

10. Clause chaining in Uto-Aztecan: A Northern Paiute perspective

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Abstract

Clause chains in Uto-Aztecan vary substantially in their surface realization, including in the number and interpretation of clause chain markers and in whether they mark switch-reference. In this chapter, I survey this variation and provide a detailed study of clause chaining in one Uto-Aztecan language, Northern Paiute. The language's clause chains exhibit distinctive properties, including variability in the position of marking clauses and the case of the marking clause subject (nominative vs. accusative), both properties that are attested elsewhere in the language family. I introduce a formal analysis of clause chaining in Northern Paiute which can account for these properties and which offers one perspective on the grammatical sources of the variation attested within Uto-Aztecan and with other languages.

Keywords

clause chaining, coordination, tense, aspect, discourse structure, Uto-Aztecan, Northern Paiute

Biographical paragraph

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10. Clause chaining in Uto-Aztecan: A Northern Paiute perspective*

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10.1. Introduction

Clause chains in Uto-Aztecan languages resemble, in many ways, canonical examples of the sentence type. In Northern Paiute, for instance, a sequence of *marking clauses*, each bearing verbal morphology conveying temporal sequence or simultaneity, can combine with a *main clause* which is inflectionally specified like an independent sentence.¹

- (1) a. “Yaisi mi=toogi=tiwau nobiya-u-**si**, mi=toogi=tiwau
 then PL=dog=also pack.up-PERV-SEQ PL=dog=also
 tsa-hibi-ki-u-ga-**si**, tammi mia-ga-kwi,” mii.
 IP.fist-drink-APPLIC-PERV-away-SEQ 1PL.INC go-away-FUT QUOT
 ‘So then, “Once the dogs are packed up, and the dogs have gotten a drink, we’ll take
 off!” (I was) thinking.’ (personal narrative: Kennedy 2020: 80)
- b. Yaisi o=woetsimmi-**na**, yaisi o=ggwidzi-**na**,
 PART 3SG.ACC=watch-SIM then 3SG.ACC=stir-SIM
 o=ddza-puni-hu-dzaga-ti.
 3SG.ACC=IP.fingers-see-PERV-MOT-GENL
 ‘While you are watching it, while you are stirring it, you look at it every once and a
 while.’ (procedural narrative: MS, BP09-1-t4, 7)

The choice to call the final clauses in (1) “main clauses” was made for purely morphological reasons. It is not meant to imply anything about whether marking clauses are subordinated. The clause chain markers do not appear as dedicated markers of any subordinating environment (e.g., relative clauses or complement clauses), nor are marking clauses introduced by an overt subordinator.

There are some significant differences between these clause chains in Northern Paiute and their more well-known counterparts in the languages of Amazonia or New Guinea (e.g.,

* I am immensely grateful to my teachers and collaborators, Grace Dick, Edith McCann, and Madeline Stevens, for teaching me about their language over the years, as well as to the other elders who I have been fortunate to work with, including Leona Dick, Morris Jack, Elaine Lundy, and Harold Miller. I would also like to thank Gabriela Caballero and Heidi Harley, who generously pointed me to and helped me interpret resources for Taracahitic, as well as Tim Thornes for sharing unpublished Northern Paiute texts with me. Any errors in how these have been presented or interpreted are my own.

The abbreviations specific to this paper are: ABS = “absolutive” suffix (a marker of non-possessioned nouns in Uto-Aztecan: see, for instance, Langacker 1977: 77), ADVZ = adverbializer, DUB = dubitative, EGO = egophoric, EV = echo vowel, INCEP = inceptive, IP = instrumental prefix, MIR = mirative, MOT = motion, NOMZ = nominalizer, NPL = nonplural, PROSP = prospective aspect, REPT = repetitive, RESUM = resumptive pronoun, REV = reversive, SEQ = sequential, SEV = several, SIM = simultaneous, TH = thematic suffix.

¹ All Northern Paiute data is drawn either from published sources, materials shared with me by Tim Thornes, or my own fieldwork on the southernmost variety of Northern Paiute, spoken at and around Mono Lake in eastern California. I have worked primarily with two fluent elders who were members of the Bridgeport Indian Colony, meeting regularly with them from 2005–2016 in a group with another, younger speaker. Every Northern Paiute example in the chapter is annotated with its genre (elicitation, traditional narrative, procedural narrative, etc.) and its source. If the example comes from my own unpublished fieldnotes, the initials of the speaker who uttered or provided a judgement for the example are also provided, along with the identifier for an audio recording or transcribed text and a timestamp or sentence number for its location within that source. While only one speaker’s initials are provided for elicited sentences, these were almost always verified by both elders.

Longacre 2007:398–420, Foley 2010, Sarvasy 2015). Clause chains in Northern Paiute exhibit two other properties, initially identified by Thornes (2003: 454–464), which are not apparent from looking just at the examples above. First, marking clauses can occur either preceding or following the main clause, with consequences for their interpretation. Regardless of the marking clause’s position, its temporal relation (succession or overlap) to the main clause remains constant; however, when the marking clause follows, it can stand in an additional causal relation to the preceding clause. Second, there is variability in the case that the marking clause subject bears (nominative or accusative). This, too, affects the marking clause’s interpretation, in particular its relation to the following clause.

In this chapter, I introduce a formal theory of clause chaining in Northern Paiute which aims to account for these properties, as well as contribute to the comparative study of clause chaining. I frame the discussion of Northern Paiute within a survey of clause chaining across Uto-Aztecan in Section 10.2. As the results of this survey show, there is significant variation in the surface form of clause chains across the language family, though the unusual properties of clause chains in Northern Paiute are attested robustly elsewhere in the family. This does not imply that the analysis for Northern Paiute can be directly applied to other Uto-Aztecan languages — it is a large, diverse family — but it does suggest what some of the grammatical sources for the attested variation might be.

After describing the basic properties of clause chaining in Northern Paiute in Section 10.3, I turn to a syntactic and semantic analysis in Sections 10.4–10.5, which builds on Toosarvandani (2016). The starting point is the linear variability of marking clauses, whose temporal interpretation remains constant. This motivates an account, paralleling Foley’s (2010) analysis of some Papuan languages, with the following grammatical ingredients: (i) clause chains in Northern Paiute have an asyndetic clausal coordination structure, and (ii) the clause chain markers are relative tenses, which relate the time of the marking clause to the time of another clause in the chain. The additional causal meaning found when a marking clause follows the main clause arises from general pragmatic processes involved in how clause chains are interpreted in discourse (Kamp & Rohrer 1983, Partee 1984, Mann & Thompson 1988, Kehler 2002, Asher & Lascarides 2003).

These pragmatic processes also offer a way of understanding clause chains in which the marking clause subject bears accusative case. These, too, appear to be coordination structures, though they exhibit some un-coordination-like behavior. They resist across-the-board movement (parallel movement from all coordinates) and allow for cataphoric reference. I attribute this to how accusative-subject marking clauses interact with the surrounding discourse. Unlike nominative-subject marking clauses, these are not contextually anchored to the preceding discourse, and instead are only interpreted relative to the clause that follows them.

At this point, it is not possible at this point to say which of these grammatical components are shared by clause chains elsewhere in Uto-Aztecan. For some of these languages, available documentation is quite slim. But in many, clause chaining has simply not been investigated in much detail. This chapter, I hope, can provide some motivation for doing this and for better understanding what Uto-Aztecan languages show us about theories of clause chaining, and clause combination more generally.

10.2. A survey of clause chaining in Uto-Aztecan

Uto-Aztecan comprises some 30 or so languages, spoken from Oregon and Idaho through Mexico and into El Salvador. Its main subgroupings (from north to south) are: Numic, Tubatulabal, Takic, Hopi, Tepiman, Tarachitic, Corachol, and Nahuatl (Campbell 1997:134).

In general, Uto-Aztecan languages are agglutinating, (poly)synthetic languages. While many, including Northern Paiute, have dominant AOV/SV order, others have relatively free constituent order. Some southern languages, in or near Mesoamerica, have borrowed verb-initial constituent order (Nahuatl and Tepehuan languages). Uto-Aztecan languages distinguish the major word classes (nouns, verbs, adjectives), and mark grammatical relations with agreement and/or case. Verbs are richly inflected, though there is significant variation in whether tense is marked and what tense distinctions are made.

Asyndetic coordination in Uto-Aztecan is common, and no coordinator for the proto-language is easily reconstructed. When languages have an overt coordinator, it is usually ‘and’, rarely ‘or’ or ‘but’ (Langacker 1977:159–160). While some languages clearly have overt subordinators (for complement or adverbial clauses), it is harder to tell for others. In some, there is little evidence for clausal subordination that does not involve deverbal nominalization, including in Northern Paiute (Thornes 2003:454).

Clause chaining is clearly found throughout Northern Uto-Aztecan (Numic, Tubatulabal, Takic, and Hopi) and in some parts of Southern Uto-Aztecan (some of Tepiman, Tarachitic, and Corachol). There is no evidence of clause chaining in Nahuatl. Instead, temporal subordinators are used in Pipil (Campbell 1985:131) and in modern Nahuatl languages (e.g., Tetelcingo Nahuatl; Tuggy 1979:130–131).

There are only a few brief overviews of clause chaining (or switch-reference) in Uto-Aztecan (Langacker 1977:189–192, Jacobsen 1983:158–159). In what follows, I provide the results of a more comprehensive survey, focusing on answering the following questions for 12 languages (at least one for each of the eight branches of the language family except Nahuatl):

1. How many clause chain markers are there?
 - a. What is their approximate meaning?
 - b. Do they mark switch-reference?
2. Can the clause chain markers occur with tense (if a language has morphological tense)?
3. Does the subject appear both in marking clauses and the main clause (when same subject)?
4. When the subject appears in marking clauses (whether same or different subject), what case does it bear?
5. Where does the marking clause occur (before or after the main clause)? How does its position relate to its interpretation?
6. Can an overt coordinator appear in clause chains?

Because even basic documentation of clause chaining is sparse for some languages, it is not always possible to address each of these questions.

