EMBODIED GRAMMATICALIZATIONS OF TIME IN HAKHA CHIN: *KA HNU AND HMAI*

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ABSTRACT

In languages around the world, many of the words used to talk about time originate in the domain of space (e.g. ‘a long meeting’ vs. ‘a long table’). This leads us to ask: Does Hakha Chin conform to the documented pattern of using spatial terms to talk about time? In answering this question, we also learn what components are necessary to form temporal adverbial phrases. The data presented here suggest that in the context of temporal adverbial phrases, Hakha Chin does employ spatial terms to talk about time. Specifically, the body terms *hnu* (literally ‘back’) and *hmai* (literally ‘face’) are used to mean ‘last’ (as in ‘last week’) and ‘next’ (as in ‘next week’), respectively. Formation of a temporal adverbial phrase requires such a body term (*hnu* or *hmai*), which orients to either the future or past, and a term to indicate the temporal period (e.g. week, year).

Key Terms – Hakha Chin, space and time, temporal adverbial phrases, metaphor, embodiment

1. INTRODUCTION

Many of the words used to talk about time originate in the domain of space (e.g. ‘a long meeting’ vs. ‘a long table’, ‘looking forward to the summer’ vs. ‘facing forward’). Cognitive psychologists have long contended that this co-opting of spatial terms for time has a significant consequence for how people think about time: Simply, people cannot think about time *without* also thinking about space (Casasanto, 2008; but see also Walsh, 2003). To establish such a claim as true requires coordinated research efforts between psychologists testing the cognitive consequences of using spatial terms for time and linguists examining the pervasiveness—perhaps even universality—of spatial terms expressing temporal content.

To that end, the guiding questions of this paper are: (1) Does Hakha Chin conform to the documented pattern of using spatial terms to talk about time? If so, what type of spatial terms are used? (2) What components are necessary to form temporal adverbial phrases in Hakha Chin? To answer these questions, sentences with temporal adverbial phrases were elicited from two language assistants, both fluent in Hakha Chin. The structure of the phrases in Hakha Chin, including use of spatial terms was analyzed. The data presented here suggest that in the context of temporal adverbial phrases, Hakha Chin does employ spatial terms to talk about time. Specifically, the body terms *hnu* (literally ‘back’) and *hmai* (literally ‘face’) are used to mean roughly ‘last’ (as in ‘last week’) and ‘next’ (as in ‘next week’), respectively. Formation of a temporal adverbial phrase requires such a body term (*hnu* or *hmai*), which orients to either the future or past, and a temporal period (e.g. week, year).

2. BACKGROUND

In the subsections below, requisite background information is provided on Hakha Chin, the language assistants involved in data collection, and relevant research on time in language and cognition.

2.1. Hakha Chin and language assistants

Hakha Chin (HC) (also called Hakha Lai or Laiholh) is a member of the Kuki-Chin branch of the Tibeto-Burman language family spoken in the Chin State in western Myanmar. All of the data presented here were elicited individually from two language assistants (P and Z), both undergraduate students at Indiana University. P is a native speaker of HC and lived in Myanmar until he was 10 years old. Z is a native speaker of Zophei (also a Kuki-Chin language) but is fluent in HC after she started learning it at age 7 or 8. The tokens from these language assistants did not differ on a morphological or syntactic level for the utterances presented here.

2.2. Time in Cognition

Many of the words used to talk about time originate in the domain of space. Some researchers suggest that the reason we use spatial terms to talk about time is that time is abstract—something we cannot perceive using our senses—whereas space is concrete, perceivable, and navigable (Lakoff & Johnson, 1980; Núñez & Sweetser, 2006). Because we cannot directly interact with time alone, our mental representations of time may be too vague or fleeting to support higher order reasoning or language (Casasanto, 2008). Space, on the other hand, is a domain we can interact with using sensory-perception; we can move around in space at will. In order to make time more cognitively accessible for ourselves and our interlocutors, we think about and talk about time using the structure and language of space (Boroditsky, 2000; Boroditsky, 2001; Gentner, Imai, & Boroditsky, 2002).

Time as we experience it is unidimensional; we can place the distant past and the distant future at either end of a continuum, locating ourselves somewhere in the middle. Space, however, is three-dimensional (i.e., up/down, left/right, and front/back). In order to express sequential time using spatial terms, languages tend to borrow terms from a single spatial axis. Mandarin, for example, systematically uses the vertical axis, with *shàng* ('up') referring to earlier events and *xià* ('down') referring to later events (Scott, 1989; Boroditsky, 2001). Most languages, however, systematically use the sagittal axis, employing terms like 'forward', 'backward', 'ahead', or 'behind' to talk about the order of events (Núñez & Sweetser, 2006). Beyond variation in which axis is used to talk about time, languages can vary in their orientation on the axis. In English, we generally think of the future as in front of us and the past as behind us. The Andean language Aymara also uses the sagittal axis like English, but the orientation is reversed. Speakers of Aymara consider the *past* in front of them and the *future* behind them, as reflected in their language and spontaneous gestures (Núñez & Sweetser, 2006).

