mental picture of where things are, and often communicate that with others. We've probably been doing something like that for a very very long time. It seems stranger, then, that Mayan would not have words like right and left, but instead use cardinal directions, and then only a three-way distinction between south, north, and eastorwest (Levinson 1999). It seems strange that depending on where you are in Iceland, *northr* (north) can mean northeast, northwest, east, or even south (Haugen 1957). And it seems very strange that the Kiranti languages of Nepal are suffused with a marking of the vertical dimension that includes noun cases for high, low and level.

Kiranti Languages

The Kiranti (*Kiraãti)* language family comprises some 30 languages (Ebert 1994; some counts are higher: Hanßon (1991) and Grimes (2000) put the estimate closer to 40) in the Tibeto-Burman branch of the Sino-Tibetan language family. The term "Rai" (*Raaii)* is occasionally used interchangeably (Hanßon 1991) but this grouping is really a political administrative one – ethnically questionable as it is rejected by some groups (Bickel 2002) and linguistically inadequate as it excludes Limbu, an important Kiranti

language. (See Bickel and Gaenszle 1999 for arguments that the Rai religion, which is not shared by the Limbu, informs and is informed by the language and in particular spatial terminology of its practitioners.) It is worth noting that despite the relative efficacy of "Kiranti" as a linguistic grouping, the term can also refer to certain geographic, religious, historical or political groupings.

Kiranti languages are spoken in the eastern hills of the Himalayas – mainly Nepal, although there are speakers in Northern India and reportedly in Bhutan (Grimes 2000). The Kiranti area is arguably the steepest inhabited terrain in the world, rising from the Gangetic plain, dozens of feet above sea level, to Mt. Everest, almost 30,000 feet high, in only about a hundred South-North miles (see appendix 1). This slope is folded into deep mountain valleys (usually running approximately North-South) on the walls of which the Kiranti villages are usually arrayed (see appendix 1).

With the exception of Limbu, (with about 250,000 speakers) the Kiranti languages are not widely spoken nor well documented; serious work has only begun appearing in the last two decades and there have been grammars published of fewer than a dozen languages.[1]

Because of this paucity of data, it is difficult to know how many speakers there are. A rough estimate (considering data the from Watters 2003, Hanßon 1991, and van Driem 2001) would have to be somewhere around 400,000 speakers. Of that number, about half would be Limbu speakers and another quarter would be speakers of Bantawa or Sunwar.

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[1] Allen (1975), Bickel (2002), van Driem (1987 and 1993), Ebert (1994), and Toba (1984) are good examples of those who *have* produced much needed language-specific detail about various Kiranti languages.

However, the actual number of fluent speakers is almost certainly much less than 400,000 and falling. In Nepal, there are great social pressures to learn Nepali or English, and excluding Limbu, all of the Kiranti languages are threatened with extinction (Watters 2002).
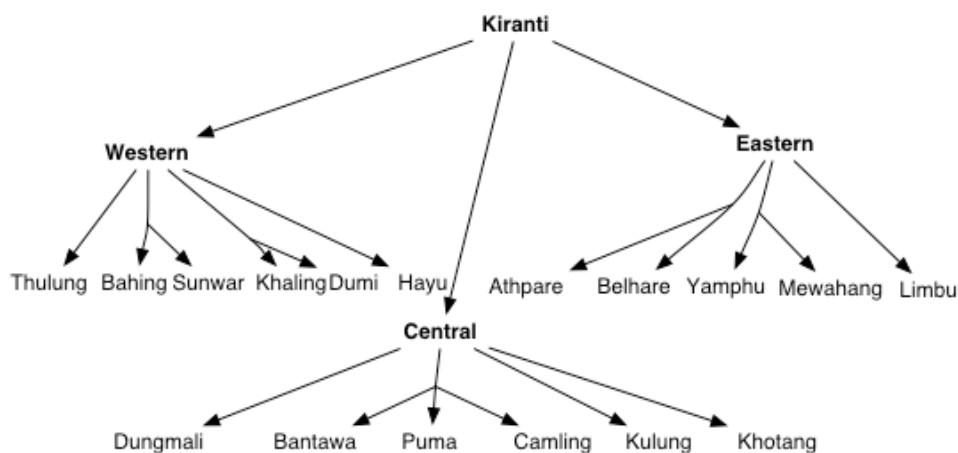
table 1. *a tentative classification of some major Kiranti languages based on proposals by Hanßon 1991 and van Driem 2001. (Although van Driem makes a separate major branch for Limbu.)*

The paucity of data also makes internal classification difficult. However, some general distinctions have been generally agreed upon (see table 1 and appendix 2), and some very close relatives have been established (Hanßon 1991, van Driem 2001) but the mid-level classification remains either non-existent or very fluid.

In general, Kiranti speakers are bi-lingual in Nepali (in more accessible areas often speaking Nepali preferentially). Because relatively small distances are involved, and because marriage between subcastes is practiced (in the nominally obsolete Nepali caste system, Limbu, Sunwar, and Rai are separate castes; Rai is further divided into a number of subcastes which often roughly correspond to language), speakers of one language often have considerable knowledge of other Kiranti languages, and one would expect

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borrowing to be the norm (Katry 2003). Kiranti languages often stay in the home or village – in the cosmopolitan environment of cities, using Nepali is more practical.

There is considerable variation between Kiranti languages in some grammatical aspects, but they are generally highly inflected with an elaborate morphology. In the paradigms Ebert (1994) gives for verb person and number markers in Bantawa, Camling and Limbu, for example, it is not uncommon to find strings of 5 or more suffixes (although at 9 morphemes Athpare takes the prize with its negative 1st person exclusive agent/3rd person non-singular patient suffix *-ni-m-get-ni-m-ci-m-ma-ga*). This rich morphology is demonstrated very well in the domain of Kiranti spatial terminology – information can be transmitted both in the extensive verb affixation (2) and noun affixation (1). To put it transparently, by extending nouns or a verbs with strings of suffixes, Kiranti languages can express complex concepts like *papa.du.t.nin* ("towards father, who is above us") or *yik.tiʔ.la.red.u.ŋ* (I chased it around and around, hither and yon) in one word – concepts that, in English, are markedly codable if codable at all.

1   Bantawa
     "iŋka papa.du.t.nin   khat.ŋa.ne nana;   khana.nin
     "I   father.**UPW**.(t).ALL go.1s.OPT e.sister:ADDR you.p

     mama.yu.t.nin   khar.a.ne,"   yiŋma   yiŋ.a nimaŋ.
     mother.**DWN**.(t).ALL go.IMP.OPT" QUOTE say.PT REP

     "I'll go **up** to Father, and you go **down** to mother," she said

2   Yamphu
     Tangiya   yik.tiʔ.la.red.u.ŋ
     Tangiya   chase.around.go_come.stop.>3.EXPS
     I chased [the ox] all the way to *Tangiya* and back.

The morphemes *-du-* in *papa.du.t.nin* and *-yu-* in *mama.yu.t.nin* (1) are examples of what is perhaps the most remarkable and the most remarked upon spatial morpheme in the Kiranti languages. All of the Kiranti languages have locative case suffixes which can attach a vertical dimesion to a noun or noun-like root (substantive). These vertical locative suffixes come in three types, often indicating a higher location or destination (UPW), level location or destination (HRZ), or lower location or destination (DWN).[2] The suffixes are often expressed as something like *-du/dha*, *-ya/yo/no*, and *-yu/mu* respectively for indicating high (3), level (4), and low (5). (see table 2).

3   Bantawa
         *'kaŋa ale dibuŋ.**di**   khat.ãi,' lod.yu.ko raicha*
         'I   today mountain.**UPW** go.1sNPT tell.p.NML *raicha*
         Today I'll go **up** into the mountains," she said.

4   Thulung
         *hunu leks.a   toɖka.**no** reb.ɖa*
         across go.IMP hole.**HRZ** look.IMP
         Go **over** there and look in the hole!

5   Belhare
         *unchi khim cua   u.rak.**mu**8*
         their   house water its.interior.**DWN**
         Their house **down** in the river.

Although as suffixes they are bound to a certain position, the same or similar morphemes are pervasive throughout Kiranti languages, often occurring across the domains of relational nouns (6), specialized verbs (7, 8), adverbs and demonstratives (see table 2).

