

TWO OR THREE (OR FOUR) POINTS ABOUT ADVERBS
AND ASPECT IN CENTRAL NUMIC (UTO-AZTECAN)

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The Numic group of the Uto-Aztecan language family has traditionally been divided into three more or less coordinate branches—Western Numic (Mono, Northern Paiute), Central Numic (Panamint, Shoshoni, Comanche), and Southern Numic (Kawaiisu, Southern Paiute). The time-depth for the break-up of Numic is approximately two thousand years (Lamb 1958). The three languages of the Central Numic branch present problems when trying to construct a tree, but can roughly be divided into Panamint and Shoshoni-Comanche (Miller 1974). The time-depth for this separation is about a thousand years (Lamb 1958), but there was a continuing influence between Panamint and the southwestern dialects of Shoshoni even after the split (Miller 1974). The Shoshoni moved out of the vicinity of Death Valley and occupied a stretch of territory comprising central and eastern Nevada, western and northern Utah, southeastern Idaho, and western Wyoming. The Shoshoni were a nomadic hunting and gathering group, so bands remained in contact with each other, but by the beginning of the 18th century, a dialect chain stretching from Death Valley to central Wyoming had developed.

About the year 1700, the easternmost of these bands obtained the horse and moved south into the Llano Estacado of western Texas and eastern New Mexico in order to be closer to the supply of Spanish horses in Mexico. From that time, the Comanche had no further interest in maintaining contact with the Wyoming Shoshoni bands as they were busy becoming the major supplier of Mexican horses to the Plains tribes. This was the point at which the dialect chain was broken and places the separation between Shoshoni and Comanche at about three centuries ago (Comanche may have comprised a mutually intelligible, though distinct, dialect within Shoshoni before that time, but it is impossible to tell for certain). While the time-depth is still shallow enough to suspect only dialect differentiation, the lexical, morphological, and phonological changes have been of sufficient magnitude to justify the division between them as a language division rather than a dialect division (Miller 1974:10).

Comparative work on Central Numic has, with only a couple of exceptions (Miller 1973 and 1974), been carried out within the framework of Numic as a whole (Davis 1966, Iannucci 1973) or of Uto-Aztecan (Voegelin, Voegelin, and Hale 1962, Miller 1967, Crapo 1970, Langacker 1977, to name a few). In relation to Central Numic, this work has mainly dealt with phonological reconstruction, because the dearth of published material on Panamint has precluded exhaustive treatment of Central Numic morphology and syntax. The present work is a preliminary step at dealing with Proto-Central Numic verb morphology. It is a brief sketch of several salient differences between Comanche and Shoshoni in the use of their directional suffixes. Shoshoni data is from the Gosiute and Ruby Valley dialects

represented in Miller (1972) and (1975).¹ Comanche data is from Canonge (1958).²

Comanche and Shoshoni both have a set of suffixes which will be called 'directionals'. These suffixes on the verb indicate motion toward or away from the speaker or scene. Crapo (1970) discusses these suffixes in Uto-Aztecan and their origins as secondary verbs directly following the main verb. The directionals in Central Numic have also undergone further semantic shifts which made some of them into aspect suffixes and one of them into a syntactic suffix. Miller (1975) describes some of these shifts for Shoshoni, but not all of them. This study is a fuller description of the directionals and their developments in Shoshoni and Comanche. It is based on analysis of the Comanche texts in Canonge (1958), the Shoshoni texts in Miller (1972) and (1975:105-131), and on Miller's sketch of the Gosiute dialect (1975).

1. The Directional Suffixes: -kin, -kwan, and -kwai

The directional suffixes in Comanche and Shoshoni which will be under discussion are -kin 'motion toward', -kwan³ 'motion away', and -kwai 'motion around'. These are suffixed to the verb complex following the verb stem and preceding the aspect suffixes. Sentences (1) through (6) illustrate these suffixes in Shoshoni and Comanche. (The phonological variants found in Comanche will be discussed below.)⁴

- SH (1) nukkiki 'approached' (1972:87:10)
(nukkì 'run,SG'; -kin 'come')⁵
- (2) nukkikwana 'left' (1972:60:4)
(nukkì 'run,SG'; -kwan 'go')
- (3) nukkikwaina 'running around' (1972:65:8)
(nukkì 'run,SG'; -kwai 'around')
- CM (4) yìtsìhkinU 'came flying' (1958:28:19)
(yìtsì 'fly,SG'; -kkin 'come while')
- (5) yìtsìhkwa 'flew off' (1958:31:5)
(yìtsì 'fly,SG'; -kkwan 'go while')
- (6) nurahkwainA 'are running around' (1958:91:3)
(nutaá 'run,PL'; -kkwai 'around')

In Comanche, the suffixes -kin, -kwan, and -kwai become the alternating suffixes -h/kkin, -h/kkwan, and -h/kkwai when the motion is simultaneous or subsequent to the activity of the main verb. When the motion is prior to the activity of the main verb, the directional suffixes are no longer alternating.⁶

Simultaneous Motion

- CM (7) to'Iki 'comes in sight' (1958:10:23)
(to'ì 'emerge,SG'; -hkin 'come while')
- (8) yàtsàhkina 'came flying' (1958:27:6)
(yàtsá 'fly,SG'; -kkin 'come while')
- (9) to'Ikwa 'went up' (1958:57:12)
(to'ì 'emerge, SG'; -hkwan 'go while')
- (10) yàtsàhkwa 'flew off' (1958:31:5)
(yàtsá 'fly,SG'; -kkwan 'go while')
- (11) kiahkwa 'went out' (1958:100:18)
(kiá 'emerge,PL'; -kkwan 'go while')
- (12) nurahkwainA 'are running around' (1958:91:3)
(nutaá 'run,PL'; -kkwai 'around')

Prior Motion

- (13) tìhkaki' 'came to eat' (1958:15:8)
(tìkkà 'eat'; -kin 'come to')
- (14) habikI 'come lie down' (1958:48:20)
(hapí 'lie,SG'; -kin 'come to')
- (15) punikwatu'I 'will go to look' (1958:104:11)
(puní 'see'; -kwan 'go to')
- (16) tìkikwa 'go to put' (1958:83:27)
(tìkí 'put'; -kwan 'go to')
- (17) kiakwika 'as they went to go out' (1958:60:9)
(kiá 'emerge,PL'; -kwan 'go to')
(a before h regularly becomes ɛ except after glottal stop)

Canonge (1957) gives several pairs which he glosses as 'moved to do' and 'did and moved'. These illustrate that the alternating suffixes are not just used for simultaneous motion, but also for motion after the activity. (18) through (21) illustrate two of these pairs in Comanche. (I have modified his transcription to conform to his usage in Canonge (1958).)

