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The Codification of Time on the North American Pacific Rim

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The Codification of Time on the North American Pacific Rim

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A window on the conceptualization of time in a culture can be provided by language. Ideas of time are among the most common semantic distinctions reflected in the grammatical categories of languages, yet the particular temporal categories found in individual languages show intriguing diversity. An understanding of the range of categories that have evolved can offer us an appreciation of the variety of distinctions accessible to the human mind.

A fruitful area for the investigation of temporal categories in language is North America. North American Indian languages show immense genetic and structural diversity. It is estimated that before the arrival of Europeans there were at least 300 mutually unintelligible languages, comprising over 50 distinct genetic units or families. Many of the languages have been characterized as 'polysynthetic': they exhibit relatively long words consisting of many meaningful parts, like the verb below from Barbareño Chumash, a language of the Chumash family of the southern California coast.

(1) Polysynthesis in Barbareño Chumash

Mary Yee, speaker, to J.P. Harrington

kakiysa?kiliqpuswun

ka = k-iy-sa -kili-iqip-us-wun

THEN = 1-PLURAL-FUTURE-DIMINUTIVE-CLOSE-BENEFACTIVE-3.PLURAL.OBJECT

'then we will quietly lock them inside'

(In the four-line format used here, the first line represents the word essentially as spoken, the second shows a division of the word into meaningful parts, the third provides a translation of each of the parts, and the fourth is a free translation of the whole.)

Polysynthetic languages often contain large inventories of grammatical affixes (prefixes and suffixes), providing good opportunities for the comparison of grammatical categories. Among the categories pertaining to time, the most seemingly straightforward semantically are those of tense. Tense markers situate

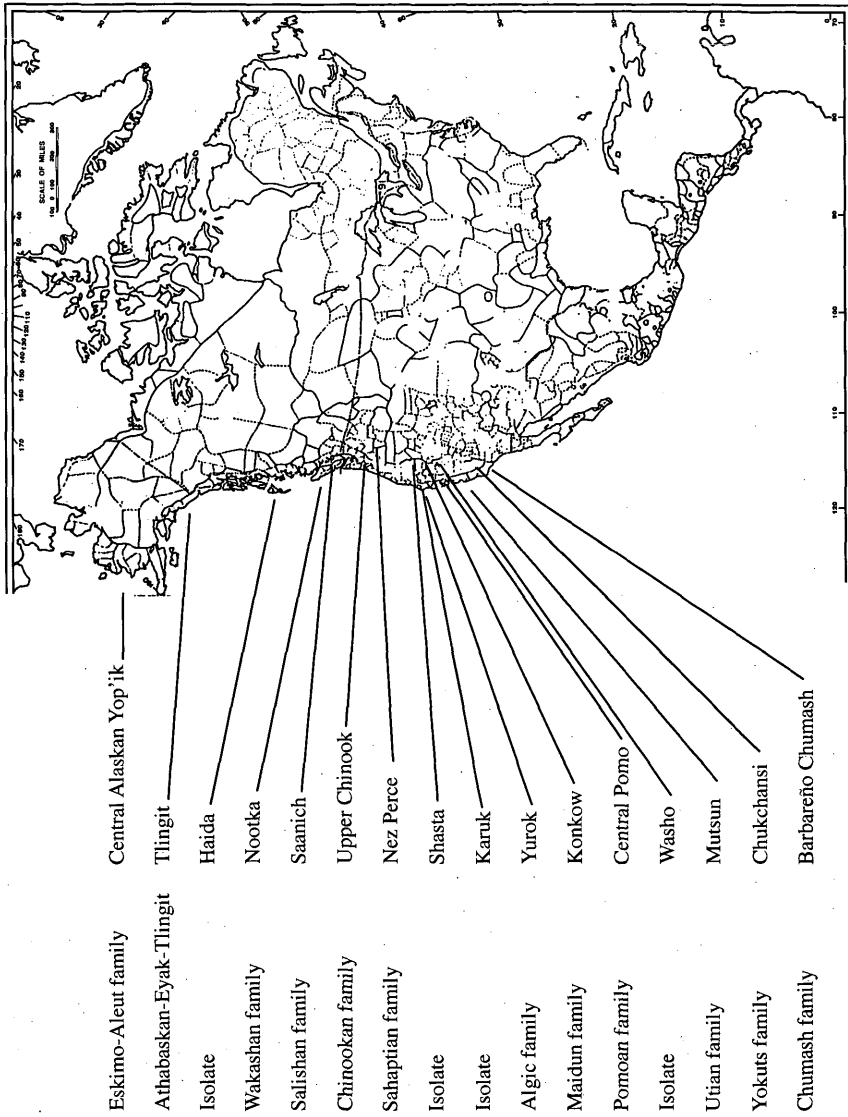


Figure 1

an event or state in time, such as at the moment of speaking (present), before the time of speaking (past), or after (future). In what follows, grammatical tense systems will be examined in languages indigenous to the Pacific Rim of North America. The geographical locations of the languages compared, each representative of a different family, are displayed on the map in Figure 1. It will be seen that the languages differ not only in their inventories of temporal categories, but also in important principles underlying their tense systems.

1. The Location of Tense Markers in Grammar

Notions of time can be expressed in numerous ways in language, from full phrases or words (*the night I missed my bus, yesterday*) to parts of words or affixes (*walk-ed*). We will be concerned here primarily with affixes, which represent the categories most deeply embedded in the grammar.

The location of tense affixes within grammar is not random. Tense is most often marked on verbs. This tendency is not surprising, since verbs typically denote events, which are inherently dynamic in nature, involving change over time. Nouns, by contrast, typically denote time-stable entities (Givón 1979:320–321), for which distinctions pertaining to time might seem less pertinent. Nevertheless, a number of North American languages exhibit tense distinctions on both verbs and nouns. Examples of past and future tense suffixes can be seen in the verbs and nouns in (2) from Central Alaskan Yup'ik, a language of the Eskimo-Aleut family spoken in Alaska.

(2) Central Alaskan Yup'ik tensed verbs and nouns

Elizabeth Ali and George Charles, speakers

Verbs

<i>nerua</i>	'I'm eating'	<i>ayagtua</i>	'I'm going'
<i>nerellruunga</i>	'I ate'	<i>ayallruua</i>	'I went'
<i>nerciqua</i>	'I'll eat'	<i>ayagciqua</i>	'I'll go'

Nouns

<i>ikamraqa</i>	'my sled'	<i>nuliaqa</i>	'my wife'
<i>ikamraqkelqa</i>	'my former sled'	<i>nuliaqkelqa</i>	'my late wife', 'my ex-wife'
<i>ikamrarqaqa</i>	'my future sled'	<i>nuliarqaqa</i>	'my wife to be'

Nouns with past tense markers typically denote entities that existed in the past. The Yup'ik past tense noun *ikamraqkelqa* 'my former sled' could be used, for example, to refer to a heap of splintered wooden ribs from a sled that had disintegrated, or to a sled that I remember from an earlier time. The past tense

noun *nuliaqkelqa* 'my late wife' could be used to refer to a person who is no longer alive. Nouns with future tense markers can be used for entities that are projected to exist in the future. Mrs. Ali remembers visiting her father's workshop as a child, where he would show her pieces of wood he referred to as *ikamrarqqa* 'my future sled'. On possessed nouns, the tense markers may indicate either the existence of the entity in another time or the possession of the entity in another time. The past tense noun *ikamraqkelqa* 'my former sled' could be used not only for the remains of a sled but also for a sled that I used to own but gave away. The future tense noun *ikamrarqqa* 'my future sled' could refer to a sled that someone is planning to give to me. The same ambiguity can be seen in the past tense noun *nuliaqkelqa*; in addition to meaning 'my late wife' (she used to exist) it can also mean 'my former wife' (she used to be mine). The future tense noun *nuliarqqa* 'my future wife' would be used for a woman I plan to marry: she is not yet mine.