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[2] The questions "Higher than what? Level with what? Lower than what?" will be addressed in section 3.

6   Thulung
        *diridin.**go.yu***
        lake.**inside.DWN**
        down in the (primeval) lake

7   Limbu
        thaŋ.eʔ.i·   *meʔdhaŋ.neʔn.ni·?*
        come_up.PT.Q   NEG.come_up.NEG.Q
        Did it **come up** or won't it?

8   Limbu
        tho·.lam ***yy.aŋ***
        up.ABL **come_down**.1sS:PT
        I **came down** (from above)

In addition to this varied use of the UPW, DWN and HRZ morphemes, Kiranti

languages use adverbs, relational adjectives and specialized verbs that do not seem to

contain the vertical locatives.

In sections 2 and 3, I examine in more depth the ways one Kiranti language handles

vertical space.

table 2. *Crosslinguistic examples of the UPW, HRZ, and DWN morphemes as they appear in certain domains. Data are taken from Ebert 1994, Ebert 1999, Rutgers 2000, van Driem 1993 and Gaenszle 1999. Although data is thin for some languages (Athpare) and others seem to lack some of the forms (Limbu) in general we see a pattern of a basic demonstrative or relational root taking a suffix of vertical dimension. In general, the morphemes remain very similar across languages, although we see a clustering of forms containing nasals in the HRZ and especially the DWN of some of the eastern languages (Limbu, Belhare, Mewahang, Yamphu) that does to seem to be widely evident in the other branches.*

	Limbu	Bantawa	Camling	Thulung	Khaling
UPW (suffix)		**-du**	**-dhi**	**-la**	**-tü**
HRZ (suffix)		**-ya**	**-ya**	**-no** (**-nu**)	**-yo**
DWN (suffix)		**-yu**	**-i**	**-yu** (**-jy**)	**-yü, -ü**
<u>adverb</u>					
above		**dha**	**dha**	a.**la**	
below		**ya**	h.**ya**	a.**no**	dha.**yu**
across		**yu**	h.**ui**	a.**yu**	
<u>demonstrative</u>					
up here	kɔt.**tho·**	o.**du**	u.**dhi**		tä.**tü**
over here	kɔt.**na**	o.**ya**	u.kh.**ya**		tä.**yo**
down here	kɔt.**yo·**	o.**yu**	u.kh.**i**		tä.**yü**
up there	khɛt.**tho**	mo.**du**	tyu.**dhi**	mö.**la**	mä.**tü**
over there		mo.**ya**	tyu.kh.**ya**	mö.**no**	mä.**yo**
down there	khɛt.**na**	mo.**yu**	tyu.kh.**i**	mö.**yu**	mä.**yü**

	Dumi	Mewahang	Belhare	Athpare	Yamphu
UPW (suffix)	**-tɨ**	**-tu**	**-(t)taN**		**-tu**
HRZ (suffix)	**-u**	**-yu**	**-(ʔ)ya**		**-yu**
DWN (suffix)	**-ɨ**	**-mu**	**-(p)mu**		**-mu**
<u>adverb</u>					
above	**thu**			**thoo**	
below				**yaa**	yo
across	yukkokɨ			**yoo**	
<u>demonstrative</u>					
up here	tom**tɨ**				ibbet**tu**
over here	tom.b.**u**				ibeʔ.**yu**
down here	tom.b.**ɨ**				ibeʔ.**mu**
up there	mom**tɨ**				akpet**tu**
over there	mom.b.**u**				akpeʔ**yu**
down there	mom.b.**ɨ**				akpeʔ**mu**

Vertical Space in Yamphu Rai

Yamphu (*yaamphu*) Rai is an Eastern Kiranti language (see fig. 1) spoken in the upper Arun (*aruuN*) (see appendix 1). It is closely related to Lohorung and Mewahang, and like them may have as many as 5000 speakers (Grimes 2000). It is represented by what may be the most comprehensive grammar of a Kiranti language yet published, *Yamphu* (Rutgers 1998) which contains not only an extensive grammatical description, but also some substantial and varied glossed texts and a lexicon. It is from this volume that I took all of the data in this section. Wherever possible, I tried to test rules and draw examples from the large corpus of glossed texts that Rutgers presents, rather than simply report what was in his grammar.

It seems possible to divide the ways in which Yamphu indicates the vertical dimension into three broad types. A: grammatically, that is by attaching one of the vertical locative suffixes we saw above (see table 2) to a substantive. B: lexically or semi-lexically, that is with a modifier adjective, a demonstrative or a locative postposition. C: verbally, that is with specialized verbs, auxiliaries or converbs, or adverbs. I will discuss each of these in turn.

Grammatical

In Yamphu, the HRZ, UPW, and DWN Kiranti vertical locative suffixes occur as, respectively *-yu*, *-tu*, and *–mu*. The three morphemes can occur in two basic contexts – with the basic locative (LOC) suffix *-peʔ*, or with the possessive (POS) *-æʔæ*.

The basic locative *-peʔ* marks the substantive to which it is attached as being place or destination. One of the vertical locatives affixed directly after *-peʔ* indicates the vertical location of the object. Rutgers explain the vertical locatives as being relative to the speaker (so that *-tu*, for instance, glosses as 'higher than the speaker', and *-pet.tu* glosses as 'at/to to a place higher than the speaker) but notes that (in terms of relativity) "their use in everyday situations is governed by other factors as well." A way to categorize some of these "other factors" and the use of the vertical locatives according to them is proposed in section 3.

The possessive *-æʔæ* marks the substantive to which it is attached as being in the possessive case. Similarly to *-peʔ*, *-æʔæ* can be followed by any of the three vertical locatives. In this locative context, it usually is rendered as *-æʔ* and marks a more general area than that referred to by *-peʔ*. That is, where *-peʔ.mu* means "at/to a spot lower," *-æʔ.mu* generally means something closer to "at/to an area lower," and in 9 below *Simma.æʔ.yu* means something like "across to the area of Simma" while *iskul.bet.tu* means "up to the school."

In practice, it seems that the vertical locative, with either the basic locative or the possessive, is affixed to a number of substantive types. Perhaps the most common place in which it occurs is in the names of towns or places (as in 9 and 10 below). In fact, place

names are almost always marked with a vertical locative and either the possessive or basic locative. In Yamphu conversational speech there are plenty of lexemes categorizing vertical space (see **Lexical** and **Verbal** below) which often contain morphemes very similar to the vertical locatives. However, in this speech domain, the grammatical vertical locatives, by which I mean the vertical locatives independently affixed to a word (with or without the basic locative or possessive morphemes), occur very rarely. (With the interesting exception of place names). A few explanations for this phenomenon spring to mind:

1. This grammatical case is becoming archaic in the language shifting environment, and in casual speech, or spoken by "regular people" it is rarely used. (There is also a far higher proportion of Nepali words in these texts.)

2. This grammatical case has always been reserved for more formal speech and therefore in casual speech, or spoken by "regular people" it is rarely used.

3. These grammatical categories simply lend themselves less well to conversation than they do to telling a story – painting a detailed picture of a world where up/down relationships are details listeners care about.

In other speech domains, the vertical locative affixes are also commonly linked to concrete objects (10), to more abstract objects (11) and also to pronouns (12).

Although I chose examples that showed both the possessive locative with vertical locative pattern and the basic locative with vertical locative pattern, the possessive locative with vertical locative pattern occurs much more commonly in the texts. It may be that the default is the more general possessive pattern, and that the locative pattern is only used to intentionally add on the specificity of an exact location.

9 *mo.ba   khad.a.j.iŋ,   khad.a.j.iŋ   **Simma.æʔ.yu***
   that. ELA   go.PT.DU.EXPS go.PT.DU.EXPS **Simma.POS.HRZ**

   iskul*.*bet.tu   *saks.a.j.iŋ*
   school.LOC.UPW   ascend.PT.DU.EXPS

   Then we went on. **In *Simma*** we went **up to the school**.

10 *moba   khad.a.ro   'sam.bet.tu   khæ·.ŋ.æ,'   lu·s.u.ro*
    that.ELA   go.PT.REP Tibet.**LOC.UPW** go.EXPS.FCT say..>3.REP
    [It] went. 'I'm going **to Tibet**,' he said.