- CM (18) uhtuki 'came to give' (Canonge 1957:64)
(uttù 'give'; -kin 'come to')
- (19) utUki 'gave and came on' (Canonge 1957:64)
(uttù 'give'; -hkin 'come while')

- CM (20) ku'okwekwa'i 'went to render' (Canonge 1957:63)
(ku- INSTR; okwè 'flow'; -kwan 'go to')
- (21) ku'okwEkwa'i 'rendered and went on' (Canonge 1957:63)
(ku- INSTR; okwè 'flow'; -hkwan 'go while')

(7) through (21) indicate that Comanche has a two-way split in the time indication of the directional with respect to the action. The non-alternating forms indicate motion before action while the alternating forms indicate motion during or after action. Figure 1 illustrates this on a time-line.

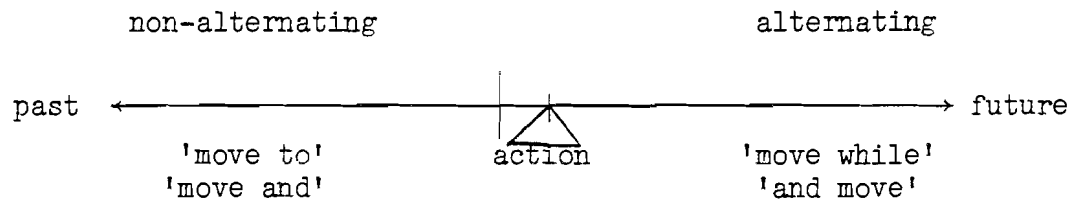


Figure 1. Motion and Action in Comanche

In Shoshoni, the distinction between prior and simultaneous motion seems to be in the process of levelling out. Some verbs continue to mark the difference while others do not.

Distinction Retained

- SH (22) punikwa 'go see' (1972:46:30)
(puni 'see'; -kwan 'go to')
- (23) punikkwa 'going along, he saw' (1972:57:13)
(puni 'see'; -kkwan 'go while')
- (24) wekkihkwa 'look for' (1975:124:302)
(wekkì 'look for'; -hkwan 'go while')
- (25) to'ihkin 'came out towards' (1975:42)
(to'ì 'emerge,SG'; -hkin 'come while')

Distinction Lost

- (26) nookkintìn 'kept carrying, coming this way' (1975:40)
(noó 'carry'; -"- DUR; -kin 'come!')⁷
- (27) nookintìn 'carried, coming this way' (1975:40)
(noó 'carry'; -kin 'come')
- (28) nukkiwana 'left' (1972:60:4)
(nukki 'run,SG'; -kwan 'go')

- SH (29) nutaaki 'came running' (1972:54:7)
(nutaá 'run,PL'; -kin 'come')

In (27) through (29), the alternating directionals would have been -kkin on (27), -hkwan on (28), and -hkin on (29), but the distinction between prior and simultaneous motion has been lost in these forms.

In Comanche, there are traces of the onset of this levelling, but the split between Comanche and Shoshoni preceded the bulk of the process which occurred in Shoshoni. The verbs nukki and nutaá 'run,SG' and 'run,PL', only have -kin for simultaneous motion without alternating.

- CM (30) nukkikitɛ 'is coming running' (1958:56:17)
(nukki 'run,SG'; -kin 'come')

- (31) nuraakIci 'coming running' (1958:7:31)
(nutaá 'run,PL'; -kin 'come')

-kin may be the first of the directional suffixes to be levelled, as the following example seems to indicate, but this is not certain. If the levelling was complete for nutaá with all the directionals, then -kwai would have been the directional in (32) rather than -kkwai.

- CM (32) nurahkwainA 'are running around' (1958:91:3)
(nutaá 'run,PL'; -kkwai 'around')

nukki and nutaá⁸ also only take the non-alternating suffixes in Shoshoni, as is illustrated by (33) and (34).

- SH (33) nukkiki 'approached' (1972:87:10)
(nukki 'run,SG'; -kin 'come')
- (34) nutaaki 'came running' (1972:54:7)
(nutaá 'run,PL'; -kin 'come')

The three suffixes under discussion in Shoshoni and Comanche can be summarized as follows ('...' in the last entry indicates that this alternation can affect any of the initial consonants in the preceding three forms):

<u>Comanche</u>	<u>Shoshoni</u>
<u>-kin</u> 'motion toward'	<u>-kin</u> 'motion toward'
<u>-kwan</u> 'motion away'	<u>-kwan</u> 'motion away'
<u>-kwai</u> 'motion around'	<u>-kwai</u> 'motion around'
<u>-h/kk...</u> 'motion while'	(<u>-h/kk...</u> 'motion while')

Table I.
The Directional Suffixes in Comanche and Shoshoni

The question arises as to whether the distinction between simultaneous and prior motion is being developed or lost in Shoshoni with Comanche exhibiting either less loss or greater development. The key lies in the other Numic languages outside the Central group.

Sapir (1930:139-142) notes the distinction in Southern Paiute between the directionals which are subject to spirantization, gemination, or nasalization, depending on the final feature of the verb stem, and those which are spirantized regardless of the final feature. The former set, like the Comanche alternating forms, marks simultaneous activity and motion, while the latter set marks motion prior to activity. The Southern Paiute forms for simultaneous motion are, as listed by Sapir, -yi-S, -k·i-S, -ŋki-S 'to come while -ing' and -ywa'ai-S, -q·wa'ai-S, -ŋqwa'ai-S 'to go while -ing, to move'. (35) through (40) illustrate these six forms (a raised letter following the verb indicates the final feature):⁹

- SP (35) nɔntsɪχi 'comes flying' (1930:142)
(nɔntsɪ-S 'fly'; -yi-S 'come while')
- (36) pa(i)yɪk·i 'comes back' (1930:142)
(pa(i)yɪ-g 'return'; -k·i-S 'come while')
- (37) paɣ(a)ɪŋki 'comes walking' (1930:142)
(paɣ(a)ɪ-n 'walk'; -ŋki-S 'come while')
- (38) nɔntsɪχw'ai 'goes flying, flies away' (1930:139)
(nɔntsɪ-S 'fly'; -ywa'ai-S 'go while')
- (39) pa(i)yɪq·w'ai 'return-goes, goes back' (1930:139)
(pa(i)yɪ-g 'return'; -q·wa'ai-S 'go while')
- (40) ŋu^hqwiŋqwa'ai 'goes running, runs off' (1930:139)
(ŋu^hqwi-n 'run'; -ŋqwa'ai-S 'go while')

The forms for motion prior to activity are always spirantized. The suffixes are -yi-S 'to come in order to' and -ywa'ai-S 'to go in order to'. (41), (42), and (44) illustrate prior motion and have invariably spirantized directionals. (42) and (43) illustrate the difference in form between prior (42) and simultaneous (43) motion.