Barbareño Chumash also shows tense on both verbs and nouns. Past tense is indicated by a suffix *-waš* or *-iwaš*, future by a prefix *-sa?*. (Possessed nouns typically appear with a demonstrative indicating relative distance, like the clitic *he?* = 'this' in (3)).

(3) Basic tense markers in Barbareño Chumash: Mary Yee, speaker

Verbs

<i>?ip</i>	'say'
<i>k'-ip</i>	'I say'
<i>k'-ip-waš</i>	'I said'
<i>k-sa? -ip</i>	'I will say'

Nouns

<i>?ap</i>	'house'
<i>he?-k-ap</i>	'(this) my house'
<i>ho?-k-ap-iwaš</i>	'(that) my house that was '
<i>ho?-k-sa?-ap</i>	'(that) my house to be '

Tense on nouns in Chumash is used much as in other languages, to indicate either the existence or the possession of an entity in another time. The past tense noun *k'apiwaš* 'my former house' could be a house that had tumbled down or, more often, the house I used to live in. The future *ksa?ap* 'my house to be' could be a house I am building or one that I plan to move into. Other typical uses of the past tense suffix with nouns can be seen in (4). It appears in *ho?knenēcwaš* 'my late grandmother' because she was alive in the past, though she no longer is, and in *siyiš?išnanišiwāš* 'their customs' and *hisiynohnonočwaš* 'the ancestors' again because both were from a time before the time of speech.

(4) Barbareño Chumash past tense on nouns

*hoʔknenēčwaš**hoʔ-k-nenēč-waš*

DISTAL-1-grandmother-PAST

'my late grandmother'

*siyišʔišnanišiwāš**s-iy-iš-ʔišnaiš-iwāš*

3-PLURAL-RDP-CUSTOM-PAST

'the customs (PAST) of their ancestors (PAST)'

*isiynohnonočwaš**hi = s-iy-noh-nonoč-waš*

DEP = 3-PLURAL-RDP-ANCESTOR-PAST

'the customs (PAST) of their ancestors (PAST)'

The passage in (5) was drawn from a description of traditional burial customs. A past tense suffix appears on the first word because the person buried is no longer a hunter. The past tense suffix appears on the nouns for 'horn' and 'rib' because at that point they no longer belong to the deer or the whale.

(5) Barbareño Chumash past tense in context

['When a fisherman dies, they put his fishhooks into his grave so that he will be able to go fishing.]

*čuwaʔalalwəličwaš,**ču = wa = ʔalal-wəl-in-š-waš*

and = if = AGENTIVE.NOM-SHOOT-DO-IMPERFECTIVE-PAST

And if it's a hunter (PAST)

*ʔisamsinayus**ʔi = s-am-sinay-us*

CLEFT = 3-INDENITE-put.in-BEN

they put in his deer horns (PAST),

*hisʰapʰapiwaš**hi = s-hap-hap-iwaš*

DEP = 3-RDP-HORN-PAST

*hilwə**hi = l-wə*

DEP = the-deer

*kesʔax,**ke = s-ʔax*

and = 3-bow

*kesyahyaʔ,**ke = s-yah-yaʔ*

and = 3-RDP-arrow

*kemeliʔa**ke = ʔmeliʔa*

and = all

*hilčoyčoyniʔ.**hi = l = čoy-čoyniʔ*

DEP-the-RDP-other

and his bow, and arrows, and all the rest.

*kesamisinaʔ**ke = s-am-sinaʔ*

and = 3-INDENITE-put.in

*wayi**wayi*

also

*hisxoloxiwaš**hi = s-xolox-iwaš*

DEP = 3-rib-PAST

*hilpaxat.**hi = l-paxat*

DEP = the-whale

And they also put in a whale's rib (PAST)?

2. Inventories of Tense Categories

Perhaps the most obvious ways in which languages differ is in the numbers of tense categories they distinguish. A few languages seem to show a simple division of the time line into past, present, and future categories. Others exhibit considerably more elaborate inventories. Washo, a language spoken in southwestern Nevada and adjacent California, contains at least four past tenses and three futures.

(6) Washo (Nevada) verbal suffixes: Jacobsen 1964

- | | |
|--------------|--|
| <i>-lul</i> | DISTANT PAST
before the lifetime of the speaker. (1964:636) |
| <i>-gul</i> | REMEMBERED PAST
in the distant past but still within the lifetime of the speaker.
(1964:636) |
| <i>-ay?</i> | INTERMEDIATE PAST
a time in the past earlier than the same day but not in the
extremely distant past. (1964:636) |
| <i>-leg</i> | RECENT PAST
an earlier point on the same day, or during the preceding
night. (1964:631) |
| <i>-āsa?</i> | NEAR FUTURE
in the near future with respect to the time of speaking. The
range of time covered extends from the immediate future to a
time perhaps an hour or so later. (1964:589) |
| <i>-ti?</i> | INTERMEDIATE FUTURE
expected to take place in the future, not immediately but after
the lapse of a short interval of time. This usually places the
event in a later portion of the same day, although if one is
speaking late at night, the event may be due to occur the
following morning. (1964:638) |
| <i>-gab</i> | DISTANT FUTURE
further in the future than one indicated by the intermediate
future, that is, an event expected to take place on the following
day or at any later time. (1964:647) |

In contrast, a number of languages have no grammatical tense categories at all. One of these is Yurok, a language of the northern California coast distantly related to the Algonquian languages that stretch across the continent to the Atlantic.

(7) Yurok tense: Robins 1958:32

There are no formally differentiated tenses in the Yurok verb. Verb forms of any of the paradigms, except the imperative, may be interpreted as referring to past, present, or future time, according to the linguistic and nonlinguistic contexts in which they occur.

2.1 Temporal inference

The absence of formal tense markers in a language does not of course mean that speakers have no way of expressing temporal notions. They may use full words, phrases, or sentences to specify a particular point in time. Inferences may also be made from other grammatical markers within the language.

Many languages of North America, as elsewhere, contain relatively elaborate aspectual systems. Aspectual distinctions specify the internal temporal structure of events. The English *I walked*, *I was walking*, and *I used to walk*, for example, could all be categorized as past tense, but they differ in aspect, in their temporal texture. *I walked*, a perfective, presents the event as a unit, viewed as a whole from the outside, complete with beginning and end. *I was walking*, a progressive, presents the action from the inside, in progress, a portion of an ongoing activity that does not include its beginning or end. *I used to walk*, a habitual, presents an activity characterized by recurrence. Although aspectual distinctions qualify events and states along different temporal dimensions than tense, certain inferences may be drawn from them about tense.