There are other questions that could be asked about longer clause chains. However, it is a striking property of the available sources for Uto-Aztecan languages that they mostly include short examples, sometimes only biclausal ones. While this might simply be a product of the examples that authors have chosen, there is reason to think that this might be real property of clause chaining in the language family. In the discussion of Northern Paiute in Section 10.3, I

show that clause chains in the language are not very long. Chains of three to four clauses like the ones in (1a–b) are common, though many chains contain just one marking clause; longer chains are rare in spontaneous speech.

It is important to acknowledge that the results of this survey are circumscribed by my ability to interpret the source materials for languages I am less familiar with. This is especially true for what counts as a clause chain and a clause chain marker. In very few grammatical sources are clause chains described as such, and I had to make some interpretive choices. As a rule, I took verbal inflection to mark a clause chain if: (i) its semantic contribution primarily established a temporal modification relation between clauses and (ii) it did not obligatorily appear in a canonical subordinating environment (e.g., relative clauses or complement clauses). Importantly, length was not used as a criterion.²

10.2.1. Numic

Numic has three branches: Western, Central, and Southern. Since Northern Paiute, which is in Western Numic, is addressed in Sections 10.3–10.4, only Central and Southern Numic are covered here, by Timbisha (Dayley 1989:331–347) and Chemehuevi (Press 1971:108–109).

Timbisha has two sequential markers and one simultaneous marker. These cannot occur with tense (future *-nnuhi* or “general” nonfuture *-nna*) or certain aspects (e.g., perfect *-ppih*). The two sequential markers differ in their switch-reference marking: *-(t)si* indicates same subject (2) and *-kwa* (or *-ka*) different subject (3). The subject of a different subject marking clause, when overt, appears in the accusative case (3a–b).³

- (2) a. Nii ohipi-tta kwii-**si** ohiinna.
1SG.NOM cold-ACC catch-SEQ.SS cough
‘I cough after I catch a cold.’
- b. Kapaayu himping ko’inna tokowa-i ti’iwahwa-**tsi**.
horse backwards go.back snake-ACC be.afraid-SEQ.SS
‘The horse backed up, as it was afraid of a snake.’ (Dayley 1989:350)
- (3) a. Hipittsitsi simmi yikkwi, “Utummi pitikkang-**kwa** pie
old.lady thus say.DUR those.ACC arrive-SEQ.DS already
tammin tipa-nna nayaa-tu’i-ppih.”
1PL.INC.GEN pinenut-ACC be.taken-FUT-PER
‘The old lady says, “After they arrive, our pinenuts will already have been taken.”’
- b. Tangummi tihiya kuttih u nukwi-**kwa**.
man deer shoot 3SG.ACC run-SEQ.DS
‘The man shot the deer as it was running.’ (Dayley 1989:348)

The marking clause event only needs to start before the main clause event (3b). It can completely precede it, the (a) examples, or partially overlap it, the (b) examples. When it follows the main clause, a marking clause bearing *-(t)si* can convey a causal relation (2b).

A simultaneous marker, *-ku*, only exists for different subjects (4). Just as with the sequential marker, the marking clause subject appears in the accusative case (4b).

² The examples in this section are presented in each author’s original orthography, without any effort to normalize it.

³ There is another different subject sequential marker, *-ka*, though it is unclear how it differs from *-kwa*.

- (4) a. Üma-**ku** tammi kahni kuppa weekikkwan-tu'ih.
rain-SIM.DS 1PL.INC.NOM house in enter.PL-FUT
'When it rains, we're going to go in the house.'
b. Pahakantin puuhawi-**nna** ing kamma-**ku**.
shaman cure-GENL you.ACC be.sick-SIM.DS
'The shaman curses you when you're sick.' (Dayley 1989:348)

Timbisha allows, alongside asyndetic coordination, overt clausal coordination with *tunga* 'and, but'. However, there are no examples of clause chains with an overt coordinator in Timbisha.

Chemehuevi has four clause chain markers: two indicating temporal sequence, and two temporal simultaneity. None occur with tense (e.g., past *-v#* or present *-#i*). The two sequential markers, *-c(i)* and *-k(a)* (5a–b), and the two simultaneous markers, *-ga(i)* and *-g(u)* (6a–b), each contrast in switch-reference. In same subject marking clauses, Press reports that the subject can only be realized overtly in one clause, which from the attested examples can be the marking clause (5a, 6a). In different subject marking clauses, the subject bears accusative case (5b, 6b).

- (5) a. Ann ijapaka-**c** tirawi?i-kwai-vi
Ann be.scared-SEQ.SS dash-MOT-PAST
'Ann ran off because she got scared.'
b. nīm jaga-ka-vi?i-m naga-vuṅkuci-wi kogo?i-ti-ka-**k**
we cry-SEV-PAST-PL mountain.sheep-pet-PL.ACC kill-PASS-SEV-SEQ.DS
'We cried because the sheep were killed.' (Press 1979:108)
- (6) a. John huvitu-ni?i-**ga** winimi-j
John sing-CONT-SIM.SS dance-PRES
'John is singing and dancing.'
b. puṅkuci huvitu-**g**, aipac aṅ tika-vi
dog.ACC sing-SIM.DS boy that eat-PAST
'While the dog sang, the boy ate.' (Press 1979:108)

Sequential marking clauses can follow the main clause, while preserving the temporal anteriority of the marking clause event (5b). Whether they precede or follow, these clause chains can have a causal interpretation (5a–b). No clausal coordinator in Chemehuevi can appear in clause chains.

10.2.2. Tubatulabal

Tubatulabal has three clause chain markers (Voegelin 1935:124–127),⁴ none of which appears to occur with tense (present *-t* or future *-cam*). One, *-'ima*, is used in same subject marking clauses and clearly expresses simultaneity (7). It requires a durative event in the marking clause to "[extend] before and after" the main clause event.

- (7) wele-'hani'-**'ima'** ala-'wina'-t o-'wani-'i-l-a'
fish-SIM.SS read-PRES book-ABS-ACC
'He is reading the book while fishing.' (Voegelin 1935:124)

⁴ Voegelin (1935: 125–127) identifies suffixes describing other temporal relations, though these seem to be formed with one of the other, more basic suffixes.

The other two markers, *-c* and *-ŋ*, encode a temporal relation which ranges between temporal sequence and approximate temporal coincidence: *-c* marks same subject (8) and *-ŋ* different subject (9). When a subject is overt inside the marking clause, it can bear accusative case (9a–b).

- (8) a. a'dza'ya'awa'-t a'aci'-c
yell-PRES bathe-SEQ.SS
'He yells when he is bathing.'
- b. ta'wigī'i-la'-c hani'-l-a' uyu'k
see-MOT-SEQ.SS house-ABS-ACC fall.down
'When he went to see the house, he fell down.'
- c. pi'ckitc i'ct apa'lak-a'n pili'-'la'-c
it.is.said coyote throw-? arrive-MOT-SEQ.SS
'Then it is said, Coyote threw it down when he arrived.' (Voegelin 1935:125)
- (9) a. kô'mi' wel'hana'-ŋ wah ta'twa'l halī'-t
woman.ACC fish-SEQ.DS there man sit-PRES
'When the woman is fishing, the man is sitting there.'
- b. ta'twa'l a'dza'ya'awa'-t kô'imi a'aci'-ŋ
man yell-PRES woman.ACC bathe-SEQ.DS
'The man is yelling when the woman is bathing.' (Voegelin 1935:126)

For both, the marking clause can follow the main clause, e.g., (8a, c) and (9b). When this is the case, the temporal relation between clauses is the same as when it precedes: in (8c), for instance, the marking clause event temporally precedes the main clause event.

While Voegelin says *-ŋ* “is used much like” *-c*, it is not entirely clear from the available data that they both encode the same temporal relation. For *-c* at least, the medial clause can describe a punctual event which temporally precedes the main clause event, as in (8b). If this clause chain marker only requires the marking clause event to start before the main clause event, like its cognate *-(t)si* in Timbisha, then it should also be compatible with a temporally overlapping interpretation, as in (8a). For *-ŋ*, however, the marking clause events seem always to be durative and to overlap the main clause event, at least going by the translations in (9a–b). Without any more evidence, I will follow Voegelin and classify both these clause chain markers as sequential.

10.2.3. Takic

Takic comprises several languages, of which only Serrano (Hill & Hill 2019:1003–1013) and Cupeño (Hill 2014:406–4011) are described here: see Hill & Hill (2019) on clause chains in Cahuilla, Cupeño, Kitanemuk, and Tongva.

Serrano has three clause chain markers, which do not occur with tense inflection. For same subject marking clauses, one marker, *-nuk(i)* or *-nkw*, indicates temporal sequence (10), while another, *-iv* (or *-ivaju7*, depending on the speaker), indicates temporal simultaneity (11).⁵

- (10) a. Nyyp-ky-**nuk**=kwyn ama-j kwa7-i.
sit.down-TH-SEQ.SS=QUOT.3SG>3SG DIST-ACC eat-INDIC
'She sat down and ate it.'

⁵ Hill & Hill (2019: 1004) identify another same subject marker, *-ivi7-ka7*, which they describe as conveying immediate future. But this seems likely to be compositionally comprised of the simultaneous marker and a future marker.

- b. Kaw7-i=kwyn nyyp-ky-**nuk**.
 eat-INDIC=QUOT.3SG>3.SG sit.down-TH-SEQ.SS
 ‘She ate as she sat.’ (Hill & Hill 2019:1011)
- (11) Kwyn juu7 yk-**iv**.
 QUOT.3SG cry lie-SIM.SS
 ‘It cried as it lay [there].’ (Hill & Hill 2019:1008)

For different subject marking clauses, a single marker *-w* is used, for which Hill & Hill do not describe any meaning. It seems to be compatible either with temporal sequence (12a) or simultaneity (12b).