- SP (41) qa·χi 'comes to sing' (1930:142)
(qa·- 'sing'; -yi-S 'come to')
- (42) ya·x·jkaai 'has come to get' (1930:142)
(ya·- 'carry'; -yi-S 'come to')
- (43) ya·q·ɪ- 'to come carrying, to bring' (1930:142)
(ya·- 'carry'; -k·i-S 'come while')

SP (44) ya·xw'ai'ŋwə 'go and fetch him' (1930:141)
 (ya·- 'carry'; -ywa'ai-s 'go to')

Historically, therefore, the distinction between simultaneous and prior motion in the directionals is a Numic feature found productively in Comanche, Southern Paiute, and Mono (Crapo 1970:186), with a remnant left in Shoshoni. The Comanche alternating forms for simultaneous motion, however, are not cognate with the Southern Paiute forms for simultaneous motion. Comanche and Shoshoni aspirated and geminated consonants are cognate only with Southern Paiute geminated consonants. The following table illustrates the suffixes and the correspondences.¹⁰

	<u>SP</u> ¹¹	<u>CM</u>	<u>SH</u>
come while	-ki		-kin
	(-)	-h/kkin	-h/kkin
come to	- ^s ki	-kin	-kin
go while	-kwa'ai		-kwan
	(-kkwa'ai)	-h/kkwan	-h/kkwan
go to	- ^s kwa'ai	-kwan	-kwan

Table II.

Regular Directional Suffixes in Southern Paiute and Central Numic

The hole in the chart where one should expect -kki in Southern Paiute ('come while') is not filled, but Sapir (1930:140) notes that -q·wa'ai-s (-kkwa'ai) occurs after all types of stems with the meaning of simultaneous motion away. This is the form which matches Comanche and Shoshoni -h/kkwan. (45) and (46) illustrate -q·wa'ai-s on two different verbs. (46) and (47) illustrate the synonymy between the directional -ywa'ai-s (subject to final features, in this case spirantized) 'go while', and -q·wa'ai-s (always geminated) 'go while'. The two forms are apparently interchangeable in this case.

SP (45) ts·pik·w'aiŋyūpiya 'went right through beyond' (1930:140)
 (tsip·i- 'emerge'; -q·wa'ai-s 'go while')

(46) wa'anjūqwa'aiŋyū 'to call out while going past' (1930:140)
 (wa'anjū-s 'yell'; -q·wa'ai-s 'go while')

(47) wa'anjūχwa'ai 'yells as he goes' (1930:140)
 (wa'anjū-s 'yell'; -ywa'ai-s 'go while')

The Mono forms given by Crapo (1970:186) also distinguish between geminated forms for simultaneous motion and spirantized forms for prior motion. One might argue that gemination for simultaneous motion is a development in these languages, given the partial distribution in both

Southern Paiute and Shoshoni, but this is unlikely because Mono and Comanche are geographically separated by over a thousand miles of Southern Paiute and Shoshoni speakers. The central position of Shoshoni and Southern Paiute points rather to a loss of gemination in these languages to distinguish simultaneous from prior motion in the directional suffixes. Additional evidence for the existence in Proto-Central Numic of an alternating form for the directionals is the momentaneous suffix -h/kkwan in Shoshoni. This is a semantic extension (see section 2) of -kwan and points to a time when -kwan had an alternating form -h/kkwan. Alternating suffixes in Shoshoni and Comanche are all historically derived from geminated suffixes sometime before the stress shift which made the aspirated stop series distinctive in Central Numic. This data points to a Pre-Central Numic geminated form for simultaneous motion and a spirantized form for prior motion, with Shoshoni showing considerable erosion in the system. Table III illustrates the reconstructed Proto-Shoshoni-Comanche (and probably Proto-Central Numic) directional suffixes.

- *-kin 'motion toward to'
- *-kwan 'motion away to'
- *-kwaí 'motion around to'
- *-h/kkin 'motion toward while'
- *-h/kkwan 'motion away while'
- *-h/kkwaí 'motion around while'

Table III.

Proto-Shoshoni-Comanche Directional Suffixes

2. Semantic Extensions: -kkin and -h/kkwan

It is not unusual for directionals to be extended in meaning to include such notions as completion, finality, or duration. Such examples as French je viens d'aller 'I just went' (literally, 'I come to go), Japanese hette-kuru 'decreases' (literally, decrease-come),¹² and English 'went on' (in the sense of 'continued'), 'went and did' (dialectal for an emphatic completive), 'come to be', 'die off', and 'eat away' should suffice to illustrate. In Shoshoni, the meanings of the directionals -kin and -kwan have been extended to include repetition and momentaneous completion respectively.

-kkin 'repetitive'

- SH (48) tákkakkinna 'kept eating' (1975:42)
(tákkà 'eat'; -kkin REPET)
- (49) tsawíninkíkiyu 'kept making him stand' (1975:43)
(tsa"- INSTR; wíná 'stand'; -nká CAUS; -kkin REPET)

-h/kkwan 'momentaneous'

- SH (50) wikkahkwan 'cut' (1975:47)
(wǐ"- INSTR; -ka'à 'break'; -hkwan MOM)
- (51) nawasikkwa 'killed' (1975:53)
(na- REFL; wasǐ 'kill, PL OBJ'; -kkwan MOM)

The use of -kin in a repetitive sense (Miller 1975:42) has not been found for Comanche in Canonge (1958), and is probably a Shoshoni innovation. The suffix appears to have this repetitive meaning generally in the form -kkin (non-alternating). The geminated initial consonant is the marking of durative in Shoshoni. It normally affects the medial consonant of the verb stem, as in the following:

- SH (52) katǐ, kattǐ 'sit' (1975:41)
- (53) yǐtsǐ, yǐttsǐ 'get up, fly' (1975:41)
- (54) yǐkwǐ, yǐkkwǐ 'sit, PL' (1975:41)

When the verb stem, however, has no medial consonant which can be geminated, the initial consonant of the directional is geminated instead, as in the pairs (55)/(56) and (57)/(58).

- SH (55) nookintǐn 'carried on his back, coming this way' (1975:40)
(noó 'carry'; -kin 'come')
- (56) nookkintǐn 'kept carrying on his back, coming this way'
(1975:40)
(noó 'carry'; -"- DUR; -kin 'come')
- (57) miakwa 'left' (1975:38)
(mia 'go'; -kwan 'go')
- (58) miakkwa 'went back' (1972:48:21)
(mia 'go'; -"- DUR; -kwan 'go')

-kkin, with a geminated consonant, has been so completely analyzed as 'repetitive' that the initial geminate consonant is sometimes not considered as 'durative' by itself, as is illustrated by (59), which geminates the medial consonant of yǐkwǐ 'sit' and also includes -kkin for what is possibly an emphatic durative.

- SH (59)¹³ yǐkkwikkinna 'sat down' (1972:40:24)
(yǐkwǐ 'sit'; -"- DUR; -kkin REPET)

This need to include a directional in order to indicate duration on verbs with a medial consonant which could not be geminated is a probable explanation for the development of the repetitive meaning for -kkin.