Central Pomo, one of seven languages of the Pomoan family of northern California, contains no past or present tense markers. The same verb may be translated with either past or present tense in English, and indeed, Central Pomo speakers often disregard tense when speaking English.

(8) Central Pomo ambiguity of tense: Frances Jack, speaker

dahélan

da = hél-an

pushing = dig-IMPERFECTIVE

'(he or she) is digging' or '(he or she) was digging' or '(he or she) digs'

The language does contain a relatively elaborate aspectual system. In addition to

various other aspectual distinctions they may carry, all verbs are categorized as either imperfective or perfective. The verb in (8) above is imperfective, so the action is portrayed as having some kind of internal temporal structure, here either progressive ('he or she is/was digging') or habitual ('he or she digs'). Perfective aspect verbs portray events as complete, unanalyzed wholes, as in (9).

(9) Central Pomo perfective aspect: Frances Jack, speaker

dahél
da-hél
 pushing-dig.PERFECTIVE
 '(he or she) dug'

Although the perfective verb in (9) carries no marker of tense, it can refer only to a past event. It cannot be future, because the language has a future tense marker that would be used if future time were intended: *dah l = ?k^he* '(he or she) **will** dig'. It also cannot be present; a present action would be in progress at the moment of speech, so would necessarily be classified as imperfective. Such an implication is not uncommon cross-linguistically: perfective verbs are inferred to refer to past events, since they would be inappropriate for present, ongoing ones.

Implications of tense may also come from grammatical markers of mode. A number of North American languages have grammaticized a realis/irrealis distinction that differentiates those events that have occurred or are occurring (realis) from those that remain within the realm of the imagination, such as futures or conditionals (irrealis) (Mithun 1995). An example of an irrealis suffix can be seen in the sentence in (10) from Nez Perce, a language of the Sahaptian family spoken in Oregon. The irrealis suffix *-u* appears on the verb 'break', since the man has not in fact broken the window.

(10) Nez Perce irrealis: Rude 1985:60

<i>pée-wewluq-se</i>	<i>háama-nm</i>	<i>pée-timis-nu?</i>	<i>?ipnéexn?es-ne</i>
3.TR-want-PROG.SG	man-ERG	3.TR-break-IRREALIS	window-ACCUSATIVE

'He wants the man to break the window.'

Nez Perce main clauses marked as irrealis are translated with the future tense in English if there are no additional markers present in the clause to identify them as conditionals.

(11) Nez Perce irrealis interpreted as future: Rude 1985:60-61

<i>páa-y-no</i>	<i>wa' uisx</i>
1-arrive-IRREALIS	one.day.away

'I **will** arrive tomorrow.'

Future tense may be inferred from other mode markers as well. Shasta, a language of Northern California, contains verbal prefixes for distant past, near past, and present tenses, but none for future. The language also contains a volitional prefix indicating the intention to do something. Volitional verbs are typically translated as futures.

(12) Shasta: Silver 1966:122

<i>p'-áhus·i·k</i>	'He talked (long ago)' or 'He used to talk'
<i>k'w-áhus·i·k</i>	'He talked (recently)'
<i>kw-áhus·i·k</i>	'He is talking'
<i>t'-áhus·a?</i>	'He intends to talk' > 'He will talk'

A common source of tense markers in languages all over the world is the domain of space. Spatial expressions are often used metaphorically to refer to location in time. In English, for example, we speak of events occurring 'before' a particular time, or 'at' a particular time. An interesting kind of tense implication from spatial markers can be seen in Barbareño Chumash. Barbareño, like most languages, contains demonstratives that distinguish relative distance from the speaker.

(13) Barbareño Chumash demonstratives: Mary Yee, speaker

<i>he?</i>	proximal	'this' (near the speaker)
<i>ho?</i>	distal	'that' (further from the speaker)
<i>hu</i>	remote	'that' (far removed or invisible)

The remote deictic *hu* is used for objects that are remote in space or time. This marker of remoteness is also used with verbs to indicate that an event occurred at a remote time, as in (14). Mrs. Yee, the speaker, was discussing kinds of lightning, noting that one kind only flashes across the sky, but another contains a rock core that hits the earth. Her account did not contain the past tense suffix *-waš*, but the passage below is clearly interpretable as past. In the first line, the remote marker *hu* = 'that' on the verb 'strike' ('zero in on by air') is sufficient to locate the event in the remote past. The meteor itself is also located in the remote past with the same marker.

(14) Barbareño Chumash use of remote deictic for time

<i>me'li</i>	<i>huspintikay</i>	<i>hiho'squntaw</i>
<i>me'li</i>	<i>hu = s-pil-tikay</i>	<i>hi-ho's-quntaw</i>
when	REMOTE-3-BY.AIR-ZERO.IN.ON	DEP-DISTAL-3-be.lightning
	'When lightening struck	

<i>hi¹lap</i>	<i>hiho[?]kayi</i>	<i>xeyli</i>	<i>hihe[?]santa</i>	<i>walwala,</i>
<i>hi = l = [?]ap</i>	<i>hi = ho[?] = kayi</i>	<i>xeyli</i>	<i>hi = he[?] = santa</i>	<i>walwala</i>
DEP = the = house	DEP = DISTAL = street	Hayley	DEP = PROXIMAL = Santa	Barbara

the house on Hayley Street in Santa Barbara,

<i>ʔimekəm</i>	<i>čusamišti</i>	<i>hilxəp</i>
<i>ʔi = me-kəm</i>	<i>ču = s-am-išti[?]</i>	<i>hi = l = xəp</i>
CLEFT = EM-after	that = 3-INDENITE-find	DEP = the = rock

they later found the rock

<i>hiho[?]ʔliiyik</i>	<i>hulsenteya.</i>
<i>hi = l = ho[?] = l = liyik</i>	<i>hu = l = senteya.</i>
DEP = the = DISTAL = the = middle	REMOTE = the = meteor

core of **that** meteor.'

2.2 Optionality

Even where languages have similar inventories of tense categories, tense distinctions may not be made in the same situations. Tense marking in English is obligatory: speakers must specify tense every time they utter a sentence. In many languages, however, tense marking is optional: speakers indicate tense only when they feel it to be noteworthy. Nootka, for example, a language of the Wakashan family spoken on the west coast of Vancouver Island in British Columbia, contains past and future tense suffixes, but Rose notes in her grammar of the Kyuquot dialect that speakers use them only rarely.

(15) Kyuquot Nootka: Rose 1981:208

In Kyuquot, tense morphemes follow the mode morphemes and can be ordered as follows: FUTURE TEMPORAL PAST. Tense is commonly unspecified in Kyuquot.

Optional tense markers may appear when a time frame is first established at the beginning of a discussion or narrative, reappearing only with changes of scene or episode. They may appear when the time is considered significant for other reasons. The fact that the markers are optional may contribute to their pragmatic force. If they are used only when deemed important, the importance may be interpreted as part of their meaning. Describing Saanich, for example, a Salish language spoken in British Columbia, Montler points out that the past tense marker has an emphatic connotation.