- (12) a. Ama7 kiur-ko-**w** ymi7=ta=m7 navyy^Rnu7 kiur-k-iv.
 DIST dive.in-TH-**DS** 2SG=IRR=2SG next dive.in-TH-FUT
 ‘If he goes in (first), you go in next.’ (Hill & Hill 2019:1004)
- b. Wahi7=kwyny=vy-7 churup-k mutu7 cho^Rnu7-wyno-**w** Huunav-t.
 Coyote=QUOT=3SG-PAST enter-TH still stand-RES-**DS** badger-ABS
 ‘Coyote slipped through while Badger was still standing there.’ (Hill & Hill 2019:1006)

Marking clauses can appear after the main clause for all three clause chain markers (10b, 11, 12b). The available materials do not make it possible to determine whether their interpretation varies with the marking clause’s position.

Cupeño has a more restricted clause chain marker inventory. It has just a single same subject marker, *-nuk*, which conveys both sequential (13a) and simultaneous (13b) interpretations. And it has a single different subject marker, *-qali* (*-weni* in the plural), with only a simultaneous interpretation (14). Neither marker can occur with tense inflection.

- (13) a. Mu=ku’ut pi=’am-i-**nuk**, pi=pe-meq.
 and=REP 3SG.ACC=knock.down-TH-SS 3SG.ACC=3SG-kill
 ‘And it is said that having knocked him down, he killed him.’
- b. Mu=ku’ut pe-ngiiy wem-i-**nuk**.
 and=REP 3SG.NOM-go.away carry.on.shoulder-TH-SS
 ‘And he went away carrying it over his shoulder.’ (Hill 2014:406)
- (14) a. Pe’ hanaka yap-pe-ya-**qali**, isi-ly
 DET again be.absent-3SG.NOM-TH-**DS** coyote-ABS
 pe-mi’aw-lu-qal.
 3SG.NOM-arrive-go.to-PAST.IMPERV.SG
 ‘Again, while she was out, Coyote arrived.’ (Hill 2014:409)
- b. Mi=tew=ne=pe pe’-mi’aw-**weni**.
 3PL.ACC=see.F=1SG=IRR 3PL.NOM-arrive-**DS**
 ‘I will see them when they come.’ (Hill 2014:410)

In the examples available, same subject marking clauses have a simultaneous interpretation when they follow the main clause, and a sequential interpretation when they precede it. For different subject marking clauses, either order is also possible.

10.2.4. Hopi

Hopi has three clause chain markers and is a language without morphological tense (Jeanne 1978:182–183). There are two sequential markers: *-t(i)* for same subject (15a) and *-q(ö)* for different subject (15b). An overt subject can occur in both marking and main clauses, regardless of switch-reference marking.

- (15) a. *ʔi-pava paki-t (pihʔ) pam qatipti.*
 1SG-brother enter-SEQ.SS then 3SG.NOM sat.down
 ‘When my brother_i came in, he_i sat down.’
 b. *ʔi-pava paki-q (pihʔ) pam qatipti.*
 1SG-brother enter-SEQ.DS then 3SG.NOM sat.down
 ‘When my brother_i came in, he_j sat down.’ (Jeanne 1978:183)

There is also a simultaneous marker, used only for same subject marking clauses, *-kʷaŋ(a)* (*-kʷaakʷaŋ(a)* in the plural), glossed roughly as ‘while’.

- (16) Pam timalaʔyta-**kʷaŋ**, sööwi waynima.
 3SG.NOM work.NPL-SIM.SS just walk.SG
 ‘While he is (supposedly) working, he is just loafing.’ (Jeanne 1978:347)

While marking clauses always precede the main clause in the available examples, there are too few of these to determine definitively whether their order is fixed.

10.2.5. Tepiman

Tepiman is comprised of two branches: Tepehuan and Pimic. Clause chaining appears in Northern Tepehuan, where there are two clause chain markers: *-kai* and *-tai* (Bascom 1982:380). It was not possible to tell, from the available materials, whether Northern Tepehuan has tense or whether any putative tense morphology can appear in a marking clause. Bascom describes *-kai* as having a “punctiliar connotation” (17), while *-tai* has a “continuous connotation” (18). The former is reasonably analyzed as a sequential marker, and the latter as a simultaneous marker. Neither marks switch-reference.

- (17) a. *ka=ibí-kai úunu-i dʷúúki ógai oidʷígi*
 already=yield-SEQ corn-ABS rain stop world
 ‘When the corn has ripened, it will stop raining.’
 b. *máako tása-i lí-liči iñ-ki-kísdʷa-ña*
 four day-ABS REPT-little.bit 1SG.ACC-REPT-put.on-APPLIC-PAST.DUR
ígai iñ-ikáso iñ-dúĩñ-dʷa-kai
 3PL.NOM 1SG.GEN-leg 1SG.ACC-make-APPLIC-SEQ
 ‘For four days they put my leg on for a little while, after having made it for me.’
 (Bascom 1982:380)
 (18) *dai ka maaši-dʷa-tai íi i-kíli ámi vavíli-a-iñdi-ri*
 and already appear-APPLIC-SIM went DEF-man there wild.fig-LOC-form-at
 ‘And as it was getting light, the man left Wild Fig Valley.’ (Bascom 1982:380)

A marking clause with *-kai* can precede or follow the main clause (17a–b); no comparable example is available for *-tai*.

Other Tepiman languages appear to lack clause chaining, using constructions with very different surface forms to convey temporal relations between clauses. In Southeastern Tepehuan, a generalized subordinator is used, in combination with various particles (Willett 1991:238, García Salido 2014:214–259). Tohono O’odham conveys this type of meaning using a participle (Zepeda 1983:107; see also Saxton 1982:257–262), though Langdon & Munro (1979:338–340) document cognate switch-reference markers in Akimel O’odham, appearing in clauses that are “relatively independent semantically.”

10.2.6. Taracahitic

Taracahitic is comprised of Cahitan, which includes Hiaki (Dedrick & Casad 1999:312–315, 388–391), and Tarahumaran, which includes Rarámuri, e.g., Choguira Rarámuri (Caballero, in preparation), and Guarijío (Miller 1996:198–204).

Hiaki has just one clause chain marker, *-kai*, which cannot appear with tense. It can convey both simultaneous (19a) and sequential (19b) interpretations, and it is obligatorily same subject. The marking clause can precede (19a–b) or follow (19c) the main clause: in the former position, the clause chain maker is pronounced as *-ka*, as a result of undergoing apocope in a tonic position (Heidi Harley, p.c.).⁶

- (19) a. 'i'i 'íntok yoéme čiba'a' síh-hubá-**ka** síika
 this and man goat urine-smell-SS go.PAST
 ‘Well, this man went on, stinking of goat urine.’ (Dedrick & Casad 1999:389)
- b. 'á'a mé'aa-**ka** mantéka-ta=ne yáa-k
 it kill-SS lard-ACC=1SG.NOM make-PERV
 ‘After killing it, I made lard.’ (Dedrick & Casad 1999:314)
- c. sákobai-m momói káka-si b^wáh-nee-**kai**
 watermelon-PL mature sweet-ADVZ ripe-FUT-SS
 ‘The watermelons are mature, so they can ripen sweetly.’ (Dedrick & Casad 1999:317)

Not only are these clause chains same subject, they also prohibit an overt subject in any of the clauses following the initial clause (Martínez Fabián 2005:183–184), though at least a second-position subject clitic seems to be possible (19b).

There is no evidence one way or another about whether a coordinator can appear in clause chains like (19a–c). However, Martínez Fabián (2005:173) observes that a coordinator becomes possible immediately preceding the main clause when there is more than one marking clause.⁷

⁶ Dedrick & Casad (1999:315–317) advance an alternate analysis of this variation, with consequences for the question of whether tense can occur inside the medial clause. They take the clause chain marker to invariably be pronounced as *-ka*, though it can be followed by *-i*, which they analyze as a “remote stative” tense. This would require examples like (19a–c) to be sequences of independent sentences, which it is not clear they are.

⁷ Martínez Fabián (2005) transcribes the clause chain marker invariably as *-kai*, regardless of its position, for reasons that are unclear.

- (22) Joan tienda-u buite-kai, biba-ta jinu-kai, (**into**) pesio-u
 John store-to run-SS cigar-NNOM.SG buy-SS **and** Hermosillo-DIR
 bicha siika.
 toward go.PAST
 ‘John run [sic] to the store, bought a cigar, and went to Hermosillo.’ (Martínez Fabián 2005:173)

Within Tarahumaran, Choguita Rarámuri also has one clause chain marker *-ka*, which never occurs with tense (e.g., past *-li*). Like its cognate form in Hiaki, it admits either a simultaneous (23a) or sequential interpretation (23b), though it can also convey a causal or manner interpretation, e.g., (23b). These medial clauses are obligatory same subject, with an overt subject only possible in the initial clause of a chain (Gabriela Caballero, p.c.).

- (23) a. we pi=ko ne ku i'sâbi-**ka** ba'hî-ba 'lé ma
 INT just=EMPH INTENS REV rest-SS drink-IRR.PL DUB already
 'òu-sa na pa'tjĩ pa
 fertilize-COND DEM corn CL
 ‘They need to drink while they rest when they finish fertilizing the corn.’
 b. ku'sti-ti=ni wipi'só-**ka** mi'ʔà-ki
 stick-INST=1SG.NOM hit.with.stick-SS kill.SG-PAST.EGO
 ‘I hit it to death with a stick.’ (Caballero, in preparation)

The marking clause frequently occurs preceding the main clause, but it can also follow. In final position, the marking clause event still temporally precedes the main clause event.

- (24) aʔ'li ma=mi baʔ'wí ro'ʔ-è-ma o'hò-sa
 and already=2SG.NOM water pour.APPLIC-FUT.SG dekernel-COND
 a'nâu-**ka** bi'lé ba'ríka
 measure-SS one cask
 ‘When you dekernel it, you pour water, having measured one cask.’ (Caballero, in preparation)

An overt coordinator, *aʔ'li*, can appear between the marking and main clauses in a two-clause chain; there is no evidence about where one might occur in longer chains.

- (25) aʔ'li baʔ'wí 'hua na'sòo-**ka** aʔ'li he ri'ká ta'mò u'tj-è-i
 and water with mix-SS **and** it like.that 1PL.ACC put-APPLIC-IMPERV
 ‘And so, mixing it with water, and then he would put it on us.’ (GFM tx785:2:49.6, Caballero, p.c.)

