Temporal interpretation and discourse structure in Northern Paiute

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1 Introduction

- English, like many languages, can mark temporal relations with adverbial subordinators like before and after:

(1) a. Max fell before John pushed him.  falling < pushing
   b. Before John pushed him, Max fell.  pushing > falling

- Northern Paiute (Uto-Aztecan, Numic: western United States) lacks such specific temporal subordinators and perhaps subordinators in general, except for a quotative marker.

- Thornes (2003:456) says that, when si '… marks the verbs of subordinate clauses that code events that temporally precede another event.'

- While many instances of the sequential morpheme satisfy this description, there are counterexamples:

(4) . . . ka=papab-a ggu-na-ggwe-tu hann-gwine=e ka=tiba timma-ke-tu hani-si. OBJ=boy=PTC 3SG-LOC property-LOC LOC do-SEQ
   '…you take the bigger pieces out and set them aside, then the pine nut goes into the sifting basket.' (procedural narrative, MS, BP09-1:14:51)

(5) Yaa habbi tibi-ma ka ti-psta-ga su=nama’ti u-ma si’e-hu-si. there PTC rock-LOC LOC do-sit below-LOC NOM=boy 3SG-LOC property-LOC-SEQ
   'The boy went to sit on the rock, because he got scared of him.' (prompoted narrative, EM, BP25-2:41:86)

(6) Yaisi amamu’a-naggwi yaisi taba kai tsi=buin; yaisi nanisudihe-g=gi-ti.
   PTC morning-LOC PTC sun NEG rise PTC pray-APPL-TRANS
   'Then, in the early morning, before the sun comes up, they pray.' (narrative, MS, BP13-4-2:10)

(7) Isu tsi=dam i=basi=na wadzi-ma-hu.
   DEML NOM girl 3SG.GEN=like-LOC-NMZ hide-go-LOC-SEQ
   'The girl that I like ran away.' (elicitation, MS, BP32-4-s:40)

(8) Nani=ko na ma aata’a.
   laugh-LOC-NMZ there sit-PTC
   'They were really laughing, sitting there.' (prompted narrative, MS, BP24-1:43:95)

- It is unclear whether the sequential clause is subordinated to or coordinated with the clause it is juxtaposed to, though they together form a syntactic unit, judging from intonation:

(9) Mimia-huka mi tia tsisi-gi pa’=mogo ggwi-nna.
   go-PL-LOC-NMZ say little-ACC frog carry-LOC-NMZ
   'They said they are going to leave, carrying a little frog.' (prompted narrative, EM, BP25-2:42:91)

2 The syntax of the sequential morpheme

- Northern Paiute essentially has three syntactic strategies for clause combination:
  - asyndetic coordination
  - nominalization
  - quotation

- I want to explore the idea that the sequential morpheme is not a direct marker of temporal relations. Instead, it marks a certain rhetorical relation, the Narration relation in Asher and Lascarides’ (2003) terms.

- This indirectly determines the temporal interpretation of clauses containing -si, accounting for the variability in (3-5).
  - §2: Lay out my assumptions about the syntax of the sequential clauses.
  - §3: Describe the range of temporal interpretations the sequential morpheme has.
  - §4: Provide some background on the rhetorical relations that relate clauses in discourse.
  - §5: Give a meaning for the sequential morpheme in terms of rhetorical relations.
  - §6: Raise some additional questions arising from my proposal.
3.1 V temporally precedes V

3.2 V temporally precedes V

3.3 V temporally follows V

3 The temporal interpretation of the sequential morpheme

- While the temporal interpretation described by Thornes (2003) is common, there are variety of other possibilities when the sequential clause follows the clause it is juxtaposed to:

3.1 V temporally precedes V

3.2 V temporally precedes V

3.3 V temporally follows V
4 Discourse structure and temporal interpretation

- Temporal interpretation is usually considered forward moving: the event described by a clause is interpreted as following the event described by the preceding clause (Kamp and Rother 1983, Partee 1984, Dowty 1986, Hinrichs 1986).

(25) Max tripped. He fell. tripping ∼ falling
(26) John pushed Max. He fell. pushing ∼ falling

- But, not all discourses are forward moving:

- Two clauses can overlap in their temporal interpretation:

(27) Mary came home. It was pouring rain. pouring ∩ coming
(28) Max had a lovely meal last night. He ate lots of salmon. having a lovely meal ∩ eating

- The event described by a clause can even PRECEDE the event described a clause it follows in linear order:

(29) Max fell. John pushed him. falling ∼ pushing

4.1 Rhetorical relations

- The RHETORICAL RELATIONS that hold clauses together in discourse can also contribute to temporal interpretation.