11 ***igo.sok.pet.tu*–   *hæŋ pen.didok.m.æt.tu*–   *ŋa   ni·ma***
    this.top.LOC.UPW   you sit.as_if.ATNR.POS.UPW   fish   cook.INF

    khad.a.ro   ***mimm.æn.dok.m.æʔ.mu***   *radi   ag.a.ro*
    must.PT.REP   **down_there.POS.like.ATNR.POS.DWN**   rug   weave.PT.REP

    He had to cook the fish **up here** – just like where you're sitting – and **just like
    down there** she was weaving the rug.

12 *hoŋ.go.re   ka·.go   am.beʔ.yu   le·.tt.iŋ.æ*
    LCQ.TH.CEF   I.TH   your.LOC.HRZ   come.PF.EXPS.FCT
    That's why I've come to you.

Semilexical

Another way to indicate vertical space in Yamphu is through what Rutgers classifies as postpositions (see table 3 for a complete list). Although these structures behave in many ways similarly to the vertical locative suffixes, they are not necessarily bound to substantives in the same way, and occur with much less frequency and regularity. Because of space considerations, I will only look at the postpositions that seem most relevant to verticality: *-hoŋsiʔ*, *radaŋ*, *-sok*, and *soŋ*.

-kæk	beside
-hoŋsiʔ	**inside**
radaŋ	**bottom**
-raŋ	beneath
-sok	**top**
soŋ	**above**
-æŋ	back
rum	middle
-yim	between
-heʔma ~ -heʔmaŋ	side
-ra·ji	toward

table 3. *The locative postpositions in Yamphu*

As indicated in table 3, *-hoŋsiʔ* has the meaning of inside, and can be affixed similarly to the basic locative, after a substantive. It seems that any of the three vertical locative suffixes can be added to this (i.e. to go from *khim.hoŋsiʔ* (inside the house) to *khim.hoŋsiʔyu* (over inside the house).

Like most of the other locative structures in Yamphu, *-hoŋsiʔ* can affix to both destinations (as in 13) and locations (as in 14)

13   *phe·ri pira gundri tu·ho* **khim.hoŋsiʔ.yu** *huliya.ba* *læ·ʔ.a.ma*
     pheri pira gundri be.LCQ **house.inside.HRZ** *hulnu*.NOM do.PURP.INF

     hæ·.ye
     must.FCT

     Moreover, if there are seats and mats, you have to put them away **inside the house**.

14   *nuha.ba* *li·.nuŋ* *kho·.j.eʔ* *sauk u·k.nuŋ* *sasok imaŋ*
     nuhaunu.NOM become.SOC s/he.NS.ERG skin peel.SOC entrail what

     jammai **hoŋsiʔ.yu.ha** *caŋ.bes.u.ji*
     jammai **inside.HRZ.PLNR** take_out.RES.>3.3NS

     After we had bathed, they cut the hide and took out the guts and everything inside.

   However, in some languages (e.g. English) "inside" seems to be conceptually, if not grammatically, linked to "down." The amenability of *-hoŋsiʔ* to taking any of the vertical locative suffixes seems at first to preclude this sort of link. However if we consider the sentences below, it seems that perhaps the link is there: a verbal form indicating "down"ness is used not only when the vertical locative suffix agrees with it (16), but also when there is no vertical locative suffix (17, a more general sentence from a recipe), and when the vertical suffix seems to disagree (15).

15   *mo.ban.noʔ* *'lo buni.o,* *hago igo.beʔ hæŋ* **bora.hoŋsi.yu**
     that.ELA.EXF 'well bond_friend.ARQ, now this.LOC you **bora.inside.HRZ**

     peʔ.yus.e!'
     pass.down.IMP

     Then [the bear] said, "Friend, you get into this sack."

16   *swa·ma.hi.jhaĩ* **dai.hoŋsiʔ.mu** **peʔ.yus.a.mi.ro**
     bee.NS.CTP *dahi*.**inside.DWN** **pass.down**.PT.3PL.REP

As for the bees, they entered into the curds.

17   *wadihaŋma* **æm.ma**   *khæ·.ŋ.ha*
       leaven_herb **put_down** must
       You must put in the leaven herb.

These data show at least the possibility of a conceptual link between "inside" and "down" in Yamphu, at a level that perhaps completely bypasses that of the vertical locative suffixes. Other Kiranti languages hint at this, too: Allen (1972) translates the Thulung *go* (which also can take any of the vertical locative suffixes) as "within" and includes within the definition the form *dhaguiu* "lower down" but no other forms indicating vertical dimensions, and Ebert (1999) notes for the Bantawa "inside" only a form utilizing the noun for "hole," arguably a concept innately associated with downness.

The morpheme *radaŋ* carries the meaning of below, and is found with the basic locative *-peʔ*. It can either be affixed to a substantive or appear independently (as in 18).

18   *mo.ba*   **radaŋ.beʔ.mu**   *ikko kay.æʔæm.beʔ*   *akma*   *tu·.ye*
       that.ELA **below**.LOC.DWN one blacksmith.POS.LOC pig   be.FCT

       lu·.haks.a.mi
       say.send.PT.3PL

       They told us that there was a pig, down below at a blacksmith's.

Like *radaŋ*, *sok* "top" is used with the basic locative. It generally attaches to some concrete object that has inherent topness, and seems to be the counterpart of *-raŋ* (see table 3).

19   *mo.ba*   *siŋbu.**sok**.peʔ*   *saŋ.ʔitth.oŋ*   *lokhaŋ.ʔit.c.u*
       that. ELA treee.**top**.LOC ascend.PF.LCQ look.PF.DU.>3
       They climbed in a tree and looked [around].

Similarly to the other postpositions discussed here, *soŋ* (above) attaches to the basic locative and can occur with it as an independent word or as a postposition. In the example below (20) it is part of a sentence in which, although it is not obligatory to do so (see 21), the high verticality is marked not once or twice but three times – with an adverb, with *soŋ,* a postposition, and also with the UPW vertical locative suffix, *-tu*. The dual marking in *soŋ.bet.tu* here may be a way of agreeing with the far-distal *mettoŋ* (which is discussed below). That is, perhaps the distancing force of "further_up" implies an "above an location that is already higher than me." It is worth noting that in Yamphu as in many of the Kiranti languages (Ebert 1994), relatives are not common – 'above' is most often used without a reference point, i.e. independently, (21) being an exception.

20   *mettoŋ   soŋ.bet.tu   sip.pe·.tt.æ*
      further_up **above**.LOC.UPW fall.RES.PF.FCT
      [The snake] was a bit further up.

21   *mo.ba   Riŋgatti.æʔæ   khim.soŋ.beʔ   less.iŋ.æm.beʔ…*
      that.ELA *Riŋgattiya*.POS house.**above**.LOC come.EXPS.FCT.LOC…
      Then I arrived above Riŋgattiya's house…

Lexical

As we saw in table 2, the Yamphu demonstratives have, through combining with the vertical locative suffixes, potential for an extensive structure. Indeed, Yamphu demonstratives distinguish three degrees of distance: proximal (here), distal (there), and far-distal (way over there). Combined with the three vertical locative suffixes this gives a set of three by three structures (see tables 4 and 5). Several of the demonstratives have short and long forms; in a distribution similar to that of the POS+vLOC/LOC+vLOC (see

above) distinction, the short forms refer to a more general area while the long forms refer

to a specific spot.

	basic	+HRZ	+UPW	+DWN
proximal	*igobeʔ ~ ibeʔ*	*ibeʔyu*	*ibettu*	*ibeʔmu*
distal	*akkobeʔ ~ akpeʔ*	*akpeʔyu*	*akpettu*	*akpeʔmu*
far-distal	*mobeʔ*	*mobeʔyu*	*mobettu*	*mobeʔmu*

table 4. *demonstratives of place*

	basic	+HRZ	+UPW	+DWN
proximal	*igobeʔ ~ ibeʔ*	*igiʔyu*	*igindu ~ igitttu*	*igimmu ~ igiʔmu*
distal	*akkobeʔ ~ akpeʔ*	*akkiʔyu*	*akkittu ~ akkindu*	*akkiʔmu ~ akkimmu*
far-distal	*mobeʔ*	*miʔyu ~ miyu*	*mittu ~ mindu*	*miʔmu ~ mimmu*

table 5. *demonstratives of direction*

Interestingly enough, the most common of the demonstratives to actually occur in the

texts are the far-distals (as in 22, 23, and 24)

22   *khi·.di.ʔos.e*   **miyu**   *hiŋ.siʔ*   *ti·.ra.e*
      carry.apply.PURP.IMP **over_there** feed.SUP   go.go_come.IMP
      Carry the stuff, go over there and feed him and come back.