The other Tarahumaran language, Guarijío, has an inventory of five clause chain markers: three sequential markers and two simultaneous markers.⁸ One sequential marker, *-tóbi* (or *-robi*), admits both same (26a) and different (26b) subjects. An overt subject in the marking clause receives accusative case, at least when it is different subject (26b): it is not clear from the available data whether this is also true when the marking clause is same subject.

⁸ Miller describes a clause chaining system undergoing change; only the contemporary system is described here.

- (26) a. Aš-**tóbi** pao-námina ihpetí=ra kawái piré.
 arrive-SEQ other.side-by.there saddle=REP horse one
 ‘When s/he arrived at the other side, s/he saddled a horse.’
 b. Teurúsio koci-méla nanáwega amó aš-**tóbi**.
 Tiburcio sleep-FUT just 2SG.ACC arrive-SEQ
 ‘Tiburcio will go to sleep just as you arrive.’ (Miller 1996:200)

While *-tóbi* requires close succession between marking and main clause events, a different pair of sequential markers describes more distantly related events: *-sa* for same subject (27a) and *-sao* for different subject (27b). Again, marking clause subjects are in the accusative case, at least when they are different subject (27b).

- (27) a. Ahpo-é ine-rí=ra sinoé, waʔá weri-sí-**sa** tetú.
 3-EMPH be-PAST=REP snake there stop-MOT-SEQ.SS above
 ‘There was the snake, when it stopped up over there.’ (Miller 1996:200)
 b. Yawi-tá=mare=ni kaʔí amó noʔa-**sáo**.
 have.fiesta=POT=MOD=1SG.NOM NEG 2SG.ACC leave-SEQ.DS
 ‘I would have a *fiesta* if you didn’t leave.’ (Miller 1996:201)

All sequential marking clauses can either precede or follow the main clause, though final position seems most common with *-sa* and *-sao*. When one does follow, it describes an event that temporally precedes the main clause event.

For the pair of simultaneous markers, *-ká* (or *-ga*) marks same subject (28a) and *-ori* marks different subject (28b). The subject in different subject marking clauses bears accusative case (28b).

- (28) a. Tohpa-cí cece-**ká** meʔá=ra.
 belly-in bite-SIM.SS kill=REP
 ‘When it bit him in the belly, he killed it.’
 b. Waʔiká tamó ihí-**ori** tawé noʔá-re waʔá-bo caní-ri.
 that.time 1PL.ACC drink-SIM.DS day leave-PAST there-by say-IMPERV
 ‘That day when we were drinking, he said that he left to over there.’ (Miller 1996:199)

These marking clauses tend to precede the main clause, though the inverse order is also attested to a lesser extent.

It is unclear whether clause chaining exists in all Rarámuri varieties. Estrada Fernández & Villalpando Quiñónez (2015:9) do not identify any unique markers of clause chaining in their survey of Rarámuri. For Rochéachi Rarámuri, Morales Moreno (2016:157) identifies a verbal suffix *-ka*, but only as a marker of secondary predication. For Western Rarámuri, Burgess (1984:139–141) identifies a handful of verbal suffixes (*-si*, *-siga*, and *-suga*) which might be implicated in clause chaining, though it is hard to tell from the available description.

10.2.7. Corachol

Corachol includes Cora (Casad 1984:427–430) and Huichol (Grimes 1964:65, Comrie 1982, 1983, Ramos Bierge 2017:66–73).

In Cora, two clause chain markers, *-(a)n* and *-ka*, indicate temporal sequence and simultaneity. At least *-ka* is in complementary distribution with tense (e.g., the past *-ka'a*). While the example in (29a) is same subject and the one in (29b) is different subject, it is not possible to tell whether the two clause chain makers indicate switch-reference or not.

- (29) a. yáa mú u-ve'e-n'á-n m-ahtá wa-tá-ku'uci
 thus 3PL inside-come-arrive-SEQ 3PL-CONJ COMPL-PERV-sleep
 'And thus, having coming back, they went to sleep.' (Casad 1984:427)
- b. t'í'i-k'w'a'a-ká ma-rá-a-t'au
 DISTR-eat-SIM 3PL.NOM-DISTR.SG-COMPL-find
 'They located him while he was eating.' (Casad 1984:430)

Medial clauses are described as “usually” preceding the main clause, a generalization borne out in the available data. An overt coordinator *ahtá* can optionally appear in the main clause (29a).

Huichol has the most extensive clause chaining system in Uto-Aztecan with six markers: four indicate temporal sequence, and two temporal simultaneity. One pair of sequential markers is used when the main clause event is located in the past: *-ka* for same subject (30a) and *-ku* for different subject (30b). An overt subject is possible in each clause of these chains.

- (30) a. taame te-nua-ka, nee ne-petia
 1SG 1SG.NOM-arrive-SEQ.SS.PAST 1SG 1SG-leave
 'When we arrived, I left.' (Comrie 1983:26)
- b. ?uuka nua-ku, nee ne-petia.
 girl arrive-SEQ.DS.PAST 1SG 1SG-leave
 'When the girl arrived, I left.' (Comrie 1983:19)

The second pair of sequential markers is used when the main clause event is located in the future: *-me* for same subject (31a) and *-yu* for different subject (31b).

- (31) a. núa-me pΛ-néci-zéiyáni
 arrive-SEQ.SS.FUT 3SG?-1SG.ACC-see.FUT
 'After [s/he_i] arrives, [s/he_i] will see me.'
- b. núa-yu pΛ-néci-zéiyáni
 arrive-SEQ.DS.FUT 3SG?-1SG.ACC-see.FUT
 'After [s/he_i] arrives, [s/he_j] will see me.' (Grimes 1964:65)

A final pair of markers indicates temporal simultaneity: *-ti* for same subject (32a) and *-kaku* for different subject (32b).

- (32) a. Kuuyeika-ti, nec-uzei.
 walk-SIM.SS 1SG.ACC-see
 'While he_i was walking, he_i saw me.'

- b. Uuki kuuyeikaa-**kaku**, uuka nec-uzei.
 man walk-SIM.DS girl 1SG.ACC-see
 ‘While the man was walking, the girl saw me.’ (Comrie 1982:104)

In the limited data available, the marking clause invariably precedes the main clause, though none of the available descriptions mention linear order.

10.2.8. Summary

The clause chain markers found in the 12 Uto-Aztecan languages surveyed above plus Northern Paiute, which is described in Section 10.3, are gathered in Table 1. The properties of clause chaining for each language are summarized in Table 2. There is only one uniform property found across the entire family: in all languages with morphological tense for which data is available, it cannot occur in a marking clause.

There are also several dimensions of variation across the language family, oriented roughly along a northern-southern axis, the most striking of which are the following:

1. **Marking clause position:**
 Marking clauses exhibit variable order in many languages, though their temporal relation with the main clause remains constant (Numic, Tubatulabal, Takic, Northern Tepehuan, Choguita Rarámuri, Guarijío). In some southerly languages, the marking clause may be more rigidly ordered before the main clause.
2. **Overtness of subject with same subject marking clauses:**
 When the marking clause is explicitly marked as same subject, some languages allow overt subjects in both marking and main clauses (Northern Paiute, Hopi, and Huichol). In other languages (Chemehuevi and Taracahitic), all non-initial subjects are obligatorily, though they may still be cross-referenced by pronominal clitics (as in Hiaki).
3. **Subject case in different subject marking clauses:**
 The subject in different subject marking clauses can receive accusative case in the most northerly languages (Numic and Tubatulabal), as well as in Guarijío. By contrast, everywhere else, it bears nominative case.
4. **Overtness of coordinator:**
 A coordinator is possible in some southerly languages (Taracahitic and Cora); no overt coordinator appears in the other languages, for languages that have one.

It is hard not to notice that some of these properties seem to cluster together. The two Numic languages share properties 1, 3, and 4, though not just with each other. Marking clauses also have a variable position in several other branches of Uto-Aztecan, and marking clause subjects can bear accusative case in at least Tubatulabal and Guarijío. Thus, any division into two or more “types” of clause chaining is difficult, due to how these properties partially overlap.

I turn now to Northern Paiute, which shares these three properties with its Numic relatives. Since its clause chains have been investigated in more detail, Northern Paiute provides a somewhat clearer picture of what their grammatical source might be and how these properties potentially interact with one another. The language also provides a productive starting point for understanding the surface variation attested across Uto-Aztecan.

10.3. Clause chaining in Northern Paiute

Northern Paiute is morphologically tenseless and has a relatively slim inventory of clause chain markers: just one sequential marker *-si* (1a) and one simultaneous marker *-na* (1b).⁹ Besides clause chaining, there are no other dedicated syntactic strategies in Northern Paiute for conveying these temporal relations between clauses. More generally, the only other unambiguous clause combination strategy is deverbal nominalization, which serves to create certain subordinate clauses and relative clauses (Toosarvandani 2011, 2014, Thornes 2012).

While sequential and simultaneous marking clauses can be same subject, as in (1a–b) above, they can also both be different subject, as in (33a–b) below. When different subject, the subjects of both marking and main clauses can be overt (33b); when same subject, the subject of one clause is usually silent, as Northern Paiute is a null subject language.

- (33) a. Uuni-ku pi-no'o mi=tika-u-kwini, ka=kidi kwazi-u-si.
 that.kind-ACC RESUM-with 2/3PL-eat-PERV-PROG ACC=groundhog ripen-PERV-SEQ
 ‘It was with that (we) were eating them, once the groundhog were ready.’ (personal narrative: Nepa Kennedy, “Root-Digging Time”, Tim Thornes, p.c.)
- b. U'itsi'i-su=tiwau ii u=sami-tiki ka usu
 before.yesterday-ADVZ=also 2SG.NOM 3SG=soak-put.SG PART 3SG.NOM
 ini ohopa ka passapi[-na].
 a.lot hard PART dry-SIM
 ‘A couple nights before, you put it in to soak, because it's very hard and dry.’
 (procedural narrative: Thornes 2003: 527)

Marking clauses can either precede (1a–b) or follow (33a–b) the main clause. There is no obvious prosodic difference correlating with marking clause position. Clause chains like (1a–b) and (33a–b) are all characterized by a rising boundary tone after each non-final clause, with a fall at the end of the final clause (whether it is a marking or main clause).