(16) Saanich optional tense: Montler 1986:210

Since tense marking is not obligatory in Saanish, *ləʔ* (past) is often used for emphasis. ... *ləʔ* is often translated into English by a sentence with the emphatic past tense 'did'.

<i>kʷt</i>	<i>leʔ-sí-s-əŋ</i>	<i>ləʔ</i>	<i>sxʷ</i>
REALIS	repair-INDIRECT-CONTROL.TR-1.OBJECT	PAST	2.SUBJECT
'You did fix it for me.'			

2.3 Subjectivity

In many languages speakers have choices beyond whether or not to specify tense. Choices among tense categories are subjective to varying degrees in different languages. Upper Chinook, a language of the Chinookan family spoken on the Columbia River, has an elaborate tense system. In his description of tense in the Kiksht dialect, Hymes (1975) points out that tense choice is not a simple question of objective chronology.

(17) Kiksht tense choice: Hymes 1975:318

The tenses are not mechanically geared to fixed units of time. The *relative* temporal difference is invariably maintained within regular limits, but the immediate context affects the resulting calibration with days, hours, weeks, months, and years ... Stylistic, or socioexpressive meaning enters as well.

A similar observation is made by Collord in his description of tense in Chukchansi, a Yokuts language spoken near Yosemite in east central California.

(18) Chukchansi Yokuts tense choice: Collord 1968:40

These three tenses [remote past, recent past, and simple past] are, hence, relative to each other. Their use depends on whether the speaker thinks of the event as more remote or more immediate.

In her description of Shasta, Silver cites the subjectivity of speaker choices between the distant and near past tense prefixes.

(19) Shasta tense choice: Silver 1966:127

The near past is used in conversation and anecdote to describe events relatively recent in time from the speaker's point of view; for example, in an anecdote involving himself, SS [speaker Sargent Sambo, who was in his 90's] might use

the near past to refer to an event that happened any time from the day before to fifty or sixty years ago.

The viewpoint of the speaker is similarly evoked by Ultan in his discussion of the use of the remote past in Konkow, a language of the Maidun family of Northern California.

(20) Konkow tense choice: Ultan 1967:96-7.

wóno 'remote past' refers to situations which occurred at some time in the past which is felt to be remote by the speaker. This may have been in an absolute sense such as for an event which transpired before the speaker was born, or in a relative sense associated with the occurrence which is beyond the speaker's range of memory.

wó·lem níki bískymmi·ʔýdaw-wòno-n.
'White men came before I was born'

nihàndes túj-wòno-n.
'I must have fallen asleep.'

3. The Deictic Center: the Present

The span of time covered by particular past and future tense categories must of course depend on the number of tense distinctions grammaticized within a language. As noted in section 2, Washo contains four past tense suffixes that distinguish degrees of remoteness in time: the distant past *-lul*, the remembered past *-gul*, the intermediate past *-ayʔ*, and the recent past *-leg*. In Haida, a language spoken in southeastern Alaska and on the Queen Charlotte Islands in British Columbia, degrees of past time are not differentiated. Thus while the Washo recent past suffix *-leg* covers 'an earlier point on the same day, or during the preceding night' (Jacobsen 1964:631), the Haida past suffix *-yaan* covers all time up to the present (Lawrence 1977, Levine 1977). Washo also contains three future tense suffixes that distinguish degrees of remoteness: the near future *-ašaʔ*, the intermediate future *-tiʔ*, and the distant future *-gab*. Each of these categories must logically cover a shorter span of time than the single general Haida future suffix *-saa*, which includes all time after the present. Despite such differences among past and future tense categories, however, it might be hypothesized that present tense categories will be equivalent across languages, referring simply to the point that separates the past from the future.

Cross-linguistic comparison reveals that even present tenses are not necessarily equivalent, even among languages with only one present tense category. As seen

earlier, tense distinctions are expressed in Central Alaskan Yup'ik by suffixes. Among the distinctions found in verbs are an unmarked present, a past, an immediate future, and a more general future.

(21) Central Alaskan Yup'ik tense in verbs

Elizabeth Ali, George Charles, speakers

<i>nalkutaqa</i>	'I'm finding it'		
<i>nalkutellruaqa</i>	'I found it'	-llru	PAST
<i>nalkutqatarqa</i>	'I'm about to find it'	-qatar-	IMMEDIATE FUTURE
<i>nalkuciiqaqa</i>	'I'll find it'	-ciiq-	FUTURE
<i>ayagtua</i>	'I'm going'		
<i>ayallruua</i>	'I went'		
<i>ayaqatartua</i>	'I'm going to go'		
<i>ayagciqua</i>	'I'll go'		

The tense system seems at first straightforward, not very different from that of English. Asked to translate the Yup'ik verbs in (21) out of context, speakers give English equivalents like those above: 'I'm going', 'I went', 'I'm going to go', 'I'll go'. The use of the tenses differs in interesting ways from that of their English counterparts, however. One of these ways is the period of time covered by the unmarked tense translated as a present.

Mr. Charles, a Yup'ik speaker from Bethel, Alaska, described the situation as follows. If he and a friend were out looking for a lost knife, and he suddenly spied it, he could use the present tense verb as he was bending over to pick it up: *nalkutaqa* 'I'm finding it'. If he and his friend were some distance apart, so that after picking up the knife he had to make his way over to where the friend was searching, he could still use this present tense verb several minutes later to announce his good luck. If the two men were far from home and then spent most of the day returning, he could use the present tense verb to announce his success to his wife that evening. If his mother had been asleep when he returned, he could even use the present tense verb to tell her the news the following morning. Mrs. Ali, another speaker from Bethel, agreed, commenting, "To her, it's still lost until you tell her". Immediately after the announcement, the mother could turn to her own husband and use a past tense verb:

(22) Yup'ik past: Elizabeth Ali, speaker

*nalkutellrullinia**nalkute-llru-llini-a*

find-PAST-apparently-TRANSITIVE.INDICATIVE.3s/3s

'He apparently found it.'

The Yup'ik unmarked present tense thus seems to cover a larger span of time than the English unmarked present tense, including not only the moment of speech, but as long a period as the preceding day and night.

But the difference is considerably more interesting. Scurrying around the kitchen preparing dinner, I might realize that I have mislaid my knife. Discovering it a few moments later, I can use the present tense verb *nalkutaqa*, just as I catch sight of it. Now if my husband had been on his way outside when I began searching for the knife, but he returned 15 minutes later to find me in another room, having completed the dinner preparations, I would have to use the past tense to announce my discovery: *nalkutellruaqa* 'I found it'. This time the Yup'ik unmarked present tense seems to cover a span no longer than 15 minutes.

The present tense can also cover a time after the moment of speech. The present tense verb *nalkutaa* 'she's finding it' is also appropriate just as someone is on the verge of discovery, before the discovery itself.

Similar patterns emerge with other verbs. Mrs. Ali explains that the present tense verb *ayagtuq* 'he or she is leaving' could be used as a guest is at the door saying goodbye. It could also be used for what would seem to be an immediate past, as when you come into a room looking for our guest: 'she just left'. After a few minutes, however, the past tense *ayag-llru-uq* 'she left' must be used. Yet under other circumstances, the present is perfectly appropriate after a longer duration. It could be used when a mother has seen her child leaving for boarding school, even after the bus or sled is well out of sight. As with the verb 'find', the present is appropriate for what appears to be the immediate future as well. Mrs. Ali recalled that as she and her sisters were sitting in the steam bath recently, she used the present tense verb *ayagtua* 'I'm leaving' to announce that she was going to go back down to the house to cook. The future need not in fact even be immediate. As Mrs. Ali was packing her suitcase the night before leaving home after a month-long visit, her mother used the same present tense verb: *ayagtuq* 'Well, she's leaving'.