23   *…**mindu**.ra*   *yoŋa op.y.ok.pe·.tt.u*
      …**up_ther**e.MED   water spill.UFM.bring_down.RES.PF.>3
      …water was suddenly spilt from above.

24   *mo.ba*   **mimmu**   *ma·ks.æ*   *gottha.bek.ko…*
      that.ELA **down_there** bear.POS *goth*.LOC.TH…
      Down in the shed of the bear…

Rutgers also lists a number of demonstratives he calls demonstratives of relative place

and motion (see table 6). Again, although here the distinction between distal and far-

distal has collapsed, the most common terms in the texts are the distal/far-distal ones (as

in 21, 25, and 26)

keʔyoæræŋ	on this side
kettoæraŋ	up on this side
keʔmoæræŋ	down on this side
keʔyoŋ	further over this way
kettoŋ	further up this way
keʔmoŋ	further down this way
meʔyoæræŋ	over on the other side
mettoæræŋ	up on the other side
meʔmoæræŋ	down on the other side
meʔyoŋ	further away
mettoŋ	further up
meʔmoŋ	further down

table 6. *The relative demonstratives.*

25   ***meʔyoŋ***   *sokkhuma*   *cupt.a.j.u.ro*
further_lev Urtica_dioica meet.PT.DU.>3.REP
A little further along they met a stinging nettle

26   ***mettoŋ***   *waʔiŋ* *cupt.u.ji.ro*
further_up egg   meet.>3.3NS.REP
Further up they met an egg.

Verbal

Several Yamphu verbs have correlates or forms (variously called converbs or

auxiliary verbs) that can be affixed to other verbs. These range from fairly simple to

elaborate, and denote concepts as far ranging as doing something prematurely or to death,

or to excess, or almost, or incompletely. In the domain of space, the can denote such

concepts as circumnavagant motion (2) there-and-back-again motion (2) and unforeseen

motion (23, 34, 35). There are 5 basic verbs in Yamphu that indicate verticality, which

can occur either independently or as an auxiliary verb modifying another verb: *saŋma*

'ascend' and *yu·ma* 'descend'; *kæʔma* 'come up', *uŋma* 'come down' and *apma* 'come levelly'. Yamphu is one of the Kiranti languages in which none of the verbs of vertical motion are separable into any distinct morphemes indicating their verticality or other elements (unlike certain examples esp. in Limbu and Bantawa, e.g. (7) (8)).

The first set of these verbs *saŋma* 'ascend' and *yu·ma* 'descend', indicate general upwards or downwards motion. They can occur independently (27, 28) or as an auxiliary verb, affixed to and modifying a main verb. It seems that the auxiliary forms can affix to a wide range of main verbs (e.g. 29, 30) with *peʔ.yus* ('pass down', as in 15, 16) being one of the more common combinations.

27   **saks**.*a.j.iŋ*
        ascend.PT.DU.EXPS
        We went up.

28   *mo.ba*   *meʔmoŋ*   **yu·s**.*a.j.iŋ*
        that.ELA further_down **descend**.PT.DU.EXPS
        So we went down a bit further.

29   *'mo.beʔ*   *khak*.**sa**.*be·.tt.æ'*   *ka·.s.a.j.iŋ*
        that.LOC pierce.**ascend**.RES.PF.FCT cry.PT.DU.EXPS
"It's wormed itself up into there," we cried.

30   *phe·ri* *paidhæk.peʔ* *pey*.**yus**.*a.ro*
        pheri   seat.LOC   sit.**down**.PT.REP
        Then he sat down on the seat

It is interesting to note that the second set of these verbs, *kæʔma* 'come up' (31), *uŋma* 'come down' (32), and *apma* 'come levelly' (33), conflate the values of vertical directionality and motion towards some point, often the speaker (see section 3 for discussion). However, the gloss of "come (vertical)" is slightly misleading for the auxiliaries that derived from these verbs can indicate either intransitive motion 'moving

(oneself) towards a reference point' (34, 35, 36) or transitive motion 'moving something

(else) towards a reference point' (i.e. closer to "bring" – 37, 38, 39).

31   *mo.ba*   ***kæʔma***.*so*   *kissima* *lu·.ye*
             that.ELA   **come_up**.INF.too fear   be.FCT
             We are afraid to **come up**.

32   *mo.ba*   ***uks***.*a.j.iŋ*   *kancha.nuŋ*
             that.ELA   **come_down**.PT.DU.EXPS *kancha*.SOC
             So Kancha and I **came down**.

33   *mo.ba*   *dailo.ba*   ***ab***.*a.ro*
             that.ELA   *dailo*.ELA   **come_levelly**.PT.REP
             Then she **came over** from the door.

34   *hunununu* *hu·.yaŋ*.***gad***.*a.mi.ro*
             zoom-zoom   scatter.UFM.**come_up**.PT.3PL.REP
             Suddenly "zoom-zoom" they **swarmed up**.

35   *mo.ba*   ***mindu***.*ra*   *thutta.so* *yoktoʔ*
             that.ELA   **up_there**.MED trunk.too with_a_crash

             *ciy.y.**oks***.*a.ro*
             collapse.UFM.**come_down**.PT.REP

             So the log suddenly fell **down** from above with a crash.

36   *mo.ba*   *te·.ʔab.iŋ.ma,*   *siŋ*   *yaŋ.**ʔapt***.*u.ŋ.ma*
             that.ELA   turn.com.EXPS.12NS firewood carry.**bring_levelly**.>3.EXAG.12NS
             Then we came back and brought firewood with us

37   *mo.ba*   *sæk.**ktt***.*a.j.uŋ*
             that.ELA   pull.**bring_up**.PT.DU.>3.EXAG
             Then we reeled in [the line].

38   *Ragala.ba*   *um.**mukt***.*a.ju,*   *Ka·makhola*   *lend.a.ji*
             Ragala.ELA   trail.**bring_down.**PT.DU.>3 *Kama_khola* come.PT.DU
             They traced [the dowsing rods] from *Ragala* **down** and came to the *Kama* river.

39   *leʔy.**a·pt***.*u.ro*   *pa·kkhæʔ.yu*
             abandon.UFM.**bring_levelly**.>3.REP   outside.HRZ
             She left him outside

table 7. *The auxilliary forms of the verbs of vertical movement*

-ʔab- ~ -ʔap-	come levelly
-ʔapt- ~ -ʔap-	bring levelly
-ʔug-/-ʔuks- ~ -ʔuk-	come down
-ʔukt- ~ -ʔuk-	bring down
-kad- ~ -kæt- ~ -kæ·	come up
-kætt- ~ -kæt- ~ -kæ·-	bring up
-yus- ~ -yu- ~ -yu·-	descend/downward motion
-saks- ~ -saŋ̣-	ascend/upward motion

Clearing a Space:

a model for understanding spatial terminology

Reference Frames

In order to clearly discuss Kiranti ways of categorizing space, (i.e. "what *exactly* are they talking about?") which fall somewhere between markedly codable and uncodable in English, we need to delve back into semantics. There have been many strategies proposed to formalize spatial concepts like front, up, and south, (see Levinson 1999 for review) but most seem to converge on a three-way distinction into something like Levinson's (1996, revised in Levinson 1999) *intrinsic*, *relative*, and *absolute* frames of reference.

In this terminology intrinsic refers to those locative statements that refer to the innate qualities of a reference object – for example, the front of a house. We know that houses have fronts, and can use this knowledge in English to say, for instance "the ball is in front of the house" (with the same meaning as "the ball is at the front of the house." Because the intrinsic frame of reference relies on the object's qualities, some objects don't work: "*the ball is at the front of the tree" is unacceptable because trees do not, canonically, have fronts.