Clause chains in Northern Paiute are, not surprisingly, relatively frequent. In a corpus of 17 published texts (Thornes & Toosarvandani 2020), roughly 32% of all non-fragment sentences were clause chains, while 53% were non-clause chain sentences (see Thornes 2011: 52 for another corpus count of clause chaining).¹⁰ These were found in narratives (both personal and traditional), as well as in a few conversations included in this corpus (though with less frequency). In general, chains were relatively short in length. 75% had just one marking clause, 19% had two, and 6% had three, with only one example of a clause chain with four marking clauses; no longer clause chains were attested. This is unlikely to be due to language contact or attrition. The corpus contained texts recorded across the twentieth century, including by multiple

⁹ The simultaneous suffix is homophonous with a nonsubject and event nominalizer: see Toosarvandani (2016:886–887) for arguments they are syntactically distinct.

¹⁰ I counted 695 sentences total, excluding subclausal fragments. Each was annotated as a clause chain (32%), a non-clause chain (53%), or other (15%). Quotative clauses were counted only if they occurred without an embedding verb; embedded quotative clauses thus do not factor into the count. The residue of other sentences comprised difficult to analyze examples, as well as marking clauses that were transcribed as independent sentences in the original source. (In general, I followed the original transcription for determining sentence boundaries.) Some of these may, in fact, involve nominalizations with a homophonous event nominalizer *-na* (Toosarvandani 2016: 886–887). But some are isolated marking clauses or strings of marking clauses, usually two or three clauses in length. Some of these may belong to an adjacent clause chain, though there is no way of telling this from the original source transcription.

speakers born in the mid-nineteenth century; there was no obvious correlation between clause chain length and the speaker's dialect or generation.

In this corpus, 75% of clause chains had only preceding marking clauses, 21% only following marking clauses, and 4% had one marking clause on either side of the main clause, like (34) below.

- (34) U=nnaka-wai-ku tu'i u=wii-si=du ya'a u=nnaka-wai-ku
 3SG.GEN=ear-LOC-LOC try 3SG.ACC=drop-SEQ=also this.way 3SG.GEN=ear-LOC-LOC
 [u=tsi-tsaga-u] uka huupi **wimmugudui-si.**
 3SG.ACC=IP.sharp.thing-kill-PERV 3SG.ACC stick **make.sharp-SEQ**
 'Right into its ear, when it was born, here into its ear she poked it after she had sharpened
 that stick.' (personal narrative: Edmo 2020: 25)

While (34) involves two sequential clauses, any combination of simultaneous and sequential clauses can appear on both sides of the main clause.

- (35) a. **Oo nimi u=puni-si** u=sakwai=kuha-'yakwi ka
 there people 3SG.ACC=see-SEQ 3SG.ACC=protest-INCEP-HAB PART
tsia-tiy'a'yi-na[...]
hunger-die.SG-SIM
 'So, upon seeing people, (they) would start in crying out, due to hunger[...]' (Martin 2020: 31)
- b. **Yaisi yaga-na** yaisi u=gii-hu ti=pui yaisi poyoa-ga'a yaisi
 PART cry-SIM PART 3SG.ACC=get-PERV LOGO=eye PART trot-MOT PART
 ohomanai kai iwi-hu **ti=pui-kwai** **u=yigwi-ku-hu-si.**
 dash NEG DEM-EMPH LOGO=eye-LOC 3SG.ACC=do-PROSP-PERV-SEQ
 'Then (he) crying then (he) got them, his eyes, and trotted away and then ran off
 without placing them in his eye sockets first.' (C. Louie 2020: 54)

In general, multiple marking clauses were more frequent when they preceded the main clause (26%). Multiple following marking clauses were more rare (only 13%), and they never exceeded two in number, as in (36).

- (36) Kadu'u naana ummu nimi-noo-ti mommoko'ni=ssimi pii
 nothing men 3PL 1PL.EXC-with-LOC women=only RESUM
 oo-ti=u **puku-gaa-na** **tihona-na.**
 there-LOC=EMPH horse-have-SIM dig.roots-SIM
 'There were no men with us, only women by themselves on horses digging (roots).'

The brevity of clause chains in Northern Paiute seems to set it apart from other languages. While Sarvasy (2015) reports that the average clause chain in the Papuan language Nungon is 3–4 clauses — not so different from Northern Paiute — the longest chain recorded is 22 clauses.

Clause chains can convey pure temporal succession or overlap, as in the examples above. But they can also express additional types of relations between clauses, including causal, as in (37a),

purpose (37b), conditional (37c), and counterfactual (37d) relations (Thornes 2003: 460–462, 2011: 52).

- (37) a. Yaa hibbi tibbi-ma kati pita-ga, su=naatsi'i u-ma
 DEM thing rock-LOC sit.DUR below-DUR NOM=boy 3SG-LOC
 si'e-hu-si.
 get.scared-PERV-SEQ
 'The boy went to sit on the rock because he got scared of it.' (prompted narrative: EM, BP25-2-t1, 86)
- b. Yaisi su=Wassa, imi u=ddiikwi'i, "Uhu su=Padua'a
 then NOM=crane 3PL 3SG.ACC=say.IMPERV PART NOM=bear
 ni=naki, ni=patsa-kwi-si," mii yaisi.
 1PL.EXC.ACC=chase.IMPERV 1PL.EXC.ACC=kill-PROSP-SEQ QUOT then
 'They said to the Crane, "The Bear is chasing us in order to kill us."' (traditional narrative: MS, BP43-1-t1, 20)
- c. Yaisi ti-ggwitima-di yaisi nimmi uka tibina-na, yaisi imi
 then APASS-close-NOMZ then 1PL.EXC.NOM 3SG.ACC ask-SIM then 3PL
 kai ti-ini-tu hani-na, o=ddamanaka-kwi=ggaisu oi mii.
 NEG APASS-say-LOC do-SIM 3SG.ACC-pay.for-PROSP=MOD there QUOT
 'We asked the policeman, and he said if they don't do what they say, they will pay for it.' (personal narrative: MS, BP32-9-t1, 10)
- d. Usu hudzi'i=gaa=kaa, u=pa-tuki-ki-si ikaa,
 3SG.NOM sagehen=MOD=MOD 3SG.ACC=IP.water-quench-APPLIC-SEQ DEM.ACC
 ika=u tiipi-guba-ti ika kadu'u na-bida-di.
 DEM.ACC=EMPH earth-upon-LOC DEM.ACC nothing PASS-make.fire-NOMZ
 'That sage hen, if she had let the fire go out, then there would have been no fire burning on this earth.' (traditional narrative: Snapp 2020: 114–115)

To express purpose, a prospective aspect suffix is added inside the sequential clause (37b), and to express a conditional or counterfactual meaning additional modal particles are needed (37c–d). But in the case of a cause-effect relation, as in (33a), no further lexical material needs to be added.

The subject of the marking clause can appear in nominative case (33a) or accusative case (33b), and this is not correlated with whether it is same subject or different subject (additional examples show this in Section 10.5). In fact, there is no clear evidence of switch-reference marking in Northern Paiute at all, though it is sometimes characterized this way (Jacobsen 1983: 159, McKenzie 2015: 414). The only plausible candidate is a formative *ka*, which can appear in clause chains, as well as in other environments when the subject exhibits disjoint reference (Thornes 2003: 277–278, 461–463).

- (38) Hi ka i=tuami tamma-kwi-na umi oi-'yu-na
 2SG.NOM PART 2SG.GEN=children leave-PROSP-SIM 3PL DEM-LOC-LOC
 nobi-wai-'yu-na tui-hau-tui ma'na'wi-na...
 house-LOC-LOC-LOC ever-how-ever act-SIM
 'If you leave your children behind, to stay at home, they get into mischief (behave just any old way)...' (personal narrative: Thornes 2003: 462)

However, as Thornes points out, this formative can be analyzed in a number of different ways: among them, as an accusative case proclitic, a plausible analysis for (38), and as verbal inflection indicating aspect or motion, relevant for other putative examples. Importantly, even if *ka* was a switch-reference marker, it would not be an obligatory one.

In the remainder of this chapter, I develop a formal account of clause chaining in Northern Paiute which can account for two properties: the position and interpretation of marking clauses (Section 10.4) and the case of the making clause subject (Section 10.5). While this cannot be directly applied to clause chaining in other Uto-Aztecan languages, due to the significant variation that is attested, there are likely some grammatical ingredients that are shared. While my main focus will be Northern Paiute, I will point these out along the way.

10.4. Marking clause position and interpretation

A marking clause in Northern Paiute can precede or follow the main clause, as shown above, though its temporal relation to the main clause does not change. This is most clear with sequential clauses, which still describe an event that *temporally precedes* the main clause even when they linearly follow it.

- (39) “Usu taka tiwao **koi-kwi** ka **piti-u-si,**” mii tia’a.
 3SG.NOM 1DL.ACC also **kill.PL-PROSP** PART **arrive-PERV-SEQ** QUOT thusly
 “‘She [the mother bear] will kill us, too, when she arrives,’ so they said.’ (traditional narrative: Thornes 2003:493)

In (39), this non-iconic temporal order comes without any implied cause-effect relation — the mother bear does not kill them *because* she arrives — though a causal relation is possible in other clause chains. In (37a) above, for instance, the final sequential clause event is understood as the cause of the main clause event. In (33b), a final simultaneous clause has a parallel causal relation to the main clause. These cause-effect relations must be inferred pragmatically, since there is no lexical material is added.

The formal analysis developed below derives the constant temporal interpretation of marking clauses through the combination of two grammatical components: (i) clause chains have an asymmetric clausal coordination structure, with a phonologically null conjunction, in which (ii) each marking clause contains a relative tense, either present or past, which allows it to be related semantically to another clause in the chain (cf. Foley 2010). The interpretation of clause chains is further enriched pragmatically to give rise to the causal relations attested when a marking clause follows the main clause, as in (37a) or (33b) above. I will present this analysis here in relatively informal terms: for more technical details, see Toosarvandani (2016).