The Yup'ik present tense category clearly includes more than the moment of speech. Yet it does not correspond to a precise span of time. It may include a day or more before the moment of speech (finding the knife on the tundra), but may be inappropriate for an event 15 minutes before the moment of speech (finding the knife in the kitchen). It may extend several minutes after the moment of speech (leaving the steam bath), or even a day (leaving home). Rather than measuring objective time, the present tense form encompasses the full situation within the immediate consciousness of the speaker, in the sense described by Chafe (1994; this volume): it covers what is categorized as immediate rather than displaced

experience. The host describing the just departed guest is categorizing the departure as part of the current situation, just like the mother left standing at the bus stop after the bus has left or watching her daughter pack the night before her departure. What is included within the category of immediate experience can vary with the situation and the desire of the speaker. Yup'ik speakers have choices in their tense categorization just as English speakers have choices between the English past *she left* and present perfect *she's left*, or between the present progressive *she's leaving* and immediate future *she's going to leave*.

The grammaticization of a present tense as a category of immediate experience is not unique to Yup'ik. Silver describes the present tense of Shasta in similar terms.

(23) Shasta (Shastan family, Northern California): Silver 1966:125

The present tense describes an action or state of being at the time of speech. It is also used when talking about immediately past actions or states if the context for them is still in force at the time of speech.

The alert reader may have noticed that the form of the Yup'ik present tense is different from those of the other tenses. It is not expressed by a suffix of its own, but rather by the absence of any other tense marker. The lack of a special marker for the present raises the question of whether it is a coherent category at all, or whether instead the potentially large span of time it covers is simply the residue of time not covered by other tense categories. In Shasta, tense, person, and number are represented together by a single prefix, often just one consonant, so it can be difficult to isolate the component signalling tense; a comparison of the verbs in (12) does suggest that Shasta contains an overb present tense prefix. There are in addition a number of other North American languages with overt present tense markers that encompass the full span of time portrayed as immediately present within the mind of the speaker. Such a form is described by Collord for Chukchansi Yokuts.

(24) Chukchansi present tense suffix: Collord 1968:47

The present tense marker, *-Ba?a-*, may indicate action taking place at present, or it may mark an event as being presently evident or important to the speaker.

<i>xat^h-Ba?a-e[?]n na·M[?]</i>	>	<i>xat^ha[?]an[?] na[?]</i>	'I'm eating now'
<i>yukul-Ba?a-hil na·M[?]</i>	>	<i>yokol[?]ahil na[?]</i>	'I buried it a while ago'
<i>hat^him-Ba?a-xo-ya-e[?]n na·M-[?]an</i>	>	<i>hat^ham[?]axoyon[?] na[?]an</i>	'We were just now singing'

4. Relative Tense

Tense categories in Yup'ik and a number of other North American languages operate differently from those in English in still another way, one that is quite fundamental to the system. The system will be illustrated here with a historical account from Barbareño Chumash, 'The First Revolt'. The tale was first told to John Peabody Harrington around 1914 by Luisa Ygnacio (1835–1922), who had probably heard it from her parents (John Johnson 1995 personal communication). It was dictated again in Barbareño to Harrington during the 1950's by Mrs. Ygnacio's granddaughter, Mary Yee, the last speaker of the language. It concerns the 1824 uprising by the Chumash at the Santa Inez Mission against the Spanish missionaries who had come to convert them.

What is immediately striking about the account is that though it is straightforwardly historical, many long sections show no tense marking at all: the past tense suffix *-waš* is completely absent. It might be hypothesized that tense marking in this language is simply optional, used only to establish a time frame at the outset or to accentuate important moments. Yet many passages exhibit systematic specification of past tense in sentence after sentence, such as the introduction in lines 1–10 and description of Indians missing Mass in lines 21–32. The tense marking is confined neither to sentences where time would be unclear nor to events where it is particularly significant.

The use of tense markers is, however, quite systematic. The markers have a 'relative' rather than 'absolute' basis. In absolute systems, the time of events is always situated with respect to the moment of speech, as in English. In relative systems like that of Barbareño, events may be situated with respect either to the time of speech or to narrative time. The Barbareño past tense suffix *-waš* thus indicates that an event occurred either prior to the time of speech or prior to the time of the story line. Lines 1–10 of 'The First Revolt' are presented from the vantage point of the moment of speech, when Mrs. Yee was dictating the account. 'Luisa was the one who really **knew** (past) how to tell the old time stories. This one **happened** (past) here around the Old Mission.' Once we enter the timeline of the narrative, however, we progress along it without tense marking, as in lines 33–44: 'He immediately got inside his coach and went out to head for Ventura. And the Indians began to block the trail. And they told the padre to turn back. And the Indians aimed their arrows at the coach. And the coach came to a stop.'

While we are moving along within narrative time, the use of the past tense suffix indicates a time earlier than that of the narrative moment, a time that would be signaled by a past perfect in English: 'The reason the padre **had become frightened** (past) **had been** (past) this. There **had not even been one** (past) Indian who **had come** (past) to Mass' (lines 21–26). When we return to the narrative time

(25) The First Revolt

Dictated by Mary Yee, speaker, to J.P. Harrington

- 1 'Luisa was the one who really knew (PAST) how to tell the old time stories.
- 2 This one happened (PAST) here around the Old Mission.
- 3 The Indians had not yet risen (PAST) up in rebellion.
- 4 There was one (PAST) in particular
- 5 who made (PAST) all of them do it.
- 6 Maybe he did this (PAST)
- 7 so that the Indians would not go to Mass (FUTURE)
- 8 and he didn't know (PAST)
- 9 what would happen (FUTURE) to him.
- 10 This is how it happened (PAST).
- 11 An Indian page was listening to the fathers talking.
- 12 They said, "Tomorrow is Sunday.
- 13 When everyone is inside, seated for Mass (FUTURE),
- 14 then we will quietly lock them (FUTURE) in."
- 15 And then the Spanish would massacre (FUTURE) the Indians.
- 16 Likewise when flies are around them
- 17 were the Indians supposed (PAST) to be afraid?
- 18 No! Rather very angry.
- 19 You would think they would be afraid (FUTURE)
- 20 but no, they wanted to fight instead.
- 21 There had not been a single (PAST) Indian
- 1 luwisa kalčamin-waš? hištimoloqin hihe?itimoloqinaš.
- 2 he'lamnečpi-waš i'akim hi'iti'alamisiyon.
- 3 'ihowo 'alamekuta-waš hiho?lin'iyu?.
- 4 me'alpaka-waš
- 5 hilkašeqwel-waš hiliya hihe?.
- 6 kiya'ku kanunes-waš hihe?
- 7 čukanu 'iyē-sa? -misal hiho?lin'inyu?.
- 8 ke xa'x 'i'alečamin-waš
- 9 hihe?l-sa?-nečpi.
- 10 'akim hihe? hi'alneč-waš-?.
- 11 hilpaxi hilinyu 'isit'itaq hisiytipawpawi hiho'lpalpai?.
- 12 'unue šiip, "wašnaxyet 'ilumiku.
- 13 memali? wa mo'liya maš hišamleken hišam-sa?-misa,
- 14 kakiy-sa?-kiqipuswun himam.
- 15 kim kasiy-sa?-ax'uqenwun hiho?lin'iyu? hiho?is'ispanyol.
- 16 ka'neč hišasamaq'aaywun hišaxulpes
- 17 may iyantimin-waš ho?lin'inyu?
- 18 'ise? kasiyuuwil himonono?.
- 19 palip hisiy-sa?-itimim
- 20 'ise, kasiyillito.xs.
- 21 setanine paka-waš hilinyu