-kkin, in acquiring a repetitive or durative meaning, then became the semantic opposite of -h/kkwan, which earlier had been shifted to mean 'momentaneous' in addition to 'motion away'. The gemination of the directional only appears to occur in Shoshoni, due to the fact that it has lost the alternating suffix -h/kkin for simultaneous motion on many verbs. This general loss of -h/kkin has allowed -kkin to become a repetitive suffix in Shoshoni without major ambiguity being a byproduct. (60) illustrates -kkin in a situation where the directional would have been -hkin due to the Pre-Central Numic stress of the verb tikkà 'eat'.

SH (60) tikkakkinna 'kept eating' (1975:42)
(tikkà 'eat'; -kkin REPET)

There are two indications that this is a recent development in Shoshoni apart from the fact that it does not seem to occur in Comanche. First, the initial consonant of the suffix is almost always geminated and never aspirated. In Pre-Central Numic, geminate consonants were preaspirated when following an unstressed vowel and geminated when following a stressed vowel. In Proto-Central Numic, a stress shift occurred which made the aspirated series of consonants distinctive. The suffixes which began with a geminated consonant in Pre-Central Numic underlying forms, and surfaced as geminated consonants after stressed vowels and preaspirated consonants after unstressed vowels, became the alternating suffixes in Central Numic, or those forms which alternate between underlying -hC and -CC, depending on the final stress on the verb stem in Pre-Central Numic. The final stress on the verb is constant, and that verb will take either the aspirating or the geminating suffixes, but never both. tikkà, for example, always takes the aspirating suffixes, as in (61) (with the suffix -h/kkwan), because its final vowel was unstressed in Pre-Central Numic. With the repetitive suffix, however, tikkà is followed by a geminate consonant, as in (62). This points to the development of -kkin as a suffix after the shift of stress in Proto-Central Numic, or else it, too, would have become an alternating suffix.

SH (61) tikkahkwa 'had eaten up' (1975:104)
(tikkà 'eat'; -hkwan MOM)

(62) tikkakkinna 'kept eating' (1975:42)
(tikkà 'eat'; -kkin REPET)

-kkin also occasionally occurs without the initial consonant geminated, as in (63).

SH (63) kwasi_ikinna 'cooking' (1975:123:288)
(kwasi 'cook'; -kin REPET)

These forms, however, are far outnumbered by the geminated forms and they appear to be examples of the general levelling of initial consonants of the directionals to spirantized consonants. It is also unlikely that this is an older form due to the fact that the reason the

directional became associated with durative in the first place was to provide a consonant that could be geminated on verbs without a medial consonant that could be geminated.

The second indication that the development of -kkin as a repetitive or durative suffix was relatively recent is its position in the verb complex. -kkin is found following the verb or secondary verb, as in (64) through (66), -nki 'causative', as in (67), -hVn 'emphatic completive (?)', as in (68), and the directionals, as in (69), although the full details of positional restrictions have yet to be worked out (for example, in (70) -kkin apparently precedes the directional -kwai although it follows -kwai in (69)).

- SH (64) pettsikkinna 'making a fuss' (1975:22)
(pettsi 'make a fuss'; -kkin REPET)
- (65) miakkimminna 'went on' (1975:94)
(mia 'go'; -kkin REPET)
- (66) punikkimia 'kept looking' (1972:35:19)
(puni 'see'; -kkin REPET)
- (67) tsawininkikiyu 'kept making him stand' (1975:43)
(tsa"- INSTR; wini 'stand'; -nki CAUS; -kkin REPET)
- (68) wasihinkinti 'has been killing' (1972:55:32)
(wasí 'kill, PL OBJ'; -hin EMPH COMPL; -kkin REPET)
- (69) nukkikwaikkiti 'ran around' (1972:85:11)
(nukki 'run, SG'; -kwai 'around'; -kkin REPET)
- (70) punikkikwaina 'looking around' (1972:87:7-8)
(puni 'see'; -kkin REPET; -kwai 'around')

The position of -kkin between the directional suffixes and most aspect suffixes indicates that the tendency of aspect suffixes to migrate to the end of the verb complex has not had time to influence -kkin to a great extent. The semantic opposite of -kkin, -h/kkwan 'momentaneous', however, has been in the language longer and has moved out of the directional position into a verb final status ('verb final' meaning 'among the aspect suffixes'), as in (71) and (72).

- SH (71) nunukkihtaihkwa 'ran up' (1972:40:21)
(nu- DL, RDP; nukki 'run, SG'; -htai 'finally'; -hkwan MOM)
- (72) tikkammaahkwa 'finished eating' (1975:43)
(tikka 'eat'; -mmaa 'finish'; -hkwan MOM)

While the extension of the meaning of -kin 'motion toward' to -kkin 'repetitive' is relatively recent, the extension of meaning of -kwan

'motion away' to -h/kkwan 'momentaneous' is much older, and predates the levelling of the directional suffixes to simple consonants subject to spirantization in Shoshoni. It is also possible that the extension of meaning occurred prior to Proto-Central Numic due to the fact that -h/kkwan is an alternating suffix, and has also been incorporated into the switch reference subordination system (see section 4). The fact that the directional -h/kkwan in Comanche sometimes is found in positions within the verb complex that are normally reserved only for aspect suffixes (see section 5) indicates that the shift in meaning to momentaneous does predate the split of Shoshoni and Comanche and that -h/kkwan 'momentaneous' was later lost in Comanche.

Miller (1975:37) defines -h/kkwan as being usually past activity of relatively short duration of time. For example:

- SH (73) tikkahkwa 'had eaten it up' (1975:104)
(tikkà 'eat'; -hkwan MOM)
- (74) nawasikkwa 'killed themselves' (1975:53)
(na- REFL; wasí 'kill, PL OBJ'; -kkwan MOM)
- (75) nunukkihtaihkwa 'ran up' (1972:40:21)
(ru- DL, RDP; nukkì 'run, SG'; -htai 'finally'; -hkwan MOM)

While the above definition is a good working definition, and the term 'momentaneous' will be retained here, more often than not, the meaning of -h/kkwan is a seemingly irreversible change of state. Verbs such as wasí 'kill, PL OBJ', pekkà 'kill, SG OBJ', tiai 'die, SG', -nai 'make', and tikkà 'eat' quite regularly take -h/kkwan as the aspect suffix of completion, as in the following:

- SH (76) wiitanaihkwa 'made her into a bear' (1972:41:27)
(wiita 'bear'; -nai 'make'; -hkwan MOM)
- (77) pekkahkwa 'killed' (1972:33:21)
(pekkà 'kill, SG OBJ'; -hkwan MOM)
- (78) tikkahkwa 'ate it up' (1975:104)
(tikkà 'eat'; -hkwan MOM)

The extension of meaning for the suffix of 'motion away' to completion is also attested in Southern Paiute (Sapir 1930:140) for -q·wa'ai-S (on some of the same verbs as in Shoshoni).