10.4.1 Asymmetric coordination

In this account of clause chaining in Northern Paiute, the sentence type has a clausal coordination structure with phonologically null conjunction:

- (40) **Syntax of clause chains in Northern Paiute (initial marking clause(s))**
 [[[s NP ... V-SEQ/-SIM] &] [[s NP ... V-SEQ/-SIM] &] [s NP ... V]]

The main argument for this comes from extraction. If marking clauses were introduced by a subordinator, movement from just the main clause should be possible; but it is not (41a). Instead, extraction happens across-the-board, in parallel from each coordinate (41b), just as in canonical coordination structures.

- (41) a. ***Haga** su=miitsi-'yu nana tiba tika-na, su=tiitsi-'yu
 who NOM=short-NOM man pinenut eat-SIM NOM=little-NOM
 naatsi'i ___ mutuhe'e?
 boy kiss.IMPERV
 Intended: 'Who, while the short man was eating pinenuts, did the little boy kiss?'
 (elicitation: Toosarvandani 2016:855)
- b. **Himma** nii ___ tika-na, yaisi su=naatsi'i=bino'o ___ tika?
 what 1SG.NOM eat-SIM then NOM=boy=also eat
 'What, while I eat it, does the boy eat, too?' (elicitation: Toosarvandani 2016:857)

Northern Paiute lacks overt clausal coordinators, so the conjunction is never expected to be pronounced in a clause chain. However, closely-related Timbisha does possess an overt clausal coordinator, but it is not found inside clause chains, as shown in (2–4) above. If clause chaining in Timbisha also has a coordination structure, this would have to involve a special asyndetic conjunction.

Importantly, under the analysis in (40), clause chains have an asymmetrical structure, with the coordinator forming a constituent with the marking clause (cf. Ross 1967:90–91, Munn 1993:14–23). Since this makes them structurally identical to subordination structures, the extraction pattern in (41a–b) would have to have a non-syntactic source (else, subordinations should behave identically). In fact, the grammatical constraint underlying the extraction restriction on coordination structures (that is, the Coordinate Structure Constraint) has been argued to have a semantic or pragmatic source (Lakoff 1986, Munn 1993, Kehler 2002, Kubota & Lee 2015). There are well-known exceptions to the ban on extraction from just one coordinate, when the coordinates do not have a parallel interpretations in some sense.

If clause chains have an asymmetric coordination structure, the variable position of marking clauses in Northern Paiute is not entirely unexpected. Just as a conditional or temporal adjunct clause can combine to the left or right of the main clause, the marking clause introduced by the null conjunction is predicted to be able to combine to the left or right of the main clause. In final position, there would be more than one possible structural position for marking clauses: they could combine with a full clause or with just a verb phrase, as adjunct clauses do (Iatridou 1991). There is evidence, however, that coordination is at the clausal level, as depicted schematically in (42).

- (42) **Syntax of clause chains in Northern Paiute (final marking clause):**
 [[s NP ... V] [& [s NP ... V-SEQ/-SIM]]]

A full NP subject in a final marking clause can corefer with the subject of the main clause, as in (37a). Thus, to satisfy Condition C, the two clauses would have to combine at the sentential level. Marking clauses also coordinate at the clausal level when they precede the main clause. High clausal negation (located above the subject) can take scope in either clause in a chain (43a–b) (Thornes 2011: 53).

- (43) a. **Kai** su=tiitsi-'yu naatsi'i yaga-na, nii
 NEG NOM=little-NOM boy cry-SIM 1SG.NOM
 o=ddika-ggi-kwi.
 3SG.ACC=eat-APPLIC-IRR
 'When the little boy is not crying, I will feed him.'
- b. Su=tiitsi-'yu naatsi'i iwi-na, **kai** su=mogo'ni mia-hu.
 NOM=little-NOM boy sleep-SIM NEG NOM=woman go-PERV
 'While the little boy was sleeping, the woman didn't leave.' (elicitation:
 Toosarvandani 2016: 858)

In Northern Paiute, then, it is always full clauses that are chained, though the size of coordinates could be one locus of variation within Uto-Aztecan.

In Hiaki and Choguita Rarámuri, marking clauses are always same subject, and the subject in all but the first clause in a chain is obligatorily missing. This would be expected if clause chaining in these languages involves coordination of verb phrases, as in Keine's (2013) account of switch-reference: the main and marking "clauses" would simply share a single subject.¹¹

10.4.2. Relative tenses in marking clauses

In this account of clause chains in Northern Paiute, part of their interpretation comes from the simultaneous and sequential markers: these are analyzed as *relative tenses*, which relate the time of the marking clause to the time of another clause in a chain (cf. Foley 2010:44–45). The main argument for this is morphological.

While Northern Paiute is morphologically tenseless, it has a "general tense" suffix *-ti*, which is the fossilized remnant of a nonfuture tense (cf. the present tense in Tubatulabal). This appears obligatorily after certain verbal suffixes, such as the applicative suffix, in independent sentences (and the main clause of a clause chain). The sequential and simultaneous suffixes are in complementary distribution with the "general tense" suffix.

- (44) Su=naatsi'i na-dika-ggi(*-ti)-na, yaka.
 NOM=boy PASS-eat-APPLIC-GENL-SIM cry.IMPERV
 'While the boy is being fed, he cries.' (elicitation: Toosarvandani 2016:862)

This suggests that the sequential and simultaneous suffixes are tenses which have survived inside clause chains in Northern Paiute, while tense has been lost in all other environments. The other Numic languages make this point even more clearly: both Timbisha and Chemehuevi have true tenses, and these, too, cannot appear with clause chain markers: see Section 10.2.1.¹²

If the clause chain markers encode relative tense, the simultaneous suffix would be a relative present tense, while the sequential suffix would be a relative past tense. Unlike an *absolute* tense, a relative tense locates a situation with respect to not the utterance time, but another time of

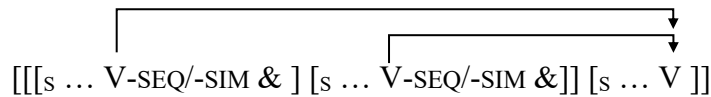
¹¹ This analysis would have to be made consistent with two facts. Negation can also take scope just within the main clause in Hiaki (Dedrick & Casad 1999:315), though it is not clear that this is clause-initial negation. In addition, a subject pronoun can appear inside the main clause, as shown for Hiaki in (19b) above, though it is a second-position clitic and does not occupy canonical subject position.

¹² This is also true for Mono (Lamb 1957:282), Northern Paiute's closest Numic relative, though it is not surveyed here.

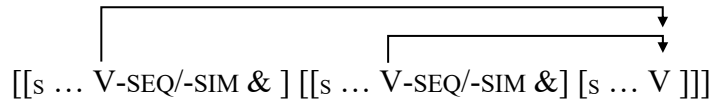
evaluation (Comrie 1985:56–82). In biclausal chains, this time would be provided by the main clause. Typically, relative tenses only occur in subordinating contexts (e.g., complement clauses or relative clauses). In an asymmetrical coordination structure, it would be the coordinator which creates an embedding environment and serves to license the clause chain markers.

For longer chains, this account predicts that the simultaneous and sequential markers only entail a temporal relation between each marking clause and the main clause. Whether marking clauses are coordinated with each other, as in (45a), or each marking clause is independently coordinated with the main clause, as in (45b), the result is the same: each marking clause only stands in a semantic relation to the main clause (for detailed semantic calculations, see Toosarvandani 2016: 876–879).

(45) a. **Marking clauses coordinated with each other:**



b. **Marking clauses coordinated with the main clause:**



Importantly, however, these temporal relations do not exhaust the meaning of a clause chain: the marking clauses can still be related to another by additional pragmatic relations, inferred by language users, as discussed in Section 10.4.3.

While perhaps a surprising result, there are two pieces of evidence that only a temporal relation between each marking clause and the main clause is part of the necessary meaning of a clause chain. First, when a simultaneous clause follows a sequential clause, the events described need not be temporally sequenced. In (46), the speaker has a pulling instrument *at the time* that the dogs find the groundhog (as well as when they hook its mouth).

- (46) Yaisi oo čaisi mi=toogi oo **ti-mayi-u-si** kidi oo yaisi
 PART DEM then PL=dog DEM APASS-find-PERV-SEQ groundhog DEM PART
 oo'no nimmi tsanu uuniku **hii-čaa-na** u-ma=u nimmi
 DEM 1PL.EXC.NOM gaff that.kind.ACC **thing-have-SIM** 3SG-INS=EMPH 1PL.EXC.NOM
 ka u=tippa-wai-ku u=tsanu'yu-yakwi ka=mi=kidi.
 PART 3SG.GEN=mouth-LOC-LOC 3SG.ACC=pull.fast-HAB ACC=PL=groundhog
 'Then, so those dogs, having found a groundhog there, and at the time we had a pulling
 instrument (gap), that kind, and using that, we would hook it in its mouth, the
 groundhog.' (personal narrative: Kennedy 2020: 85)

Second, a sequential clause, while always interpreted as temporally preceding the main clause, can temporally overlap another sequential clause. In (47), for instance, the Coyote is soaking when he emerges from the water as well as when he has gotten out onto the bank.