However, the astute reader will be thinking that in English we can indeed say "the ball is in front of the tree." This is an example of the relative frame of reference, and the confusion that can occur between reference frames when they share vocabulary.[3] Here we

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[3] Henceforth, I will refer to the first, intrinsic use of the term "front" as "front$_j$" and the relative use of the term as "front$_i$"

are not saying "the ball is at the $front_j$ of the tree," but rather "the ball is in between me and the tree." This is the essence of the relative frame: locative statements are informed by the location of the speaker. Of course, statements like "the ball is in $front_i$ of me" also fit into this category.

The final reference frame in the three-category system is the absolute. Absolute frames of reference rely neither on the speaker's position nor on the qualities of reference objects, but rather are fixed coordinates that will yield the same naming pattern regardless of where the speaker is. The classic example of an arbitrary frame of reference in English is cardinal directions: North, South, East and West.

This three-category system of reference frames is in wide use. It has been presented and used, in a variety of areas from anthropology to psychology to linguistics, with what are essentially minor modifications in terminology, by (for instance) Miller and Johnson –Laird (1976), Landau and Jackendoff (1993) and Carlson-Radvansky (1993). However, when trying to understand the idea of reference frames and apply them to the data from Kiranti languages, I came across the same problem as Levinson (1999) and Bickel (1997) – namely, the above distinction between $front_i$ and $front_j$. Levinson's model, as I presented above, attempts to solve the problem by changing what had previously been called "deictic" to "relative." I ended up understanding the problem in a different way – one that turned out to be quite like what Bickel (1997) suggests. He goes as far as to separate out different values for the origin of the coordinate frame, the secondary reference object, and the "ground" or primary reference object. However, for his more anthropological purposes, he seems not to need this distinction after all, and moves away from the schematic towards a name-centered model (i.e. he re-conflates the values into a

system divided into named reference frames: "egomorphic," "personmorphic," "ecomorphic" etc.)

I wish to make some finer distinctions between the meanings of locatives in some cases, and broader categories in others. To readily account for all of the data, I will propose a slight modification to the models of Bickel and Levinson, a more schematic approach, that allows me to frame some unanswered questions about vertical space.

The World of Axles and Fixes…

…is a strange place. For the moment we'll think of it as a two dimensional plane, on which are scattered random objects (trees, balls, chairs etc.). If I want to point out one of these objects ("which ball?") I use a coordinate frame, a sort of large cross with long telescoping arms that hovers above certain objects. Each of its arms is marked with a directional word: perhaps "right," "left," "front" and "back" or "north," "south," "east" and "west." If the coordinate frame happens to be hovering over a tree, and its arms are marked with the words North, South, East, and West, I simply have to see which arm passes over the ball I'm trying to differentiate, (say this particular ball is under the arm marked "East") and combine the various pieces: "which ball? the ball that is east of the tree."

This is fine, but what about our problem, "$front_i$" and "$front_j$"? In that case, the other coordinate frame would be centered on the tree, the "right," "left," "front," "back" frame. But a tree doesn't have a intrinsic front, so our model should produce "$front_i$," what Levinson called relative, "the ball is to the left of the tree from my point of view."
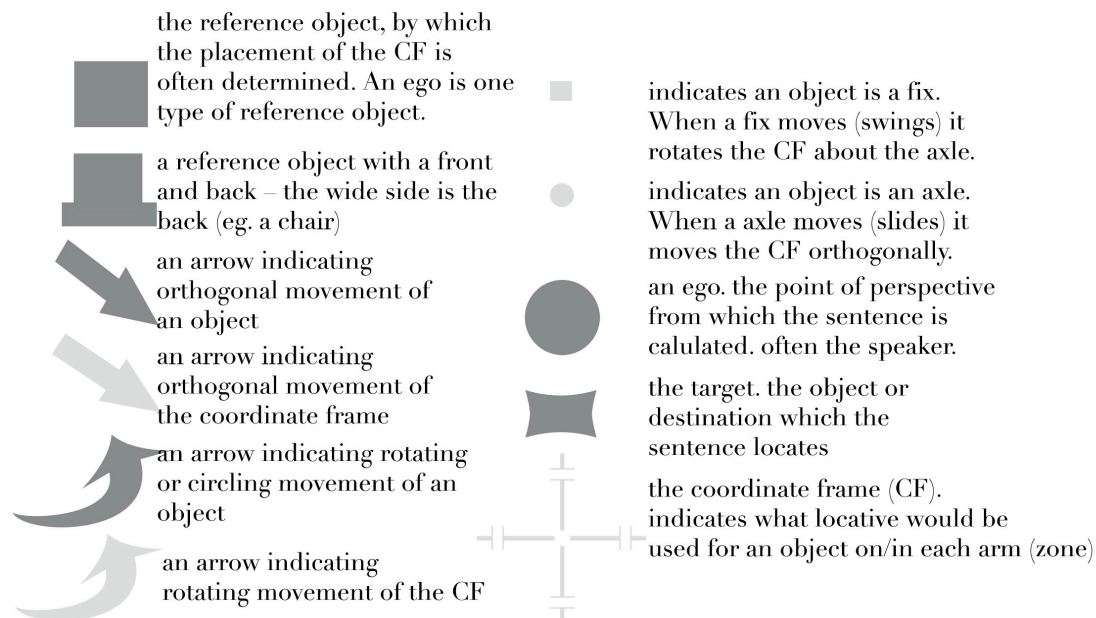
Here, on closer examination, we find that the place at which the coordinate frame passes over the tree is different than the place where it passes over the ball, and where it passes over the viewer. The coordinate frame's origin is centered over the tree, and it is attached in such a way that if the tree were to rotate, the coordinate frame would be unaffected (and vice versa) but if the tree were to get up and walk off, the coordinate frame would stay centered above it, like a giant propeller beanie. That is, the tree functions like an axle to the coordinate frame. The ball is not attached at all. However, the viewer, off on one arm, is fixed tightly to that arm. If the viewer (or "fix") was to move in any way that wasn't just toward or away from the tree (in which case the telescoping arm would function smoothly) it would rotate the entire coordinate frame as it moved. (See figures 2 and 3).

To put it more clearly: an axle meets the coordinate frame at its origin. If the axle moves orthogonally, the coordinate plane moves with it. If the axle rotates, the coordinate plane will not be affected. A fix may be affixed anywhere to a coordinate plain. If the fix makes a significant movement[4] then it will be turning the coordinate frame about it the axle. Ideally, all of our semantically different situations could explained with different axle/fix structures – if the axle is set to the speaker, or the addressee, or some other ego (a character in a story for example), or another object; or if the fix is set to the speaker, addressee, etc.

It makes a lot more sense with diagrams:

---

[4] For a fix, motion directly towards or away from its axle is usually not significant – it is simply collapsing or expanding the coordinate frame arm which it fixed to without really changing the relationship between the fix, the axle, and the coordinate frame. Given this (i.e. discarding motion the increases or decreases the distance between the fix and axle) the only significant motion for the fix is to move on the perimeter of a circle whose center in the axle and of which the section of coordinate frame arm from the axle to the fix forms a radius. Because of this constrained significant motion, I will often refer to fix motion as "swinging."
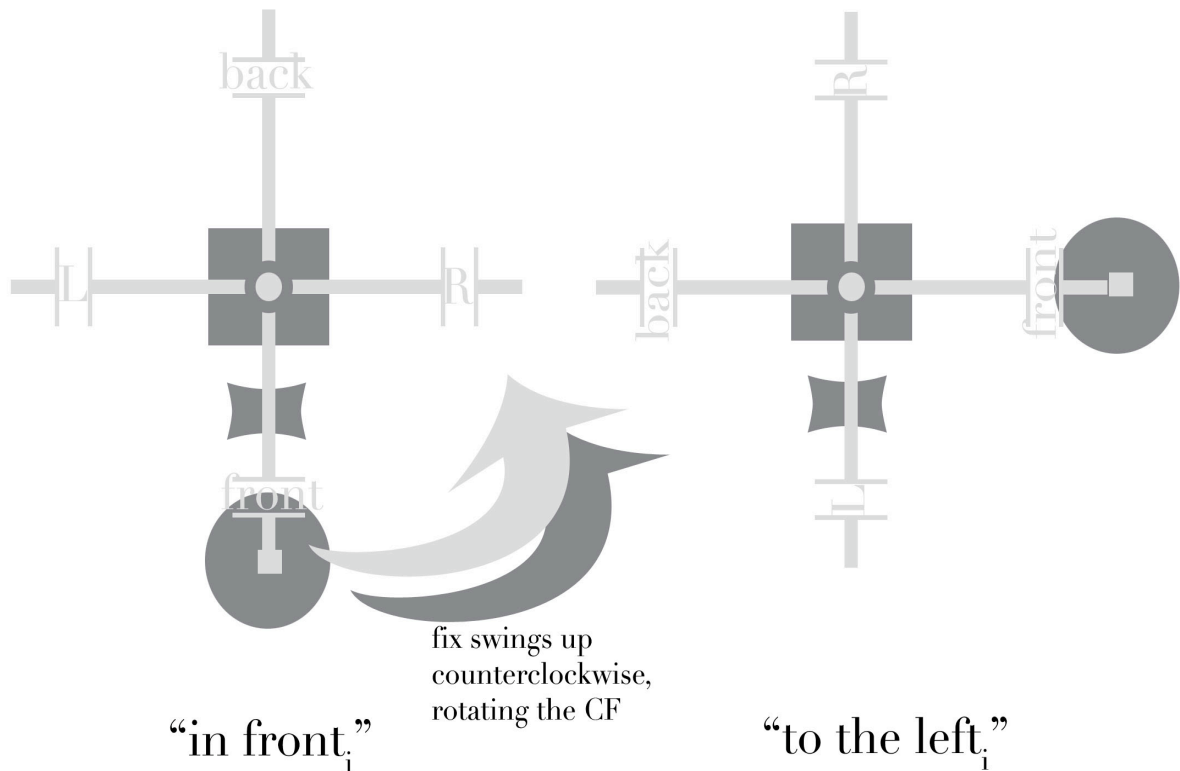
figure 1. a key to the world of axles and fixes.