The data presented here suggest that HC uses the sagittal axis like English, with the future in front and the past behind. Unlike English, however, the basic spatial terms that are exapted¹ to talk about sequential time are body terms, instead of general space terms. *Hnu* (literally 'back') and *hmai* (literally 'face') are used to mean 'last' and 'next', respectively. While English does have 'ahead' and 'behind,' neither of these terms are obligatory in temporal adverbial phrases, as *hnu* ('back') and *hmai* ('face') seem to be in HC.

¹ Exaptation is an evolutionary biology term that refers to the use of a particular biological structure or function, in this case spatial terms, for a purpose other than that for which it evolved, in this case expressing time.

3. DATA

The present data were collected in two-on-one elicitation sessions (two linguists, one language assistant) between January and June 2018. Data elicited from one language assistant were confirmed by the other language assistant. All data below can only speak to sequential time, and more specifically to temporal adverbial phrases. (For an in-depth discussion on other kinds of time that exapt spatial language, see [Bender and Beller, 2014](#); and [Núñez and Sweetser, 2006](#)). All data are presented such that the first line of an example is the sentence in HC orthography (always italicized), the second line is IPA (always in square brackets), the third is an interlinear gloss, and the fourth line is an English free translation (always in quotes).

As seen in all examples below, eliciting temporal adverbial phrases such as ‘last week’ and ‘next year’ consistently yielded (*ka*) *hnu* [(kə) ɲu] and *hmai* [ɲai], respectively. *Hmai* transliterates as ‘face’ or ‘front,’ while (*ka*) *hnu* translates better to ‘the area right behind (me)’ or ‘(my) back.’ Examples (1 - 4), all provided by P, show *hmai* and *ka hnu* employed in sentences within temporal adverbial phrases. Examples (1) and (2) illustrate the use of *ka hnu* ‘my back’ in past-oriented contexts, whereas Examples (3) and (4) show *hmai* ‘front’ in future-oriented contexts. Additionally, Examples (1) and (3) use the more distal ‘year’ as temporal period of interest, while Examples (2) and (4) use the more proximal ‘week’ for comparison.

- (1) *ka hnu kum pa pakhat nih in arak sak*
 [kə ɲu kum pa pəkət niʔ ʔin ə-rak sak]
 1sg back year man one ERG house 3s-PERF build
 “Last year, a man built a house.”
- (2) *ka hnu zarh New York ah kuala ka rak tlong*
 [kə ɲu zaɿʔ nujoɿk ʔaʔ kuala kə rak tloŋ]
 1sg back week new-york LOC visitor 1s PERF go
 “Last week, I traveled to New York.”
- (3) *avan nih hmai kum in asak tee lai*
 [avan niʔ ɲai kum ʔin ə-sak tee lai]
 avan ERG front year house 3s-build EVENT FUT
 “Next year, Avan will build a house.”
- (4) *avan nih hmai kum in asak tee lai*
 [avan niʔ ɲai zaɿʔ ʔin ə-sak tee lai]
 avan ERG front week house 3s-build EVENT FUT
 “Next week, Avan will build a house.”

As Examples (1 - 4) show, not only do *hmai* and *hnu* have an embodied spatial meaning (i.e. ‘front’/‘face’ and ‘behind’/‘back’), they also have a temporal interpretation. While this kind of polysemy is present in English (e.g. ‘ahead’, ‘behind’) and many other languages, HC has an additional linguistic phenomenon of interest: an obligatory genitive marker *ka*. *Ka* always appears with *hnu*, which together mean ‘last’ as in ‘last week.’ Thus, *ka hnu zarh* translates to ‘the week behind me.’ It is not the case, however, that *ka* is present in all temporal adverbial expressions, past or future; in fact, it is infelicitous—perhaps even ungrammatical—to say *ka hmai*.

When *hnu* does appear without *ka*, it takes on the meaning ‘after,’ as seen in Example (5) below.

- (5) *rol* *ka* *ei* *hnu* *ah* *ka* *it* *tee* *lai*
 [ɿol kə ʔei ɲu ʔaʔ kə ʔit tee lai]
 food 1ss eat **back** LOC 1ss sleep EVENT FUT
 ‘After I eat, I will go to bed’

Without embodied *ka* to invoke a deictic interpretation, *hnu* ‘after’ simply indicates the order in which we should interpret the events as having happened. While there is a timeline of events, knowing the location of the speech time on the timeline isn’t strictly necessary to interpret the utterance. (This is not the case for *ka hnu* ‘last’, where deixis is called into play and knowing the location of the speech time on the timeline is vital for coherent interpretation.) Therefore, while *hnu* ‘after’ does appeal to a front/back orientation, it is not the sagittal spatial axis specifically, as there is no clear origin (e.g. deictic now).