- (47) Su=Idza'a yaisi ka=oi, oi-'yu **pa-tsibui-si,** ini
 NOM=coyote then ACC=DEM DEM-from IP.water-emerge-SEQ INT

sami-si yaishi oo paa-kimaba-tu **mia-si** oo **na-pasa-ki-ti**.
soak-SEQ then DEM water-beside-to **go-SEQ** DEM **PASS-dry-APPLIC-GENL**
 ‘Then the Coyote was in there, and came out of the water, and (he) was really soaked,
 and so, having gone out onto the bank, dried himself off.’ (traditional narrative: M. Louie
 2020: 69)

This can also be shown more directly: speakers judged both the clause chains in (48a–b) as true in a context where the marking clause events are temporally overlapping.¹³

(48) Context: The boy and girl are at home. Instead of studying, he is playing and she is dancing at the same time. They both stop before their mother comes home.

a. Su=naatsi’i **ti’iatia-hu-si**, su=tsia’a **niga-hu-si**, su=mogo’ni
 NOM=boy **play-PERV-SEQ** NOM=girl **dance-PERV-SEQ** NOM=woman
 nobi-ggwe **iga-hu**.
 house-LOC **enter-PERV**

‘After the boy played and the girl danced, the woman came home.’

b. Su=tsia’a **niga-hu-si**, su=naatsi’i **ti’iatia-hu-si**, su=mogo’ni
 NOM=girl **dance-PERV-SEQ** NOM=boy **play-PERV-SEQ** NOM=woman
 nobi-ggwe **iga-hu**.
 house-LOC **enter-PERV**

‘After the girl danced and the boy played, the woman came home.’ (elicitation: Toosarvandani 2016: 878)

Thus, while marking clauses may be related to one another and the surrounding discourse by additional pragmatic inferences, they are only related semantically to the main clause.¹⁴

In other Uto-Aztec languages, clause chain markers may not be related to tense at all. In Hiaki and Choguita Rarámuri, if clause chains involve coordination of verb phrases, as discussed in Section 10.4.1, marking clauses and the main clause could share a tense, and the clause chain marker might instead be analyzed as an aspect. Dedrick & Casad (1999:312–315), in fact, treat it as an imperfective aspect which “highlights the durativeness cohering to particular situations, as well as to background the entire situation.” This raises the question of why this aspect would be

¹³ These elicited examples also allow us to make sure this interpretation is available when the subject bears nominative case. When the subject is null, as in (47), it may be that the marking clause is interpreted like an accusative-subject marking clause, as discussed in Section 10.5.

¹⁴ There is a prediction of this account which I have not been able to test. A sequence of a simultaneous clause followed by a sequential clause should require the simultaneous clause to overlap the main clause event, even if the event described by the sequential clause precedes it. Clause chains with this configuration and interpretation are not hard to find:

- (i) Taiwa-no oi **iwi-tabi-na**, yaishi su=Tuhu’u yaishi, ka=una-’yu ka **u=puni-si**
 all.day-LOC DEM **sleep-lie-SIM** then NOM=wildcat then ACC=out.there-from PART 3SG.ACC=**see-SEQ**
 u-mati u-ba **pitti**.
 3SG-LOC 3SG-by **arrive.IMPERV**
 ‘All day he [the Coyote] lay in there sleeping then, and the Wildcat saw him from somewhere where he was coming then, arrived by him (where he was lying asleep).’ (traditional narrative: Louie 2020: 70)

In (i), the Coyote is understood as still asleep when the Wildcat arrived at his location. Whether this is a necessary inference remains to be seen (though the added parenthetical to this effect in the translation suggests it is).

restricted just to clause chains, if it indeed is. In Northern Paiute, the simultaneous and sequential markers, as relative tenses, occur in “embedding” environments, which includes asymmetrical coordination structures.

Even in Northern Paiute, the clause chain markers may, in fact, encode a combination of tense and aspect. Both can occur with some overt aspectual categories: the simultaneous suffix can occur with the progressive *-winni* (49a), and the sequential suffix can occur with it and the perfective *-hu* (49b–c).

- (49) a. Su=naatsi'i ti=kaadzi madabbui(-winni/*-hu)-na, yaisi hubiadu-winni.
 NOM=boy REFL=car fix(-PROG/-PERV)-SIM then sing-PROG
 ‘While the boy is fixing his car, he is singing.’ (elicitation)
- b. Su=nana ti=kaadzi madabbui(-hu)-si, yaisi
 NOM=man REFL=car fix-PERV-SEQ then
 u=ddza-kana-ggi-hu.
 3SG.ACC=IP.fingers-grab-APPLIC-PERV
 ‘After the boy fixed his car, he started it.’ (elicitation)
- c. Ti=kaadzi madabbui(-winni)-si, yaisi sonapina-pinini.
 REFL=car fix-PROG-SEQ then take.break-STAT
 ‘After the boy was fixing his car, he took a break. (elicitation: Toosarvandani 2016:867–868)

However, when there is no overt aspectual suffix, simultaneous clauses still receive an imperfective interpretation (49a). Sequential clauses, by contrast, can be interpreted as either perfective (49b) or imperfective (49c). The possible imperfective interpretation of sequential clauses is evident more directly when the main clause entails that the marking clause event is still ongoing.

- (50) Su=naatsi'i ti=kaadzi madabbui-si, yaisi tiggwisu u=madabbu'i.
 NOM=boy REFL=car fix-SEQ then still 3SG.ACC=fix.IMPERV
 ‘The boy was fixing his car, and he is still fixing it.’ (elicitation: Toosarvandani 2016:868)

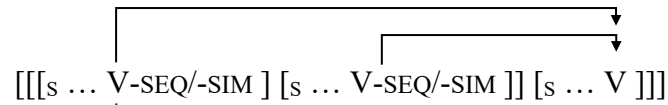
The sequential and simultaneous suffixes thus might encode very general aspectual categories, alongside relative tense, which can be further specified by aspectual markers like the progressive, as in (49a) and (49c). These aspectual values for simultaneous and sequential clauses have consequences for how clause chains are interpreted in a discourse.

10.4.3. Pragmatic inferences in clause chains

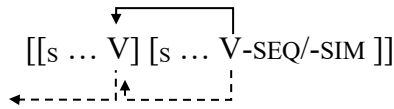
When a marking clause follows the main clause, it can be understood as *causing* the main clause event, as shown in (37a) for sequential clauses and (33b) for simultaneous clauses. For marking clauses that precede the main clause (and have nominative subjects), no such cause-effect relation is possible, only a temporal relation of succession or simultaneity, as in (1a–b).

This follows from how clause chains are interpreted in a discourse, when combined with the syntax and semantics above. The simultaneous and sequential markers, as relative tenses, need only encode a conventional (entailed) relation between the marking clause and the main clause, as depicted by the solid arrows in (51a–b), regardless of the position of the marking clause.

(51) a. **Marking clauses in initial position:**



b. **Marking clause in final position:**



However, the sentences in any discourse are not, in general, interpreted in isolation. They are *contextually anchored* to the preceding discourse, through anaphora or another inferential process (e.g., Kamp & Rohrer 1983, Partee 1984, Mann & Thompson 1988, Kehler 2002, Asher & Lascarides 2003). As part of this process, language users are able to infer a variety of temporal, causal, and other relations between a sentence and a previously uttered sentence. These pragmatic relations are also inferred from each clause in a chain and a preceding clause, as depicted by the broken arrows in (51a–b).

In discourse coherence theories (e.g., Mann & Thompson’s Rhetorical Structure Theory, Kehler’s theory, or Asher & Lascarides’ Segmented Discourse Representation Theory), the inferences that are possible depend on the inventory of *coherence (or rhetorical) relations* that are available. While these differ depending on the theory, there is agreement about the existence of a forward-moving relation of close temporal succession, which characterizes the canonical iconic interpretation of narratives (Asher & Lascarides’ *Narration*); a relation of temporal simultaneity for backgrounded information (*Background*); and a non-iconic cause-effect relation (*Explanation*). In any given discourse, whatever relations are inferred must be compatible with the entailed content of sentences, as well as world knowledge.

In narratives, for instance, a perfective sentence is usually interpreted as temporally succeeding a previous perfective sentence (a *Narration* relation). In (52), for instance, the scolding event is understood as temporally following the entering event. By contrast, stative and imperfective sentences receive a temporally overlapping interpretation as the default instead (a *Background* relation): in (52), the playing event is understood as temporally overlapping the entering event.

- (52) Su=mogo’ni nobi-ggwe **iga-hu.** Su=naatsi’i **ti’atia-winni.** Su=mogo’ni
 NOM=woman house-LOC **enter-PERV** NOM=boy **play-PROG** NOM=woman
 u=**haa-hu.**
 3SG.ACC=**scold-PERV**
 ‘The woman came into the house. The boy was playing. The woman scolded him.’
 (elicitation: Toosarvandani 2016:880)

These same relations are inferred between the clauses in a chain. In (46) above, the medial simultaneous clause is interpreted as temporally overlapping the preceding sequential clause because it describes a state (having a pulling instrument); meanwhile, the main clause event (hooking the groundhog’s mouth) is interpreted as closely succeeding the event in the narrative described by the initial sequential clause (finding the groundhog).

The contextual anchoring of marking clauses (with nominative subjects) to the preceding discourse, just like independent sentences, is demonstrated directly by the infelicity of the clause chain in (53). The state of there being wood left cannot be interpreted as temporally overlapping the fire-making event, given how the world works.

- (53) Nii pida-hu. #Su=kuna kado'o-na, nii ka=kutsu
 1SG.NOM make.fire-PERV NOM=wood nothing-SIM 1SG.NOM ACC=meat
 tinoho.
 roast.IMPERV
 Intended: 'I made a fire. When there was no wood left, I roasted the meat.' (elicitation: Toosarvandani 2016:883)

A discourse parallel to (53), in which every clause is independent, is also infelicitous in Northern Paiute, indicating that the initial marking clause is linked to the preceding context in the same way. This can be contrasted with temporal adjunct clauses, as in the felicitous English translation in (53), which are more loosely related to the preceding discourse (Partee 1984).

Returning to marking clauses in final position, the causal relation they can stand in to the preceding clause, as in (33b) and (37a) above, follows from the analysis in (51). When a marking clause precedes the main clause, as in (51a), it is contextually anchored to the preceding clause (whether another marking clause or in another sentence), while still being related semantically to the (following) main clause. But when a marking clause follows the main clause, (51b), it is both semantically and pragmatically linked to the main clause. Thus, if this is a sequential clause, as in (37b), the marking clause event will necessarily temporally *precede* the main clause event, due to the semantics of the sequential marker (as a relative past tense). Since this is not compatible with a forward-moving interpretation (*Narration*), one possible way of pragmatically connecting the final sequential clause to the main clause is as involving a non-iconic cause-effect relation (what Asher & Lascarides call *Explanation*), as in the following English discourse: *Max fell. John pushed him.*

Under this account, when a marking clause follows the main clause, there is no relation established between it and any earlier marking clauses. Indeed, it can plausibly precede or follow it, as in (34) above, or overlap it, as in (54) below.