- The basic inventory in Segmented Discourse Representation Theory (Asher and Lascarides 2003):

(30) a. Narration(α, β): ‘The event described in β is a consequence of (but not strictly speaking caused by) the event described in α; e.g. [(25)].’

b. Result(α, β): ‘The event described in α caused the event or state described in β; e.g. [(26)].’

c. Background(α, β): ‘The state described in β is the “backdrop” or circumstances under which the event in α occurred (no causal connections but the event and state temporally overlap); e.g. [(27)].’

d. Elaboration(α, β): ‘β’s event is part of α’s (perhaps by being in the preparatory phase); e.g. [(28)].’

e. Explanation(α, β): ‘The event described in β explains why α’s event happened (perhaps by causing it); e.g. [(29)].’

(Lascarides and Asher 1993:440)

- There are other theories of discourse structure that have broadly similar inventories of rhetorical relations:

  - Hobbs (1979, 1983): Occasion, Cause, Background, Elaboration, Explanation,…
  - Mann and Thompson (1988) (Rhetorical Structure Theory): Sequence, (Non-)Volitional Result, Background, Elaboration, Evidence,…
  - Kehler (2002): Occasion, Result, Generalization, Exemplification, Explanation,…

4.2 Temporal interpretation

- Rhetorical relations have consequences for temporal interpretation (after Asher and Lascarides 2003:460ff.):

(31) a. narration(α, β) ⇒ α immediately temporally precedes β 
  Max tripped. He fell. tripping < falling

b. result(α, β) ⇒ α temporally precedes β 
  John pushed Max. He fell. pushing < falling

c. background(α, β) ⇒ α and β temporally overlap 
  Mary came home. It was pouring rain. pouring ∩ coming

d. elaboration(α, β) ⇒ β is a subpart of α 
  Max had a lovely meal last night. He ate lots of salmon. having a lovely meal ∩ eating

e. explanation(α, β) ⇒ β temporally precedes α, if β is an event 
  Max fell. John pushed him. falling ⇒ pushing

f. explanation(α, β) ⇒ β does not temporally precede α, if β is a state 

(32) a. John had a great evening last night.
  b. He had a great meal.
  c. He ate salmon.
  d. He devoured a lot of cheese.
  e. # It was a beautiful pink.
  e’ He then won a dancing contest.

4.3 Hierarchical structure in discourse

- In addition to their semantics, rhetorical relations can be either COORDINATING or SUBORDINATING (Asher and Vieu 2005), creating a hierarchical discourse structure.

  - COORDINATING: Narration, Result
  - SUBORDINATING: Elaboration, Background, Explanation, Result

- Coordinating relations obligatorily push discourse forward, by making only their second argument available for attachment: i.e. subsequent clauses can only be related to their second argument.

- (32e) cannot be attached to (32c) because (32c) is continued through a Narration relation by (32d).

(32) a. John had a great evening last night.
  b. He had a great meal.
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  e. # It was a beautiful pink.
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- There are other rhetorical relations that do not have consequences for temporal relations, e.g. Parallel and Contrast.

- Subordinating relations do not necessarily push the discourse forward, since they allow subsequent discourse segments to attach to either of their arguments.

- So, (32e’) can be attached to (32b) because (32d) stands in an Elaboration relation to (32b).

- Hierarchical order is also recognized in other theories of discourse structure: e.g. multinuclear vs. nuclear-satellite relations (Mann and Thompson 1988), satisfaction-precedence vs. dominance (Grosz and Sidner 1986).
5 The sequential morpheme as a marker of *Narration*

- I propose that when a clause is marked with the sequential suffix, it introduces the *Narration* relation:

  (33) For a clause \( \alpha \) that precedes a clause \( \beta \) in linear order, if the verb of \( \alpha \) is marked with -si, then:
  
  i. *Narration*(\( \alpha, \beta \)), or
  
  ii. there is a clause \( \gamma \) to which \( \alpha \) is subordinated and *Narration*(\( \gamma, \beta \)).