the reference object, by which the placement of the CF is often determined. An ego is one type of reference object.

a reference object with a front and back – the wide side is the back (eg. a chair)

an arrow indicating orthogonal movement of an object

an arrow indicating orthogonal movement of the coordinate frame

an arrow indicating rotating or circling movement of an object

an arrow indicating rotating movement of the CF

indicates an object is a fix. When a fix moves (swings) it rotates the CF about the axle.

indicates an object is an axle. When a axle moves (slides) it moves the CF orthogonally.

an ego. the point of perspective from which the sentence is calulated. often the speaker.

the target. the object or destination which the sentence locates

the coordinate frame (CF). indicates what locative would be used for an object on/in each arm (zone)

fix swings up
counterclockwise,
rotating the CF

"in front$_i$"

"to the left$_i$"

figure 2.   *a*   *b*

The generalized diagram that applies to statements such as "the ball is in front$_i$ of the tree." The axle is the reference object (a=o), a tree in our example. The fix is the ego, in this case the speaker (f=e$_{(1)}$)[5]. The target (ball) is sitting in the zone of "front." The arrows and 2b indicate how the axles and fixes work in motion, and offer a test of the system. If the fix swings up as illustrated, the "front" zone will be rotated off the target and the L(eft) zone will be rotated on. This corresponds with speaker intuition – in the situation illustrated in 2b, we would describe the target as being to the left$_i$, that is "The ball is to the left of the tree."

---

[5] The ego is often the first person (that is, the speaker: e$_1$) e.g. "the ball in front of the tree," however the second person (addressee: e$_2$) can also be indicated e.g. in imperative "(You) get the ball to the (your) left of the tree!" The ego can also indicate pretty much anything else, explicitly "The ball to left of the tree from that badger's perspective." For purposes of broad transcription, e will be satisfactory.

"in front$_j$"   "to the side$_j$"   "behind$_j$"

figure 3.   *a*   *b*   *c*

Generalized diagram illustrating the use of "front$_j$." In 3a the fix is the object (a chair, say) and the axle is the same object (a=f=o). The target falls in the "front" zone. If the fix moves, it will rotate the CF around the axle (rotating the S(ide) zone onto the target, as predicted by speaker intuition) – the fact that the fix and axle refer to the same object is coincidental. Also, if the axle moves it will carry the CF with it, moving the "back" zone onto the target (again congruent with speaker intuition). Note that the ego is not fixed or axled onto the CF and therefore cannot affect it.

This example is directly analogous to that of the most basic (Pederson 1998) English distinction "(to my) right, left, front or back." In that case, the speaker would be both the axle and the fix (e.g. if you turn or if you move orthogonally, the domain of things "in front of you" changes).[6]

---

[6] This speaker centered form can be formalized as f=a=e$_1$. Of course, this can be applied to the second person too (f=a=e$_2$), leading to perhaps the most famous example in the colloquial English of why we need all of this mess of axles and fixes "*Your* left or *my* left?"

north

w ⊹ e

south

the axle slides down
diagonally, carrying
the CF with it

(with no fix, the CF
will not rotate, regardless
of the rotation of the axle)

north

w ⊹ e

south

"south of"

"west of"

figure 4.   *a*   *b*

A generalized diagram of cardinal directions (still in 2 dimensions – for non-
Euclidean geography see below). The reference object is the axle. Despite Levinson's
(1999) description of abstract reference frames, there is no fix (i.e. a=o, f=ø). This means
that one the coordinate frame is set[7] the CF will not rotate. As illustrated in 4b, if the
location of the reference object changes orthogonally the zone over the target can change
(in this case to west) but the CF remains, like a compass needle, floating unrotatably
above the axle.

This same basic axle/fix structure also applies to egocentric cardinal directions (e.g.
north of me), if the speaker is the axle.

---

[7] That is, it most be positioned with the "north" zone pointing north, just as in fig. 3 the coordinate frame
had to be positioned with the "front" zone pointing away from the wide back end of the chair and when
using a f=a=e construction "front" is set as "e's ventral side."

as the axle
slides up it
carries the
CF with it

"towards"   "away from"
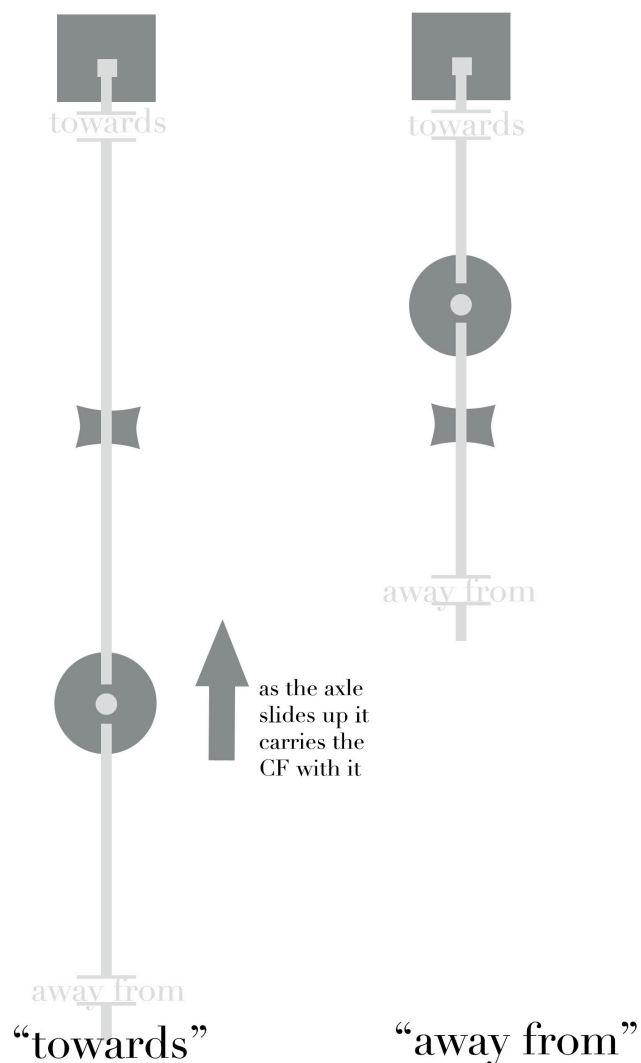
figure 5. The axle/fix model can also be applied to simple 1 dimensional locatives. In

this case the telescoping nature of the CF arms is illustrated. This example is extensible to

several other cases, including both well-attested and impromptu landmark-based locatives

(e.g. homeward/ libraryward), ablative and mediative (through or from) cases, and even

non–Euclidean cardinal directions (see below).