- SP (79) ya'aik·w'aivä 'die-off-shall, let him die off' (1930:140)
(ya'ai- 'die'; -q·wa'ai-S 'off')
- (80) a·'inuk·w'aiñuqwa·q·q̄ 'as soon as it became silent'
(1930:140)
(a·'inü- 'be silent'; -q·wa'ai-S 'off')

- SP (81) cu(w)q'q·waaix·y 'while eating it up' (1930:140)
(cu(w)a- 'consume'; -q·wa'ai-s 'off')

This extension of meaning and use for -q·wa'ai-s is readily apparent when comparing the position of -ny- in (82) and (83). -ny- is a suffix which makes verbs momentaneous. When it comes before -q·wa'ai-s, as in (82), the directional has its usual meaning of motion away, but when -q·wa'ai-s precedes -ny-, as in (83), -q·wa'ai-s has been reanalyzed as a suffix of completion.

- SP (82) pa^hqanyqwainumpa 'will kill as he passes along' (1930:410:3;
603)
(pa^hqa- 'kill'; -ny- MOM; -q·wa'ai-s 'go while')
- (83) pa^hqaq·w'ai^hnyqwani 'when I have killed' (1930:442:30; 603)
(pa^hqa- 'kill'; -q·wa'ai-s 'off'; -ny- MOM)

As discussed above, the durative in Shoshoni and Comanche is formed by geminating the medial consonant of the verb root. A non-geminated form is thus basically non-durative. In Southern Paiute, however, the geminating of a medial consonant in a verb does not mark duration, but momentaneous action, so the non-geminated form is non-momentaneous, or generally durative (Sapir 1930:240-241), as in the following:

- SP (84) tiyai- 'to happen', tiq·an'wi- 'to take place (at one
(1930:241) moment of time)'
- (85) nayari-nqi- 'to dodge', nayat·i-nqi- 'to dodge quickly'
(1930:241)
- (86) ta-'niyi- 'to stick one's foot in (duratively, customarily)',
ta-'nik·i- 'to stick one's foot in (momentaneously)'
(1930:241)
- (87) qi-nivuywi- 'to nibble at', qi-nip·uywi- 'to gnaw'
(1930:241)
- (88) tuv^wun'ni- 'to be waking up', tup·un'ni- 'to wake up (at
(1930:241) once)'

Southern Paiute, however, also marks a specialized durative, the iterative, by geminating the medial consonant and reduplicating the first syllable (Sapir 1930:259-261). For example:

- SP (89) ivi- 'to drink', i'ip·i 'drinks repeatedly, sips'
(1930:259)
- (90) yayai 'cries', ya(i)'yaq·ai 'cries several times'
(1930:261)

- SP (96) wa'anjɔwa'aiŋu 'to call out while going past' (1930:140)
(wa'anji-S 'yell'; -q·wa'ai-S 'go while')
- (97) ya'aik·w'aivä 'die-off-shall, let him die' (1930:140)
(ya'ai- 'die'; -q·wa'ai-S 'off')
- (98) cu(w)a'q·waaix·y 'while eating it up' (1930:140)
(cu(w)a- 'consume'; -q·wa'ai-S 'off')

Shoshoni also combines completion and momentaneous in -h/kkwan. (99) is a momentaneous fairly clearly, but (100) through (103) show more of the completion implied in -h/kkwan, and (104) shows some of the thoroughness implied in (94).

- SH (99) nunukkihtaihkwa 'ran up' (1972:40:21)
(nu- DL,RDP; nukki 'run,SG'; -htai 'finally'; -hkwan MOM)
- (100) wiitanaihkwa 'made her into a bear' (1972:41:27)
(wiita 'bear'; -nai 'make'; -hkwan MOM)
- (101) kwayakkwa 'came off' (1972:43:36)
(kwayá 'fall off'; -kkwan MOM)
- (102) pekkahkwa 'killed' (1972:33:21)
(pekkà 'kill,SG OBJ'; -hkwan MOM)
- (103) tikkammaahkwa 'finished eating' (1972:34:37)
(tikka 'eat'; -mmaa 'finish'; -hkwan MOM)
- (104) tikkahkwa 'had eaten it up' (1975:104)
(tikka 'eat'; -hkwan MOM)

The important point about the similarity between momentaneous and completion in Shoshoni and Southern Paiute is that, in both languages, the form of the directional suffix used for the extended meaning is the geminated form used for simultaneous motion. This is a good indication that the Shoshoni form -h/kkwan became 'momentaneous' at a time when gemination marked momentaneous action rather than durative, as it presently does in Shoshoni and Comanche. This makes -h/kkwan parallel in development to -kkin in some respects. As discussed above, -kkin probably became the repetitive suffix because the first consonant was geminated for duration. -h/kkwan, according to this analysis, became the momentaneous suffix because the first consonant was geminated for momentaneous in Proto-Numic (or Proto-Eastern Numic, cf. Freeze and Iannucci 1979).

We are now at a point where the relative chronology of the changes under discussion can be presented. Figure 2 shows the probable order of changes under consideration so far.



Figure 2. The Developments of *-kin and *-kwan

Roughly speaking, the Pre-Central Numic directionals were *-ki 'come' and *-kwa 'go' with spirantized initial consonants for prior motion and geminated initial consonants for simultaneous motion. In addition, the gemination of the medial consonant of a verb indicated 'momentaneous'. Subsequent to this, the geminated form *-kkwa was extended in meaning to include 'momentaneous' and 'completion'. Two of the changes which separate Proto-Central Numic from the other Numic languages are the phonemicization of the aspirated consonant series, making the directionals alternating suffixes, and the semantic shift of medial gemination from 'momentaneous' to 'durative'. Following the separation of Comanche and Shoshoni, *-h/kkwan 'momentaneous' was lost in Comanche and the distinction between prior and simultaneous motion was considerably eroded in Shoshoni. *-kkin in Shoshoni was extended to mean

'repetitive' and occasionally began to occur as -kin.

3. Other Semantic Extensions: -kin and -kwai

The directional suffixes -kin and -kwai have undergone two further semantic shifts in Shoshoni in addition to the shift noted for -kin in the preceding section. -kin has become a resultative suffix which can be fairly literally translated into English as 'came to'. Like the directional -kin, the form generally occurs with a spirantized initial consonant, as in (106) through (108), but occasionally has an alternating consonant, as in (105), which may indicate that the semantic extension occurred in Pre-Central Numic. The evidence for this however, is not conclusive.