Within a sentence, both *hnu* ‘after’ and *ka hnu* ‘last’ can be used together to arrive at the interpretation ‘after last week,’ as Example (6) shows.

- (6) *ka* *hnu* *zarh* *hnu* *in* *kan* *cangrio* *ka* *ngei* *loo*
 [kə ɲu zaɿʔ ɲu ʔin kən tsəŋɿijo kə ŋei loo]
 1sg **back** **week** **back** LOC back² bread 1ss have NEG
 “After last week, I did not have bread”

In both (5) and (6), *hnu* as ‘after’ is followed by a locative particle. That the locative particles are different (*ah* in (5) and *in* in (6)) may be due to the presence of a second predicate, ‘I eat,’ in (5) or because of a causal dependence of my not having bread on something that happened last week. It should be noted that the subject of the sentence and the temporal adverbial phrases can exchange places (e.g. example (3), ‘Next year Avan will build a house,’ could also be *hmai kum avan nih in asak tee lai*) without giving rise to infelicitous or ungrammatical utterances. Temporal phrases seem to have little sequential flexibility beyond this. Flexibility of ordering may interact with information structure, otherwise exactly what is imposing such restrictions is unclear.

4. DISCUSSION

HC makes use of two polysemous terms to talk about sequences of events: *ka hnu* and *hmai*. At their most concrete, *ka hnu* and *hmai* mean ‘the area right behind me’ and ‘face/front,’ respectively. These embodied spatial terms are then exported to talk about sequential events, as demonstrated by Examples (1 - 4), where they mean roughly ‘last’ and ‘next’, respectively. *Hnu* has an additional usage (‘after’), as evidenced by (5 - 6). In (6), though, we can see that *hnu* as ‘last’ requires a preceding *ka*—a first person possessive marker that here invokes a deictic now—while *hnu* as ‘after’ takes a locative suffix and no *ka*. The obligatoriness of *ka* for ‘last’ indicates its role in invoking deictic now for coherent interpretation. The events described in the utterance can be understood with respect to deictic now (i.e., the time of utterance) and therefore can be spatialized on the sagittal axis. For *hnu* as ‘after,’ *hnu* indicates the order of events in the utterance without suggesting that the time of utterance matters for interpretation. Unlike *ka hnu* ‘last’, *hnu* ‘after’ does not necessarily invoke alignment with the sagittal axis.

²When probed further, P suggested that *kan* may mean or be related to ‘back.’ It could also be a first person plural possessive marker, as in ‘our bread.’

4.1. Conclusions and Future Directions

HC's method of talking about sequential time is unlike many languages, in that it systematically exapts embodied spatial terms. The use of such embodied spatial terms may have cognitive implications, as suggested by evidence in other languages. Given the above Examples (1-6), several hypotheses about HC can be generated:

- (1) Compound temporal adverbial phrases in the future and in the past mirror each other in that they are composed of an orientational term (e.g. *ka hnu* 'last,' *hmai* 'next') plus a temporal period (e.g. *zarh* 'week,' *kum* 'year').
- (2) Compound temporal adverbial phrases can appear either before the subject, as in Examples (1-2, 5-6), or immediately after the subject, as Examples (3-4). As mentioned above, the location of the phrase may be related to information structure.
- (3) When the verb is not in the future tense, tense need not be indicated, regardless of the presence of a temporal adverbial. Conversely, tense is always marked on verbs in the future tense, even in the presence of a temporal adverbial (Kavitskaya, 1997).
- (4) As such, the presence of a temporal adverbial does not seem to influence the grammar already extant in the sentence. Rather, it simply adds more specificity about the time of event by relating it to other events.
- (5) Grammatical tense and aspect can specify the nature of the event described by the sentence. The exact details of this, however, require further investigation.

For more information on morphosyntactic features of HC that relate to time, tense, and deixis, the reader is directed to Barnes (1998), Bedell (2001), Bedell (2005), and Peterson (2016).

While the data here support the conclusions above, they also allow for many avenues of future investigation. All of the utterances included here describe events for which it would be reasonable for the speaker to have personal knowledge. Therefore, it is valid to ask whether *ka* in *ka hnu* is only elicited when the speaker is talking about events relative to themselves. Moreover, could we see genitive markers in second or third person attach to *hnu*? That is, how generalizable is the use of *ka hnu* and *hmai*?

It may also be worth investigating whether there are trends in which tense/aspect particles co-occur with *ka hnu* and *hmai* or whether modality could influence their usage. Furthermore, considering deictic elements are at play with *ka hnu* and *hmai*, exploring the relationship between *ka hnu* and *hmai* and other deictic or directional particles that may establish reference points is of interest. Such study could perhaps bring to light other embodied temporal terms.

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