- (54) Usu oo yodzi-gi-na ti=bbia pui kwii-huka
 3SG.NOM there fly.off-toward-SIM LOGO=friend eye carry-INCEP.IMPERV
 o-tugu-ba-tu o=wine-hu-si.
 3SG-through-LOC-LOC 3SG.ACC=throw-PERV-SEQ
 'He came flying in and caught his friend's eye in the air, after he threw it.' (traditional narrative: Miller 2020: 140)

Rather than being related to the initial simultaneous clause, the throwing event described by the final sequential clause in (54) is understood as temporally and causally related only to the catching event.

The analysis in (51) might, finally, offer an explanation for why clause chains are so short in Northern Paiute. Since each marking clause imposes a semantic relation with the main clause, much like a temporal subordinate clause, every additional marking clause adds another, even

longer-distance temporal dependency with the main clause. The complexity of these dependencies could interfere with the comprehension or production of longer clause chains.

10.5. Subject case alternation in marking clauses

The subject of a marking clause can bear accusative case in Northern Paiute, as in several other Uto-Aztec languages (Timbisha and Chemehuevi in Numic, as well as Tubatulabal and Guarijío). This is possible for the subject of both simultaneous (55a) and sequential (55b) clauses.

- (55) a. ...o=namayaki-ka-si, ka=tiba. Saa'a
 3SG.ACC-stir-STAT-SEQ ACC=pinenut later
 o=agi-hu-si=bino'o, yaishi eho-gga-na,
 3SG.ACC=open-PERV-SEQ=PART then pinenut.hook-have-SIM,
 udi-ggu kudu'u-gga-na, o-ma-ma yaishi=siku agi-na
 long-ACC stick-have-SIM 3SG-INSTR-LOC then=PART open-NOMZ
 wota'ni.
 shake.IMPERV
 '...you stir them around, the pinenuts. Later, when they have opened up, you have a
 pinenut hook, a long stick, and you shake out the open ones with it.' (procedural
 narrative: MS, BP09-1-t4, 20–22)
- b. Oo u-ma-ku pisa=tia'a ka=yuu. Umi tua-ki
 so 3SG-LOC-LOC become.good=thus ACC=like.this 3PL.ACC child-PL
 u-ma-tu na'a-na uu uka u=su-hani
 3SG-LOC-LOC grow-SIM like.that DEM.ACC 3SG.ACC=IP.mind-do
 oo pisa tia'a.
 DEM good thus
 'Thus from that, they learn good things. The children grow up to be like that, and
 want to do what is good.' (personal narrative: Nepa Kennedy, "Youth, Then and
 Now", Tim Thornes, p.c.)

Whether the marking clause subject has nominative or accusative clause does not correlate with whether it is same subject or different subject (Thornes 2003:463–464): compare (55b) with (47) for same subject, and (55a) with (38) for different subject.

There is no evidence that these clause chains are structurally different from nominative-subject marking clauses (they can contain a full NP subject and high negation). Yet they do not exhibit some of the canonical properties of coordinations. First, while nominative-subject marking clauses allow across-the-board movement, as in (41b) above, this is more difficult for accusative-subject marking clauses.

- (55) ??Himma ____ i=dika-na, yaishi su=naatsi'i=bino'o ____ tika?
 what 1SG.ACC=eat-SIM then NOM=boy=PART eat
 Intended: 'What, when I eat it, does the boy eat, too?' (elicitation: EM, BP39-2, 44:55)

In addition, while nominative-subject marking clauses prohibit cataphoric reference (56a), accusative-subject ones permit it (56b).¹⁵ The same pattern is also found with the long-distance reflexive (logophoric) possessive anaphor *tɪ*=. It cannot be bound from the main clause in a nominative-subject marking clause (57a), but it can be in an accusative-subject one (57b).

- (56) a. ***Usu_i** kati-na, su=mogo'ni_i tini'a.
 3SG.NOM sit-SIM NOM=woman read.IMPERV
 Intended: 'She_i is sitting, and the woman_i is reading.' (elicitation: EM, BP47-10, 2:08)
- b. **U_i=ggati-na**, su=mogo'ni_i tini'a.
 3SG.ACC=sit-SIM NOM=woman read.IMPERV
 'While she_i is sitting, the woman_i is reading.' (elicitation: EM, BP47-10, 3:11)
- (57) a. ***Tiitsi-'yu** **tɪ=**ddoogga wohi-na, su=naatsi'i_i kai i'wi.
 little-NOM **LOGO=**dog bark-SIM NOM=boy NEG sleep.IMPERV
 Intended: 'When his_i dog barks, the boy_i can't sleep.' (EM, BP40-4, 15:48)
- b. **Tiitsi-ggu** **tɪ=**i ddogga wohi-na, yaisi su=mogo'ni_i kai pisa
 little-ACC **LOGO=**dog bark-SIM then NOM=woman NEG good
 i'wi-'yu.
 sleep.IMPERV-IMPERV
 'When her_i little dog barks, the woman_i can't sleep.' (elicitation: EM, BP41-1-s8)

While this is perhaps surprising at first, there are unequivocal coordination structures in English and other languages that fail to show some typical coordination behaviors.

In conditional coordinations — coordinations with *and* which have the meaning of a conditional — cataphoric reference is permitted, e.g., *Another picture of him_i appears in the paper, and John_i leaves forever* and across-the-board movement is prohibited (Culicover & Jackendoff 1997). This kind of mismatch is, in fact, expected if the constraints on movement out of coordinations are semantico-pragmatic, rather than syntactic (see Section 10.4.1), and if pronominal reference is conditioned by discourse structure (Kehler 2002, Asher & Lascarides 2003).

From this perspective, the unexpected properties of accusative-subject marking clause might ultimately be linked to how they fit into the surrounding discourse context. Accusative-subject marking clauses do not seem to be contextually anchored to the preceding discourse in the same way that nominative-subject marking clauses are. While in (53) above, the nominative-subject marking clause is infelicitous, because it can only be interpreted as temporally overlapping the preceding sentence, its accusative-subject counterpart in (58) is felicitous.

- (58) **Ni̱** pida-hu. **Ka=kuna** **kado'o-na**, **ni̱** ka=kutsu
 1SG.NOM make.fire-PERV **ACC=wood** **nothing-SIM** 1SG.NOM ACC=meat
 tinoho.
 roast
 'I made a fire. When the wood was gone, I roasted the meat.' (elicitation: EM, BP44-3, 10:20)

¹⁵The accusative-marked pronoun in (48) is a clitic, while the nominative-marked one is not. It is not entirely clear whether this should matter for the possibility of cataphoric reference.

While a complete analysis is not possible here, this suggests that these accusative-subject marking clauses are related solely to a following clause, both semantically, by the simultaneous or sequential marker, and pragmatically.

Thornes (2003: 463) observes that, when the subject bears accusative case, as in (59b), a sequential clause is often related both temporally and causally to a following main clause; by contrast, when it bears nominative case, as in (59a), there is only a temporal relation.

- (59) a. **Usu nana pidi-si,** usu moko'ni mia-u.
 3SG.NOM man arrive-SEQ 3SG.NOM woman go.SG-PERV
 'When that man came, that woman left.'
- b. **Ka=nana pidi-u-si,** su=moko'ni mia-u.
 ACC=man arrive-PERV-SEQ NOM=woman go.SG-PERV
 'Because the man came, the woman left.' (elicitation: Thornes 2003: 436)

While this may be true for some cases, it does not hold generally: in (55a) above, for instance, there is no causal relation between the accusative-subject marking clause and the immediately following clause (the pinenuts' opening does not *cause* the speaker to have a pinenut hook). Nonetheless, the accusative-subject marking clauses in this and other examples seem to provide the background for the event described by the following clause, even if this does not always involve a cause-effect relation.¹⁶

It remains to be seen whether similar discourse-related effects are found in the other languages with accusative-subject marking clauses. There are some potentially important differences between these languages and Northern Paiute. While Northern Paiute exhibits a case alternation, the descriptions for Timbisha, Chemehuevi, and Tubatulabal only mention the possibility of accusative case in different subject marking clauses. These languages also seem to prohibit more than one overt subject in a same subject clause chain, a configuration that is possible in Northern Paiute, e.g., (35b).

10.6. Conclusion

While this survey has been limited by the available documentation and the degree to which it can be interpreted, it has uncovered some potentially important dimensions of variation. To start, inventories of clause chain markers vary in number: one in Hiaki and Choguita Rarámuri to six in Huichol. Beyond this morphological variation, there is substantial syntactic variation involving the positioning of marking clauses, whether a subject can appear overtly, and the case that marking clause subjects can bear.

Northern Paiute offers one perspective on this diversity. The crucial ingredients in the analysis of clause chaining in the language involve coordination, tense and aspect, and general pragmatic processes which shape the interpretation of discourses. At the same time, since Northern Paiute does not have switch-reference marking, we have not been able to say anything about this property of clause chaining, which appears robustly elsewhere in Uto-Aztecan, or how it interacts with any other grammatical components of clause chaining.

While this chapter has raised many questions, I hope it has also served to bring clause chaining into sharper focus, both in Uto-Aztecan and more generally. This construction has

¹⁶ This would require there to be coherence relations like *Background* or *Explanation* that are "forward-looking" (see Mann & Thompson 1988 and Asher et al. 2007 for relevant discussion).

exercised formal theorists in part because it seems to combine properties of coordination and subordination. But as the account of Northern Paiute suggests, this tension might be resolved if, rather than attributing them to primitive categories, these properties are separated out into distinct syntactic, semantic, and pragmatic components. Future investigations of other Uto-Aztecan languages will hopefully reveal more about how these linguistic pieces can go together to build clause chains.

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