Its form (a=e, f=o) is the last of the four broad possibilities (see fig 2. for a=o, f=e, fig

3. for a=f=e and a=f=o, and fig. 4 for f=ø).

Axles and Fixes: Into the third dimension

Cardinal map directions (on a 2D plane) are explained by a f=ø structure. But what about non-Euclidean geography? Can this model move into the third dimension? It seems it can – consider the sentence "the target is south of me (on the globe)." We can understand this best by setting up the same structure as immediately above: a=e, f=o. The speaker is the fix and the south pole is the axle. The only difference here is that the CF, rather than being flat, is curved: mapped to the spherical earth.

This sort of 3D application is useful in dealing with our locatives of interest, those of vertical placement. Consider the English locatives "up" and "down." Now that our world has three dimensions, we can give the CF a third arm. Analogous to the axle/fix structure for map directions and globe directions, we two treatments for up and down.

The first, like that of map directions, is fixless. The arms of the CF extend up and down from their origin at the axle, and if the axle rotates the arm does not turn with it (for example if the axle in question is a standing person who lies down, the CF will move a little orthogonally, but will not rotate (see figure 6).
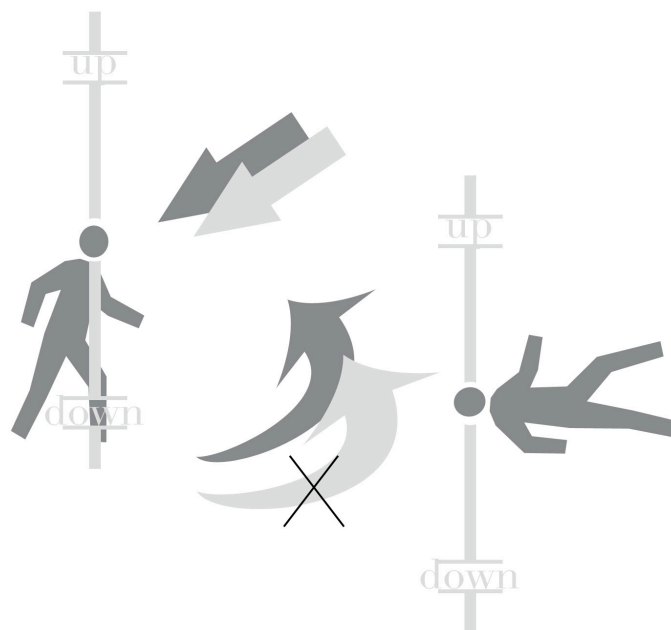
Figure 6. *The fixless up/down CF will not rotate as the axle does, but will follow it as it moves orthogonally.*

The axle, of course, is not always the speaker – it can be the addressee (e_2, as in "look up"), the expected or habitual position of the target (t_e, as in "look down there, he's up in a tree"), or any reference object (as in "…above the badger").

The other treatment, in the real world where we live on the surface of a sphere, simply has the "down" arm fixed at the center of the earth – however we poor axles may twist and turn, "down" remains synonymous with "towards the earth's center."

Axles and Fixes: Yamphu in the Model

How do our data from Yamphu fit into this model? Does the model illuminate them at all? For the most basic situations, it seems almost unnecessary to frame them in the world of axles and fixes. Consider (40). In *akkhuma.be?* 'at/in the earth', the simplicity of the

basic locative and the irrelevance of the speaker or viewers role render the a/f structure almost pointless. In essence it's a one dimensional concept, a point – just the target.

40   *cam.jari*   *pi·.nuŋ*   *kaniŋ.æʔ*   *mo.ba*   *cam*   *akkhuma.**beʔ***
         paddy.seed   give.SOC   we^{pe}.ERG   that.ELA   paddy   soil.**LOC**

         tub.u.ŋ.ma
         sprinkle.>3.EXAG.12NS

         After [God] gave us this seed, we proceeded to sow it in the earth.

     However, as soon as a vertical locative suffix is added (41), the a/f structure unfolds into two-dimensions – something that is clear and potentially helpful.

41   *Mottimb.ætt.**tu***   *ca·r ma·na*   *siya*   *yok.ti.be·.ʔ.n.æ*
         Mottimba.POS.**UPW** *caar maanaa*   husked_rice   seek.apply.DAT.PF.1>2.FCT
         I've looked for four maanaa of rice for you up at Mottimba's.

To understand this why Mottimba is marked as UPW, we now have a use for our a/f structure. The subject's location is set as the axle, with Mottimba's being the target. The fix, in this case, as with many of the medium-scale uses of the vertical locative suffixes, is a hilltop. This case is similar to that above of cardinal directions on a spherical earth (a=e, f=o). Mottimba's falls into the "up" zone. Depending on the hilltop set as fix, the scale of the sentence can change. Indeed, at some point of broadening scope, the fix may become as far off and abstract as to make the a/f structure effectually fixless. That is, the concept of North (which Ebert (1999) asserts is rarely used in Kiranti languages) becomes conflated with that of "up." This would explain otherwise curious sequences like (41) and may address the skepticism with which Thulung speakers greeted the idea that England was far to the north but also had farmland and a mild climate (Allen 1972). The sequence below is from a folk tale in which an animate needle is journeying up to

Tibet, being met and joined by other companions on his way. The tale is formulaic and

repetitive, and although he is "going **up** to Tibet" (41.1, 41.3, 41.5) after his first two

meetings the travelers go "further levelly"(41.2, 41.4). It is only after the third meeting

that the travelers go "further up" (41.6). This would seem to provide evidence that in

some cases, the UPW suffix indicates a fixless structure rather than one that is fixed on

an actual hilltop. (Alternately, this could be an expression of the Haugen effect, which is

briefly discussed in section 4.)

41.1   *mo.ba   khad.a.ro   'sam.bet.tu   khæ·.ŋ.æ,'   lu·s.u.ro*
       that.ELA go.PT.REP **Tibet.LOC.UPW** go.EXPS.FCT say.>3.REP
       Then "I'm going **up to Tibet**" he said.
…
41.2   *me ʔyoŋ   sokkhuma   cupt.a.j.u.ro*
       further_levelly nettle   meet.PT.DU.REP
       Further along they met a nettle.
…
41.3   *'sam.bet.tu   khæ·.ŋ.æ,'   ka·s.a.ro*
       Tibet.LOC.UPW go.EXPS.FCT cry.PT.REP
       "Going **up to Tibet**"he cried
…
41.4   *me ʔyoŋ   thutta cupt.u.ro*
       further_levelly trunk   meet.>3.REP
       Further along they met a log.
…
41.5   *'ka·go **sam.bet.tu**   khæ.ŋ.æ,'   ka·s.a.ro*
       I.TH   **Tibet.LOC.UPW** go.EXPS.FCT cry.PT.REP
       "I'm going **up to Tibet**" he cried"
…
41.6   *mettoŋ   wa ʔiŋ cupt.u.ji.ro*
       further_up egg   meet.>3.3NS.REP
       Further up they met an egg.

In the above examples it is ambiguous whether the axle is the subject or the speaker is the

real axle. That is, in the first example the speaker and the subject are the same entity, and

in the second, I argued that Tibet was UPW no matter what the axle is. However, looking

at other sequences, it becomes clear that the default axle is the subject. For instance, to continue the folktale above, once the travelers are quite far up into the mountains, they find a house (of the folktale buffoon, the much abused bear). Inside the house they secrete themselves in various places. (e.g. 16, 42)

42   *thutta.dhappa.jhai   tagar.æt.**tu***   *sit.ti.ghad.a.ro*
        trunk.big.CTP   threshold.POS.**UPW** hang.up.go.PT.REP
        hung (itself) up on the threshold

The vertical locative suffixes marking each of these place would be incomprehensible if they were referring to the speaker, as all of these events are happing in the speaker's UPW zone. For that matter, a sequence as simple as "passing down in" (16) and then "swarming back up"(35) does not work unless the axle is set to the subjects. Then their sequential destinations (targets) which would all occur in the same zone for the speaker, fall into the appropriate zones.

However, the speaker is certainly the axle in some occasions – for instance when the speaker and the subject are the same or when there is no subject. The speaker is also often the fix, as seems to be often dictated by the specialized verbs *kæʔma* 'come up', *uŋma* 'come down' and *apma* 'come levelly'.