- SH (105) k̄mmep̄kkahki 'got worse' (1972:65:6)
 (k̄mme 'different (?)'; -p̄kkà 'suffer'; -hkin 'came to')
- (106) tsaanapuikina 'dawn came' (1972:50:6-7)
 (tsaa- 'good'; na- PASS; puí 'see'; -kin 'came to')
- (107) to'ikina 'had come' (1972:50:7)
 (to'í 'emerge'; -kin 'came to')
- (108) tsunakina 'become extinct' (1972:90:35)
 (tsuna 'disappear'; -kin 'came to')

It is often difficult to determine if a particular use of -kin is directional or resultative. Section 5 deals with general problems of ambiguity, but here I have used a general rule of thumb that if the motion cannot be interpreted literally, then it must be a resultative. For example, (106) could be interpreted as the directional, in which case, a literal interpretation would be 'moved in this direction to be seen well' (or, 'and was seen well'). It is difficult to imagine dawn (or the indefinite subject which na- implies) as being able to move. (108), on the other hand, offers no such motion interpretation. In a transitive use, tsuna means 'to run out of supplies, to be out of something' (Miller 1972:145). Intransitively, tsuna means 'to disappear, to be all gone, to become extinct' (Miller 1972:146). Literally, tsunakina means 'come to disappear', or, more picturesquely, 'come to the end of the supplies', but in both of these cases, the motion cannot be interpreted other than in a figurative sense.

In Canonge (1958) there is no evidence to show this use of -kin in Comanche. Whether this variety of uses for the directionals in Shoshoni, but simplicity of use in Comanche, is a real difference between these languages, or evidence of the different analyses of the principle investigators of each (Miller for Shoshoni and Canonge for Comanche), is difficult to determine in the absence of other extensive published sources on the languages. St. Clair's Comanche and Shoshoni texts in the Smithsonian archives may provide the key to determining the exact extent of

semantic shifts in both Shoshoni and Comanche. For now however, we must accept Canonge's glosses for Comanche although the following forms seem to indicate that Canonge's translations may be overly literal. While (109) is clearly a directional, (110) seems to have more semantic affinity to the Shoshoni forms for 'came to' in (105) through (108). Also, it is difficult to exclude a momentaneous analysis for (111), although the direction of the activity would also allow a directional reading.

- CM (109) y^íts^íhkinU 'came flying' (1958:28:19)
(y^íts^í 'fly,SG'; -kkin 'come while')
- (110) to^íinUki 'comes in sight' (1958:42:20)
(to^í 'emerge'; -nuh COMPL; -hkin 'come while')
- (111) tsipé^íkwA 'unhorsed with lance' (1958:86:17)
(tsimpé 'unhorse'; -kkwan 'go while')

-kwai has acquired an extended use as a durative which can also be fairly literally translated into English as 'around'. As such, it has tended to move back among the aspect suffixes, as in (112) and (113). This shift of position tends to indicate an early date for the semantic shift as does the fact that it is alternating on some verbs, as in (113) and (117). Once again, the evidence from Comanche is inconclusive.

- SE (112) wewehyanukwaina 'burned up' (1972:46:22)
(we- DISTR,RDP; wehyà 'burn'; -nuh COMPL; -kwai 'around')
- (113) wehahkahkwaina 'burn up' (1972:46:27)
(wehyà 'burn'; -hka RSLTV; -hkwai 'around')
- (114) hannikwaina 'doing this' (1972:60:7)
(hannì 'do'; -kwai 'around')
- (115) tìhannikwainna 'was butchering' (1972:87:5)
(tì- INDF OBJ; hannì 'do'; -kwai 'around')
- (116) katìmpitìkwaitìhìn 'kept sitting down' (1975:113:111)
(katì 'sit,SG'; -mpitì 'arrive'; -kwai 'around')
- (117) yìtsìkkwaitìhìn 'getting up' (1975:113:111)
(yìtsì 'arise'; -kkwai 'around')
- (118) saakwainna 'boiled meat' (1975:118:202)
(saa 'cook meat'; -kwai 'around')

-kwai seems to occur most commonly in main clauses with the aspect suffix -na 'present resultative'. (116) and (117) have -kwai in subordinate clauses. As with -kin a directional meaning for -kwai was generally assumed until excluded semantically. (112) through (118) are all fairly clearly durative uses of -kwai, although some may be more ambiguous than

others.

This durative use of -kwai 'around' in Shoshoni is paralleled by a durative use of -q·wa'ai-s 'away' in Southern Paiute (Sapir 1930:140), but whether this points to a Proto-Numic shift is uncertain. The following forms illustrate -q·wa'ai-s 'away' as a durative:

- SP (119) ampax·qwa'ai 'talks away, keeps on talking' (1930:140)
(ampaya-s 'talk'; -q·wa'ai-s 'away')
- (120) t̥h̥qaq·w'ɔivä·ni 'I'll eat away, I'll keep on eating'
(1930:140)
(t̥h̥qa-s 'eat'; -q·wa'ai-s 'away')

Figure 3 illustrates the semantic shifts discussed to this point.

<u>-kin</u> 'come'	→ <u>-kkin</u> 'repetitive'
	→ <u>-kin</u> 'resultative'
<u>-kwan</u> 'go'	→ <u>-h/kkwan</u> 'momentaneous'
<u>-kwai</u> 'around'	→ <u>-kwai</u> 'durative'

Figure 3. Semantic Shifts from Adverb to Aspect

4. Syntactic Extension: -h/kkwan (-h/kkwai)

Of the three directionals under consideration, -kwan has undoubtedly had the longest, and at present, the most varied development. Several of the aspect suffixes of Shoshoni also indicate switch reference subordination. These suffixes, as Miller (1975:91) states, 'are really aspect suffixes doing double duty'. -h/kkwan (objective form -h/kkwai¹⁵) indicates generally that the subordinate clause activity is a moment within a longer-lasting main clause, or that the subordinate clause represents a change of state which occurred prior to the main clause. The subject of the clause with -h/kkwan is generally in the possessive case (Miller 1975:98), but apparently not always. In (121), the subject of the subordinate verb is in the objective case and in (122) it is in the subjective case.

- SH (121) tittsimmattsih kammanna. ikka pihyaa pimmin timpetta
pekkanuhkwa. 'They taste bad. The sweetness has killed
their mouths.' (1972:45:22-24)
(bad-taste taste. this-OBJ sweet their mouth kill)
(pekkà 'kill,SG OBJ'; -nuh COMPL; -hkwan SUB,DS,MOM)

Sentence (121) combines the switch reference suffix -h/kkwan in the subordinate clause with the main clause aspect suffix -na 'present resultative' on kammá 'taste'. The main clause is the continuum of time in which the pickleweed seeds have a bad taste. The subordinate clause contains the individual events within that continuum.

- SH (122) apesaittsi suapetainu, tapu tampekkahkwai. 'After while the one that Cottontail had killed came to.' (1972:51:7-8)
 (after-while came-to Cottontail killed)
 (tan- INDF SBJ; pekkà 'kill,SG OBJ'; -hkwai SUB,DS,MOM,OBJ)

In (122) we find the relationship between -h/kkwan and pekkà extending to a subordinate use. The main clause verb, suapetai, has the aspect suffix -nuh to mark the action as completed. The subordinate clause, however, is not a point within the continuum of the main clause, but is a seemingly irreversible change of state completed prior to the main clause. The one who is coming to (Sun) is the object of the subordinate clause, therefore the suffix is -hkwai.