- 22 who had gone to Mass (PAST) that Sunday.
 23 The reason the padre had become frightened (PAST)
 24 had been (PAST) this.
 25 There had not even been one (PAST) Indian
 26 who had come (PAST) to Mass.
- 27 And so the padre immediately suspected something wrong.
 28 Surely he knew (PAST) some good Indians.
 29 But he didn't know (PAST)
 30 what was to be (FUTURE),
 31 know (PAST)
 32 that they wanted to kill (FUTURE) him.
- 33 He immediately got inside his coach
 34 and went out
 35 to head (FUTURE) for Ventura.
 36 And the Indians began to block the trail.
 37 And they told the padre to turn back.
 38 And the Indians aimed their arrows at the coach.
 39 And the coach came to a stop.
 40 The leader of the Indians, he told them:
 41 "You all let the padre be,
 42 for he is also a leader like me."
 43 And soon the Indians lowered their arrows.
 44 And so then the padre went on.
- 45 The padre knew (PAST) the Indian leader.
- 22 hilmissa²-waš hi²akimpi ho²lumiku.
 23 kanu²axi²iirimin-waš hiho²!pali,
 24 ²i²akay-waš hihe²,
 25 setani²me paka-waš hi²linyu
 26 hi²laktimisa-waš.
- 27 hikaho²!pali ²i²meka š²d²koyšpi hi²kiki hi²xinči.
 28 pa ²alkutixwalyikwun-waš hiš²o hihe²!in²inyu?
 29 čuse-sa²-čamin-waš
 30 hi²kiki hi²-sa²-wil
 31 ²alčamin-waš hi²kikš
 32 kasutimin hi²lam-sa²-silisiniwe.
- 33 hi²meka sti²yikpi hi²skoči
 34 hika skitwon
 35 he²micqanaan ²al-sa²-eqenini.
 36 kesiyutalatapji² ho²!čalayaš hi²lin²inyu?
 37 hikasiy²ipus hiho²!pali ču skuwayapi.
 38 keholin²inyu² ²isiyalxulusumu hi²siyyahya² hiho²!koči.
 39 hi²mekasutinowon hiho²!koči.
 40 ho²si²yiswo² hi²holin²inyu² ²is²ipuswun:
 41 "iyuš²ol he²!pali.
 42 kayke ²alwo² wayi ke²neč hi²no²."
 43 hi²meka si²ysumšup hiho²siyyahya² hiho²!inyu².
 44 hi²meka kantime hi²snan hiho²!pali.
- 45 ho²!pali ²igalqutixwalyik-waš hiho²!wo² hi²linyu.

- 46 And because of that, the Indian leader allowed him to leave.
 47 And so the Indians got really angry.
 48 And so on another day they killed the page.
 49 They cut off his arms and feet.
 50 And they cut out his tongue.
 51 And they cut out his eyes.
- 52 The Indians were (PAST) very cruel.
- 53 When the doctor cuts you,
 54 he uses a sharp knife.
 55 It is very bad.
- 56 But the Indians' knives are not sharp.
 57 Thus it hurts all the more
 58 when they cut you.
- 59 First they heard him say,
 60 "I was just going to fool (FUTURE) the people."
 61 It seems like—
 62 It seems like I can hear the Indians hollering.
- 63 Maybe the poor fellow had misunderstood (PAST) the good
 padres.
- 64 They laid him at the door of the Mission
 65 so that the people would see (FUTURE)
 66 what they had done (PAST) to him,
 67 they would know (FUTURE)
- 46 čuka ho^olwot hulinu yime^oaleqwelus-was hisč^obo čukamesus^ho^o.
 47 hikano^ono^o siywil hiho^olin^oinyu^o.
 48 hikana hilcoyni hilališaw ^oikasiysiniwe hiho^olpaxi.
 49 siyqeseqenwun hiho^oswacwaca^o keho^os^oelə.
 50 kesiyqeseqen hiho^os^oelew
 51 kekasiytioplox hiho^ostaqtaq.
 52 nono ^oiyaxutiwileč-was hihe^olin^oinyu^o.
 53 na siw^oiwawanin hillotol
 54 shiken hilčici hiləwə,
 55 me ka spop^hoč,
 56 ya ču ho^osiyaw^oəwə^o hihe^olin^oinyu^o ^oisiyečici
 57 čuka^oimi spop^hoč
 58 himali samiwanin.
 59 kasutikim hisiyewelus his^oip:
 60 himenakals-sa^oyityituswun-was hihe^olkuhku^o.
 61 ^oaqni mekal
 62 ^oaqni mealit^oitaquswun hisiyaxcawawan hiho^olin^oinyu^o.
 63 ke^okiryaku hili^oni^o ^oime^oaletisi^oitaxsinuswun-was
 64 ho^osamofoyin husmitipin hiho^oalamisiyon,
 65 čukanu liya he^olkuhku^o ^oisam-sa^o-kuti
 66 hihe^olamnesus-was.
 67 kanu^oam-sa^o-čamin

- 68 that a person had lied (PAST) badly.
 69 He was trembling
 70 from what he had suffered (PAST).
- 71 I don't think
 72 he lasted long (PAST) at all
 73 since he no longer had (PAST) his arms and feet and tongue and eyes.
- 74 Probably all his blood drained out quickly
 75 and he died right away.
 76 The people always help their leader.
 77 And the leader always had (PAST) to be mean (FUTURE).
- 68 hihe¹ kuhku² hi³axinči hisamxəwə.
 69 no⁴no⁵ sixwatatan
 70 mehusalaxsum-waş.
 71 mekip
 72 hisenono⁶-waš-? his⁷anaməkə hihe⁸moke
 73 sewil-waş hiswačwəča⁹x kes¹⁰ə¹¹əl kes¹²əlew, kestaqtaq.
 74 pame š¹³utowič hisu¹⁴aqš hiliya hus¹⁵axulis
 75 himekasaqšan.
 76 he¹⁶kuhku¹⁷ ?imeči ho¹⁸siyiswo¹⁹ kaiyoyonus.
 77 kemeči he²⁰lwot²¹ ?i²²alumiyi-waş his²³sa²⁴-aqimowon.

in line 27, there is no past tense suffix: 'And so the padre immediately suspected something wrong.'