Take, for example, the passage below, describing how the town of Uva was founded, related by a resident of Uva.

43.1   *ikko.jhaĩ   **kæʔ**.nuŋ*   *Waluŋ.heʔma khad.a*
        one.CTP   **come_up**.SOC *Waluŋ*.side   go.PT
        One **came up** (from Bahrabise) and went toward *Waluŋ*.

43.2   *ikko   i.dok   paŋ.gad.a*
        one   this.like   go_behind.**come_up**.PT
        One **came up** across the ridge here.

43.3   *ikko.jhaĩ*   **minmu**.*noʔ*   *pey.yag.a*
        one.CTP   **down_there**.EXF   sit.stay.PT
        One stayed behind **down there**.

43.4   *mo.ba*   *ikko.jhaĩ Maŋba-khim, ikko.jhaĩ Maŋji-khim*
        that.ELA   one.CTP *Maŋba-khim*, one.CTP *Maŋji-khim*
        One was *Maŋba-khim* (clan), one was *Maŋji-khim* (clan).

43.5   *mo.dok   læ·ʔ.nuŋ mo.ba   kani* **i.beʔ**   *pen.i*
        that.like   do.SOC   that.ELA   we[pi]   **this.LOC**   sit.12PL
        After doing that, we stayed **here**.

43.6   *Waluŋ.beʔ.**mu**.ha.ji*   *Waluŋ.beʔ.**mu**.noʔ*
        Waluŋ.LOC.**DWN**.PLNR.NS   *Waluŋ*.LOC.**DWN**.EXF
        Those of *Waluŋ* **down** below are **down** in *Waluŋ*.

Waluŋ is downstream, south, and presumably of lower elevation. Bahrabise is even further south, and presumably of even lower elevation. How do we explain the coming *up* towards Valun, a place that is later categorized twice as *below*? If we suppose that the verb *kæʔma* acts as a trigger to set the speaker as the fix and the subject of the sentence, as usual, is the axle, then 43.1 and 43.2 are explained.

In 43.3 and 43.5, the necessarily self-referential demonstratives *minmu* and *ibeʔ* seem to reset the axle – the coordinate frame of up and down axled onto the speaker takes effect, and both Bharabise (43.4) and Waluŋ (43.6) fall into the "down" zone.

A similar instance:

44.1   *mo.ba*   *ap.pes.a.j.iŋ*
       that.ELA   come.RES.PT.DU.EXPS
       Then we came this way.

44.2   **ap**.*pe.nuŋ*   *mo*   *pusæ·ʔ.mi*   *kha*   *i·.sæ·ʔ*   *i·.sæ·ʔ*
       come.RES.SOC   that   snake.GEN   word   say.SMG   say.SMG

       ab.*a.j.iŋ*
       come.PT.DU.EXPS

       We **came**, talking all the while about the snake.

44.3   **ab**.*a.j.iŋ*   *Na·ʔhoŋm.æʔ.yu*   *less.a.j.iŋ*
       come.PT.DU.EXPS   *Na·ʔhoŋma*.POS.HRZ   come.PT.DU.EXPS
       We **came** and arrived at *Na·ʔhoŋma*.

Although the use of *apma* (come across a flat plane) seems at first strange, the
problems can be resolved by realizing the temporal separation that keeps the "we"
implied in the dual affix to *apma* does not exactly include the speaker, but rather a past
version of the person who happens to be speaking. That is, the idea of "speaker" must
contain both temporal and physical identity. With that concept, we can easily set the
speaker as the fix, as "come" implies, and the "we" as the axle, just as above. There's
also an interesting possibility here that *apma* might have another meaning as "arrive" (at
least according to Rutger's gloss), which meaning it would share with the English (as in
"at last we came to the finish line").

        In conclusion, we can perhaps start to consider specific morphemes as marking or
triggering their words for certain a/f structural roles. LOC (or POS, in the locative sense)
specifies a target. The addition of a vertical locative requires that there also be an axle,
from whose coordinate frame the UPW, DWN or HRZ is determined. The default axle

seems to be the subject, but in certain conditions, it is set to the speaker or to other

objects. The specialized verbs *kæʔma*, *uŋma* and *apma* set the fix to the speaker. Other

objects, both tangible and less, can fill the roles of target, axle and fix; but these

morphemically dictated ones may be the most basic.

-4-

The Final Frontier:

questions and conclusions

Mapping and Metaphor

One question of particular interest (Allen 1972, Bickel 1997, Bickel and Gaenszle 1999) is that of how the vertical terminology of Kiranti languages can be applied in non-spatial domains. One element of this was already touched on in section 3 – that of the conflation of the values of UPW and 'north'. It seems that indeed, far more is connoted, in a metaphorical sense, but the concepts of UPW and DWN than just vertical dimension. Ebert (1994, 1999) and Bickel (1997) describe associations in certain Kiranti languages between the concepts of UPW and purity, austerity, and the male gods, and between DWN and wealth, abundance, foreigners and the female gods.

Bickel (1997) coined the phrase Haugen Effect, after a concept proposed in Haugen (1957). Haugen described how in Iceland, the cardinal direction terminology was often determined based on the ultimate goal of the travel, rather than the immediate canonical direction. In this way, depending on where you are going (and where you are, for in a fjord ones choices of where to go are limited) *northr* 'north' can indicate the canonical directions northeast, northwest, east, or even south. Bickel uses this concept to explain some curious instances of apparently misapplied vertical locative suffixes in the Kiranti language Belhare. This could also explain the problem in (41). Either way, by metaphor or by Haugen effect, the messiness doesn't fit within the a/f structure but rather modifies

it. The most dramatic example of this mapping is the very essence of Kiranti vertical coding: it is actually diagonal coding. "UPW" and "DWN," whatever their forms, will refer much more often to "uphill from" or "downhill from" than the canonical vertical above (e.g. (21) "meeting above the house" is meeting uphill from it, (11) the "top" of the house (see below) is not the roof but the uphill side.)

On a smaller scale, Ebert and Bickel both expand on Allen's (1972) observations in regard to the mapping of vertical terminology onto Kiranti houses. It seems houses have a top and bottom, depending on where the hearth/altar, the holiest part of the house, is. We can see this demonstrated nicely in Yamphu in (11), where *igo.sok.pet.tu (*this.top.LOC.UPW) or "here at the top" clearly refers to the hearth/altar, as the character being described is in the midst of cooking.

There are certainly some intriguing ways in which the Kiranti spatial terms are mapped onto other, non spatial domains. Of course, this is be no means limited to these languages. A moment of thought will turn up myriad examples in English, including those mapped onto the temporal domain "backwards in time," the judgmental domain "things are looking up," a mix of the two "a backwards town/a progressive idea," the emotional domain "he's feeling pretty down/it was uplifting," the political spectrum "left wing/right wing" and even, through borrowing from French, the social world "gauche/adroit." (Interestingly, these all seem to take o_e as the fix.)

In the end, is Kiranti coding of space really unique? Li and Gleitman have demonstrated that spatial terminology, and choice of reference frames, (i.e. of where to set axles and fixes) can be manipulated by changing the environment of speakers. Speakers of Kiranti live in an environment where whether a walk is up or down could

exponentially increase travel times, and where not too long of a journey could take a walker up into the Himalayan snows or down to the tropical heat of the Nepali Terai. However, other languages show this kind of emphasis of the vertical dimension, and not only other mountain languages like Tzeltal (Levinson 1999). There is also elaborate marking of the vertical dimension in Fering, a dialect of Frisian language spoken mainly on small, fairly flat islands (Ebert 1999).

Despite this, it seems that an environment this extreme must inform the language of its inhabitants. However, at least one model for making spatial terminology, axles and fixes, shows nearly the same structures for Kiranti vertical space as it does for simple English spatial terminology – the difference lies in the labels of the coordinate frame arms and in exactly what gets chosen as an axle or fix – both fairly fluid and malleable qualities. It may be, as Li and Gleitman suggest, that the difference is not really a conceptual one but rather simply a matter of necessity: we make and use terminology that is useful in our environment.

In any case, the intricate ways in which Kiranti languages code vertical space at least show us that there is another domain that has been ventured into – another thing that language can do.

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Appendix 1: map of eastern Nepal, highlighting some major Kiranti Languages.