5. Ambiguity and the Wandering Directionals¹⁶

By this point the reader should be completely confused as to what a form with a -hkwai tacked on will really mean. This is exactly the problem faced in analyzing much of the Shoshoni data. The following table illustrates the possibilities for each form in Shoshoni. Note that only two forms are less than three ways ambiguous and two forms are four ways ambiguous. (The X's indicate possible meanings for a particular form.)

	<u>Directional</u>		<u>Aspect</u>		<u>Subordination</u>
	move to	move while	durative repetitive	completive momentaneous resultative	switch reference momentaneous
<u>-kin</u>	X	X	X	X	
<u>-hkin</u>		X		X	
<u>-kkin</u>		X	X	X	
<u>-kwan</u>	X	X			
<u>-hkwan</u>		X		X	X
<u>-kkwan</u>		X	X	X	X
<u>-kwai</u>	X	X	X		
<u>-hkwai</u>		X	X		X
<u>-kkwai</u>		X	X		X

Table IV.
Ambiguity in Shoshoni Directionals

Of course, the semantics and historical morphology of particular verbs will preclude certain constructions from being possible. For example, in (123), -kkin can only be repetitive, as the directional on tikkà would have to be -hkin:

- SH (123) tikkakkinna 'kept eating' (1975:42)
 (tikkà 'eat'; -kkin REPET)

In (124), -hkwan can only be momentaneous (or in this case,

completive) suffix as there is no movement possible while finishing eating.

SH (124) tikkammaahkwa 'finished eating' (1975:43)
(tikkà 'eat'; -mmaa 'finish'; -hkwan MOM)

In (125), -hkwan can be either momentaneous (a very common suffix on pekkà) or simultaneous motion away. As the verb mia 'go' has -kwan 'motion away' already, pekkà could have -hkwan 'go while' as added directional, or 'going to the mountains, you will go while killing sheep'. In (126), -hkwai could be either durative, 'he was killing', or directional, 'he went around killing'.

SH (125) imaa nuun hakape, nuun tian pinnankwa, tiasin toyamantun miakwattsih, tiasin tukkuì pekkahkwantoih. 'In the morning or sometime, or later on, you will go to the mountains and again kill sheep.' (1975:119:220)
(tomorrow perhaps sometime, perhaps again later-on, again to-mountain going, again sheep will-kill)
(pekkà 'kill,SG OBJ'; -hkwan (MOM or 'go while'))

(126) suwaisin nahanu ke hii iampai sikkihtun nanah ha u pekkahkwainna. 'He was like that, so that he killed it, and nothing was wild here.' (1975:121:243)
(like-that become not something wild here just IRR it killed)
(pekkà 'kill,SG OBJ'; -hkwai ('around', directional, or 'around', durative))

In (127), -kkwan can be either momentaneous, or directional (with or without gemination for duration).

SH (127) u tihanitin, u nookkwa. 'He skinned it and packed it home.' (1975:120:231)
(it skinning, it carried)
(noó 'carry'; -kkwan ('go while' or 'DUR-go' or MOM))

(128) is also several ways ambiguous, 'sun was coming to enter' (i.e., 'coming this way to enter'), 'sun coming entering', 'sun was coming to enter' (or 'sun was entering'), or 'sun kept entering' (i.e., regularly). In the context of the story in which it occurs, the last interpretation is not likely, but the others are all equally possible.

SH (128) ap̄isai taȳikinku kukkeyu kunai hanniyu. 'Later when the sun was going down he went to gather firewood.' (1975:85)
(later sun-set getting-wood firewood gather)
(ta- 'sun'; yái 'enter,SG'; -kin ('come to' or 'come' or 'came to', resultative, or REPET))

The Comanche forms, on the other hand, are subject to very little,

if any, ambiguity based on Canonge (1958). Only the directional possibilities on Table IV can be found in the Comanche texts.

Crapo (1970:183) makes the statement concerning directionals that they occur 'before any tense aspects which might be present'. This, however, is not entirely true of Comanche. In the following sentences, the directionals -kin and -kwan occur away from the verb and after aspect suffixes. In (129), -hkwan occurs after -ttai 'finally (?)'. (The preceding vowel is not voiceless because it is part of a diphthong, and a before h regularly becomes ɥ when not preceded by glottal stop.)

CM (129) nobi~~h~~airaikwika 'moved away and left' (1958:38:14)
(no- 'move'; piá 'leave'; -ttai 'finally (?)'; -hkwan 'go while')

In (130) and (131), -kin and -kwan follow -kɨ 'causative'.

CM (130) hanikiki 'came to fix' (Canonge 1957:64)
(hani 'do'; -kɨ CAUS; -kin 'come to')

(131) pukutsakakikwatu'I 'will go to lead a horse' (1958:43:25)
(puku 'horse'; tsaka 'lead'; -kɨ CAUS; -kwan 'go to')

In (132) and (133), -hkin and -hkwan follow -nuh 'completive'.

CM (132) okwenUkwa 'floated off' (1958:58:20)
(okwé 'float'; -nuh COMPL; -hkwan 'go while')

(133) to'inUki 'comes in sight' (1958:42:20)
(to'i 'emerge,SG'; -nuh COMPL; -hkin 'come while')

In Shoshoni, the directionals can be interpreted as those suffixes which immediately follow the verb (or secondary verb) and come before any aspect suffixes. Conversely, if a suffix follows an aspect suffix or another directional, then it must be as aspect or subordinating suffix. This rule eliminates some ambiguity and can explain such forms as (134) and (135) unambiguously.

SH (134) miakkwankɨ 'followed' (1972:59:7)
(mia 'go'; -- DUR; -kwan 'go'; -nkɨ CAUS)

(135) nukki~~h~~waikkiti 'ran around' (1972:85:11)
(nukki 'run,SG'; -kwai 'around'; -kkin REPET)

This rule is stretched however, in requiring a durative explanation for -kwai in (136) and excluding a directional explanation.

SH (136) punikkikwaina 'looking around' (1972:87:78)
(puni 'see'; -kkin ('come while' or 'DUR-come' or REPET);
-kwai 'around', durative (or 'around', directional (?)))

The movement of the directionals out of a fixed position in Comanche, at least, can be accounted for by the ambiguity inherent in the Proto-Shoshoni-Comanche system of extended semantic domains for the directionals. As the new aspect suffixes moved away from the verb and towards the end of the verb complex, the homonymy in the system allowed directional interpretations for what were supposed to be aspects. In Comanche, the ambiguous aspect and subordination suffixes were apparently lost after the split with Shoshoni, but the directionals continued to occur in positions where the aspect and subordination suffixes had previously occurred. The order of changes can thus be summarized as in Figure 4.