The Barbareño future tense prefix *sa*²- also operates on a relative basis. It may indicate a time subsequent to the time of speech, as in lines 13-14: 'When everyone is inside, **seated for Mass** (future), then we **will quietly lock them in** (future).' Within a narrative, it indicates a time subsequent to the narrative moment, as in lines 64-68: 'Then they laid him at the door of the Mission so that the people **would see** (future) what they had done (past) to him, they **would know** (future) that a person had lied (past) badly.'

The relative basis of the tense system provides a useful device for structuring discourse. The sudden appearance of a past tense suffix can signal that the speaker has come out of the narrative sequence to comment from her modern point of view. The sentence 'And so the padre immediately suspected something wrong' in line 27 contains no past tense suffix because it is simultaneous with the narrative moment. The passage immediately following this sentence does contain past tense markers, however: 'Surely he **knew** (past) some good Indians. But he **didn't know** (past) what was to be, **know** (past) that they wanted to kill him'. The speaker is explaining the situation from her modern perspective, in terms of which it is past. Similarly, the mutilation of the page is described in detail in lines 46-51 without tense marking, since there is no deviation from the narrative time line: 'And because of that, the Indian leader allowed him to leave. And so the Indians got really angry. And so on another day they killed the page. They cut off his arms and feet. And they cut out his tongue. And they cut out his eyes.' The speaker then concludes that 'The Indians were (past) very cruel' (52), this time with the past tense suffix. The evaluation is not part of the narrative, but rather a conclusion from her modern viewpoint.

Relative tense of this type appears in a number of North American Pacific Rim languages. In addition to Yup'ik and Barbareño Chumash, it can be seen in Tlingit, a language of Alaska and British Columbia related to the Athapaskan languages (Leer 1991:341-349), in Nootka (Rose 1981:211-212), and in Karuk, a language of the northern California coast (Bright 1957:67). It is in some ways reminiscent of the historical present of English, in which speakers may shift to present tense at particularly dramatic moments of a narrative to increase their immediacy. It differs, however, in that it is not a device reserved for heightening drama; relative tense markers systematically take as their point of reference the narrative time whenever there is a narrative line. The system also shows a certain resemblance to another type of relative tense system found in some languages of South America and Australia (Austin this volume), but it differs from those in being pragmatically rather than syntactically based. In those systems, tense in subordinate clauses takes as its point of reference the tense of the main clause. In the systems described here,

the point of reference is established by the narrative pattern.

5. Where Do the Differences Come From?

Sections 1–4 have shown that languages can differ substantially in their grammatical categorization of time. It might be protested that such differences are of little interest, since they represent largely unconscious, routinized distinctions. Few would maintain that a speaker's capacity to conceptualize must be limited to the categories distinguished within the grammar of his or her language. The differences are not without interest, however.

First, we know that the grammatical categories that emerge in language are not random. They represent distinctions speakers have chosen to specify particularly often over generations of speaking. With repeated use, their expression becomes automated or routinized. Over time full words become eroded to particles and, ultimately, to prefixes or suffixes. Sometimes the lexical antecedents of affixes are still observable within a language. The source of the English suffixes *-less* and *-ful* in words like *careless* and *careful* are still present in the language as full independent words: *less* and *full*. The source of the English past tense suffix *-ed* has long since disappeared from the language, but the evolution of the future marker *-ll* (*I'll go*) is still observable in the word *will*, which originally expressed volition. The ongoing evolution of tense can be seen in the development of some tense systems in North America as well, such as Mutsun, a language of the Costanoan branch of the Utian family, spoken just south of San Francisco. The remote and recent past tense markers are apparently of some age in the language, since they are represented by forms that have eroded to suffixes.

(26) Mutsun past tenses: Okrand 1977:264-265

-s REMOTE PAST

refers to events of yesterday (overlapping with recent past) and earlier (1977:265).

-n RECENT PAST

is the most frequently occurring of the two past tense suffixes...found in sentences with *?itsʔa* 'just now' as well as with *?uyuka* 'yesterday' (1977:264).

The future tenses are more recent additions to the system; their origins as full words in the language are still evident.

(27) Mutsun immediate future: Okrand 1977:292

<i>ye·lakammes</i>	<i>po·to</i>	ye·la 'Wait!'
<i>ye·la-kammes</i>	<i>po·to</i>	
wait-I/you	pull.out.hair	
'I am going to pull your hair out.'		

(28) Mutsun remote future: Okrand 1977:290

<i>yete-ka</i>	<i>hiwan</i>	yete- 'later'
<i>yete--ka</i>	<i>hiwan</i>	
later-I	arrive	
'I will arrive.'		

Tense systems may be built up in a variety of other ways as well. One of these involves the kinds of inferences described in section 2.1. As noted there, perfective aspect marking can imply past tense, since it is usually incompatible with present. Over time, perfective aspect markers may be reinterpreted by speakers as past tense markers themselves, as amply documented by Bybee, Perkins, & Pagliuca 1993 among others. Silverstein 1974 reconstructs such a path for the evolution of the tense in languages of the Chinookan family.

The development of past tense marking from another kind of inference is hypothesized for Haida by Levine (1977). Haida contains an evidential suffix *-ga* that indicates that a speaker is not basing his or her statement on personal experience.

(29) Haida *-ga* as an evidential: Levine 1977:116

-ga ... indicates that the speaker has no firsthand knowledge of the information contained in the clause to which the predicate it inflects belongs. It appears quite commonly in the narration of traditional textual material ... This suffix can only be applied to past situations.

The suffix appears to have been shifting toward a marker of past tense.

(30) Haida *-ga* as a past tense marker: Levine 1977:116–119

-ga is used to indicate the past tense in contexts where there is no overt tense marking ... In certain dependent predicate structures, the second-hand information suffix is used to mark past occurrence even in non-interrogative forms, and even when the speaker is a participant in the action indicated by the stem ... The use of *-ga* [in these contexts] suggests that an extension of its

earlier semantic range has recently been under way. This extension seems logical enough, since the second-hand information suffix is almost completely restricted to past contexts ... Such semantic extensions are not uncommon among evidential systems generally.

Inference has also played a role in the development of future tense markers in a number of languages. Markers of volition or intention may imply future action, as was seen earlier in Shasta. Such markers may then be reinterpreted by speakers as signalling future tense directly, just as in English.

Another way in which grammatical markers may evolve is through metaphorical extension. Speakers may use a marker from one domain to express distinctions in another. Particularly common is the extension of markers originally qualifying location and direction to the domain of time. Such an extension can be seen in Upper Chinook. The language developed an elaborate set of tense prefixes partly due to contact with its Salish neighbors (Silverstein 1974). Sapir described the basic tense prefixes of the Wishram dialect as below.

(31) Upper Chinook tense prefixes (Sapir 1907:538-9)

<i>ga(l)-</i>	MYTHIC PAST refers to time long past, say more than one year ago, and which is used regularly in the recital of myths
<i>ni(g)-</i>	REMOTE PAST used to refer somewhat indefinitely to time past and which is used in speaking of events that happened say less than a year ago, yet more than a couple of days
<i>na(l)-</i>	RECENT PAST refers to recent time exclusive of to-day, more specifically to yesterday
<i>i(g)-</i>	IMMEDIATE PAST refers to an action already performed today
—	PRESENT refers to an action now going on but, as it seems with the implication of its soon being completed
<i>a(l)-</i>	FUTURE

The language also contains two directional prefixes, a translocative *u-* 'thither' for motion away from the speaker or some other point of reference, and a cislocative *t-* 'hither' for motion toward.