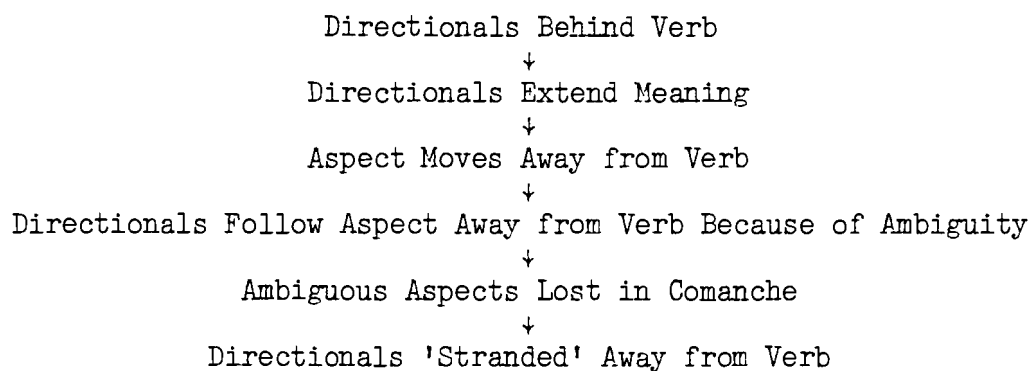


Figure 4. The Wandering Directionals in Comanche

NOTES

1 The Shoshoni examples are written phonemically, with the following changes from the practical orthography used by Miller:

<u>Miller</u>	<u>McLaughlin</u>
e	ɛ
<u>ai</u>	e

Shoshoni sentences begin in capital letters in Miller's volumes, but I have written all initial letters of sentences in lower case so as not to confuse them with the voiceless vowels written with capital letters in Comanche.

2 The Comanche examples are written in a broad phonetic transcription, with the following changes from Canonge's symbols:

Canonge McLaughlin

^	±
<u>a</u>	A
<u>e</u>	E
<u>i</u>	I
<u>^</u>	±
<u>o</u>	O
<u>u</u>	U
?	!

Comanche examples within the body of the text and in the morpheme-by-morpheme glosses, are phonemicized along the lines suggested in Miller (1973), although this is not without problems and can only be considered preliminary.

3 The final nasal on -kin and -kwan is a final feature. It serves to indicate the phonetic quality of a following consonant (unless that consonant is not subject to final features). The final n will rarely be seen in the examples cited and one should consult Miller (1975:2-8) for further details of Shoshoni final features and Miller (1973) for Comanche.

4 In giving the source of data, the forms from Miller (1972) and (1975) for Shoshoni will be cited as (1972) and (1975) respectively, followed by the page number and line number in (1972), or sentence number in (1975:107-131). The Comanche forms from Canonge (1958) will be cited as (1958) followed by the page number and sentence number. Southern Paiute examples from Sapir (1930) will be cited as (1930) followed by the page number. When drawn from the texts and dictionary, the page number and line number is given, followed by the page number of the form in the dictionary. In giving the morpheme-by-morpheme glosses in parentheses, only the morphemes preceding the directionals will be given, as the following morphemes do not bear on the topic at hand. Abbreviations used in this paper are:

CM Comanche
SH Shoshoni
SP Southern Paiute

CAUS	causative	INDF	indefinite
COMPL	completive	INSTR	instrumental
DISTR	distributive	IRR	irrealis
DL	dual	MOM	momentaneous
DS	different subject	OBJ	object
DUR	durative	PASS	passive
EMPH	emphatic	PL	plural

RDP	reduplication	SBJ	subject
REFL	reflexive	SG	singular
REPET	repetitive	SUB	subordinate
RSLTV	resultative		

5 The stress mark on the final vowel of Shoshoni and Comanche verbs is the Pre-Central Numic stress and indicates whether alternating suffixes will have the initial consonant aspirated (following \dot{y}) or geminated (following \ddot{y}). Aspirated is the term used by Miller for what surfaces as a voiceless vowel followed by a voiceless fricative in Shoshoni.

6 I use the terms prior motion and simultaneous motion to distinguish between glosses of 'go to do' and 'go doing'. That this is a time distinction and not a distinction of purpose or intent is illustrated by many glosses of 'go and do' for the prior motion forms.

7 The symbol $_$ indicates that the following consonant is geminated.

8 The final 'stress' on Shoshoni and Comanche verbs is almost always identical in both languages (as it reflects Pre-Central Numic stress), but there are a few cases where it does not, as in CM nutaá, SH nutaá. The Shoshoni 'stress' may have changed on this form by analogy to nukki 'run,SG'.

9 The Southern Paiute forms are written phonetically with the following changes from Sapir's transcription:

<u>Sapir</u>	<u>McLaughlin</u>
' , x	h
ĩ	ı
N	ŋ
W	w
A	ə
I	i
İ	ı
U	u

In addition, stress, final aspiration, syllable boundaries, raised vowels, and fronting diacritics under \underline{x} , \underline{x} , and \underline{k} are omitted.

10 The Shoshoni and Comanche suffix -kwai 'random movement' is cognate with Southern Paiute -kwa'ai, and Crapo (1970:186) lists the form as a subset of the directionals meaning 'going', but I have excluded it here for the sake of clarity.

11 Southern Paiute forms have been phonemicized along more recent lines for purposes of easy comparison.

-y ⁱ -s, -k ⁱ -s, -ŋki-s	-ki
-ywa'ai-s, -q ^w a'ai-s, -ŋqwa'ai-s	-kwa'ai
-y ⁱ -s	- ^s ki
-ywa'ai-s	- ^s kwa'ai
-q ^w a'ai-s	-kkwa'ai

12 I would like to thank Hiroshi Nara for providing me with Japanese equivalents to the Central Numic directionals being discussed, and for many helpful comments on the topic (Figure 1 was his idea). I am, however, totally responsible for the use, or misuse, of his materials.

13 This is a problematic form as Miller (1975:40) states that 'no further suffixing is possible' when the medial consonant of a verb stem is geminated. It is unlikely, therefore, that this form contains -kkin 'come while', so ambiguity with -kkin 'repetitive' is not probable.

14 The final feature of the Shoshoni and Comanche forms is unattested in the other Numic languages as far as I have seen and so it is not included in forms reconstructed prior to Proto-Central Numic. The origin (or loss) of the final nasal feature is a subject for future research. The Proto-Central Numic forms would have been *-kin and *-kwan.

15 -h/kkwai 'objective subordinate switch reference' is not related to -kwai 'around'. -h/kkwai is regularly composed of -h/kkwan plus the objective suffix -i.

16 An earlier version of this section was read at the 1982 Missouri Philological Association meeting, 26 February 1982, at Fulton, Missouri.

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