(32) Upper Chinook directional prefixes: Hymes 1975

<i>u-</i>	TRANSLOCATIVE:	motion away
<i>t-</i>	CISLOCATIVE:	motion toward

ga-n-u-ya

MYTHIC.PAST-1.SG-TRANSLOCATIVE-go
'I went'

ga-n-t-i

MYTHIC.PAST-1.SG-CISLOCATIVE-go
'I came'

As described in detail by Hymes, the already elaborate tense prefix system was further enriched by the introduction of the cross-cutting translocative/cislocative distinction. The translocative prefix ('away') indicates an earlier time within the category, while the cislocative ('toward') indicates a later time within the category.

(33) Upper Chinook prefix combinations

<i>gal ... u-</i>	mythic age, or many years
<i>gal ... t-</i>	within modern human experience, or few years
<i>nig ... u-</i>	last season
<i>nig ... t-</i>	last week
<i>ig ... u-</i>	earlier today
<i>ig ... t-</i>	just now
<i>al ... u-</i>	immediate future
<i>al ... t-</i>	remote future

(34) Upper Chinook examples: Silverstein 1974

i-n-i-u-[ada-ba

IMMEDIATE.PAST-1.SG.ERG-N.ABS-TRANSLOCATIVE-throw-out
'I threw it out of the house'

i-n-i-t-[ada-ba

IMMEDIATE.PAST-1.SG.ERG-N.ABS-CISLOCATIVE-throw-out
 'I just now threw it out of the house'

The histories of grammatical categories can affect their meanings long after they have become established in the language. Because tense markers can evolve from a variety of sources, they can differ in their implications. As noted earlier, for example, future tense markers often develop from expressions of volition, intention, motion, or prediction. Shades of these meanings may remain with these markers even after they have been fully incorporated into the tense system. Describing the future marker in Saanich, for example, Montler notes the connotation of control associated with it.

(35) Saanich future tense with control: Montler 1986:213

səʔ 'future' marks the proposition as being strongly expected to have factuality at a time subsequent to the present ... [It] seems to add the implication that the speaker has a certain amount of control over or is quite sure of the future truth of the proposition. An aspect of the meaning of *səʔ* is that it only occurs with predicates that do not involve an emotional state.

Rose describes a similar connotation for a future tense suffix in Nootka.

(36) Kyuquot Nootka future tense with control: Rose 1981:209

There is no simple future tense in Kyuquot; that is, an inflectional affix indicating that an event will occur subsequent to the utterance-defined present. Instead, there is a morpheme *-ʔa:qλ* FUTURE which unites the sense of future tense with that of intention, at least in contexts where there is the possibility of control or intention by a participant.

Among the past tenses of Washo is a suffix *-áʔy* that appears with nouns. Jacobsen notes (1964:484) that it is descended from a verb *áʔy* 'be away, out of the way, discarding'. The precise meaning it contributes to nouns is that of being 'discarded, worn out', or superseded.

(37) Washo discarded past tense: Jacobsen 1964:484

<i>mókgoáyʔ</i>	'old shoe'	(<i>mókgo</i> 'shoe')
<i>démluyáyʔ</i>	'garbage'	(<i>démlu</i> 'food')
<i>bumé·liʔáyʔ</i>	'ex-husband'	(<i>bum·li</i> 'husband')

The source of the Haida past tense in an evidential distinction continues to color the specification of past time in the language, as noted by Leer in his

grammatical description of Haida in the dictionary compiled by Lawrence.

(37) Haida past tense with evidentiality: Leer in Lawrence 1977:79

The past form corresponds with the English simple past, with the reservation that it refers to an action which the speaker has present knowledge of or has experienced himself: *hl kínggan* 'I saw it', *dú 'láagan* 'I was fine', *hal tl'úgan* 'she sewed it'. The inferential form is also a past form, but refers to something which the speaker has not experienced for himself but has found out by inference or by being informed of it: *hal kyáangaan* '(Oh, so) she saw it', or '(I'm informed that) she saw it'; *dáng 'láagan* 'so you were fine (as I gather)'.

The varieties of tense systems that can be found across languages have emerged from their individual histories. They are shaped in large part by the very process of speaking, by the routinization of frequently expressed distinctions, by repeated inferences on the part of listeners, and by the extension of established distinctions to new domains. The histories are not without effect for modern speakers. They may continue to contribute to the meanings of the categories long after the markers have become integrated into the grammar.

6. Conclusion

The diversity of tense systems that we find in languages resoundingly confirms the fact that tense is not a simple mirror of objective chronology. Both the evolution of tense categories and their ongoing use by speakers show the mark of the human mind.

As we have seen, the tense systems that exist have evolved out of distinctions that speakers have chosen to express over millenia. Some of their features can be attributed to universal characteristics of human cognition. We know, for example, that in languages with multiple tense categories, the number of past tenses is generally greater than or equal to the number of future categories. Mutsun contains two past tense suffixes but no fully grammaticized futures. Washo contains at least four past tense suffixes but only three futures. Upper Chinook contains four past prefixes but only one future prefix. The asymmetry is just as we would expect; speakers have more detailed awareness of the past, which they may have experienced, than the future, which can only be imagined.

The periods of time covered by individual tense categories also bear the mark of the human mind. Where there are multiple past tenses in a language, or multiple futures, the categories are never of equivalent duration, such as two years each. More remote tense categories cover a longer span of time than more immediate categories. The mythic past of Upper Chinook may cover millenia, the remote past

a year, the recent past a day or two, and the immediate past a matter of hours. The spans correspond to different qualities of memory. Events of several millenia ago may be conceived of in much the same way as those of several centuries ago, but in significantly different ways from those of the past year, and in different ways again from those of the past hour.

Other features of individual tense systems are the product of the variety of human experience. As we have seen, languages vary substantially in the number of tense categories that have been grammaticized. Tense distinctions are obligatory in some languages but optional in others. Distinctions become obligatory when communities of speakers have expressed them so often that the lack of expression becomes meaningful itself.

In many languages the daily manipulation of the tense categories offered by the grammar also bears the imprint of the human mind. Distinctions between remote and recent past may be as much a matter of immediacy within the mind of the speaker as of chronological time, as in Upper Chinook, Chukchansi Yokuts, Shasta, and Konkow. Even the categorization of present time in many languages covers not just the moment of speech but the full span of time construed by the speaker as part of the immediately experienced situation.

The tense systems of languages are shaped both diachronically over generations and synchronically, moment by moment, by their speakers, but they are not without impact on the speakers themselves. Though grammar may not restrict what can be said, it may affect what tends to be said. Speakers express their ideas most often in terms of the grammatical categories offered by their languages. If a distinction is obligatory, speakers will specify it every time they speak, and hearers will hear it nearly as often. It will be a part of the message more often than if it were optional or not part of the language at all.

The temporal categories so deeply embedded in language are far from a direct reflection of some objective quantification of time, but it is for that very reason that they are all the more interesting.

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