- The meaning in (33) accounts for the full range of attested temporal interpretations:

  \[
  \begin{array}{c|c|c}
  \text{V}_1\text{-si} & \text{V}_2 & \text{§}3.i \text{ or } \text{§}3.2 \\
  \hline
  \text{V}_1 < \text{V}_2 & \text{§}3.1 \\
  \text{V}_1 > \text{V}_2 & \text{not attested} & \text{§}3.3 \\
  \end{array}
  \]

5.1 The canonical case: \( \text{V}_1\text{-si} < \text{V}_2 \)

- Since a subsequent clause can be attached to the sequential clause with the *Narration* relation, it is obvious why the event it describes immediately temporally follows:

  (35) S=naatsi’i=mbo’o u-ma si’e-hu-si yaa poyoha-ga’a.
  
  DEF.NOM=boy=PTC 3SG-LOC scare-PUNC-SEQ there run-MOT
  
  ‘The boy got scared of him and started to run.’ (prompted narrative, EM, BP25-2-t1)

- By the first part of definition in (33), the sequential clause stands in a precedence relation to a following clause.

- By the second part of definition in (33), the following clause stands in a relation—not to the sequential clause itself—but to the clause describing the boy’s sitting that it is subordinated to by the *Explanation* relation.

- What is the alternative?
  
  - Say -si merely contributed temporal information; the event described by the sequential clause immediately temporally precedes the event described by the clause that follows it in linear order; cf. English immediately after.
  
  - The interpretation of (40) is completely unexpected, then, since the scaring event does not immediately temporally precede the dog’s laying down on the ground.

5.2 Temporal variability when the sequential clause follows

- Since -si only constrains the rhetorical relation with following clauses, the sequential clause can stand in a variety of different relations to preceding clauses.

- *Narration* relation, then the event described by the sequential clause temporally follows:

  (39) Yaa yaisi siku tiggwitsani paa’a-wo habi-hu-piti-siggai-si hau. Paa’a-gguba tsibui-si there PTC PTC trip water-LOC lie-PUNC-INCH-7-SEQ PTC water-LOC emerge-SEQ ma-tu witua ti=tsopigi-guba wana-ka.
  
  3SG-LOC pail 4.GEN=head-LOC catch-STAT
  
  ‘They tripped and fell into the water. After he crawled out of the water, he had the pail on his head.’ (prompted narrative, MS, BP24-1-t3:26-27)

- The dog’s laying down immediately temporally follows the boy’s sitting down (not his getting scared).

- By the second part of the definition in (33), the following clause stands in a *Narration* relation—not to the sequential clause itself—but to the clause describing the boy’s sitting that it is subordinated to by the *Explanation* relation.

- This is even more obvious when the sequential clause is related to the preceding clause by the *Background* relation:

  (41) Ini ki’ma-u-si pino’o a-naga’a u-kubawai nadovinai-u ka wo’wo’yu-si mii.
  
  INT come-PUNC-SEQ also 4-LOC? 3SG-LOC jump-PUNC PK whop-SEQ QUOT
  
  Yaisi kawkawayaka tiwao tumunbukka u-kubawai mia-u.
  
  then DEF.ACC=in.off-LOC also land.on.all.fours-MOT 3SG-LOC-LOC go.3SG-PUNC suvidza.
  
  DEF.NOM=coyote
  
  ‘He really came fast and easily jumped over it, having whooped like that. . . And he went over it the farthest, landing on all fours, the Coyote.’ (narrative, Thorners 2003:483)

- Coyote’s whooping comprises the circumstances for his jumping, but his landing on all fours immediately temporally follows his jumping—not the event described by the sequential clause itself.

- Either the sequential clause itself or a clause that is subordinated to stands in an immediate temporal precedence relation to a following clause.

- This no-significant-gaps effect can only be stated over hierarchical discourse structures, by having -si introduce a *Narration* relation that attaches either to its own clause or one it is subordinated to.
5.3 Why the Narration relation?

- In Segmental Discourse Representation Theory, Narration is the default way of relating clauses when there is no other rhetorical relation that can be inferred to hold between them (Asher 1996).
- Why would a language have a marker of Narration when it is the default?
  - In French, sentence-initial *puis* has been argued to overtly signal the Narration relation and the absence of the Result relation (Bras et al. 2001).

(42) a. Nous avons commencé à discuter calmement. Puis les choses se sont gâtées.
   ‘We began to chat serenely. Then things went wrong.’ (Bras et al. 2001:111)

b. L’acide tomba dans le liquide. Puis le mélange réagit en explosant.
   ‘The acid fell into the liquid. Then the mixture reacted by exploding.’
   (Bras et al. 2001:137)

- English *and* has been argued to restrict the rhetorical relations between coordinates to any coordinating relation—essentially, Narration, Result, and the nontemporal relations Parallel and Contrast (Gómez Turruga 2003).
- As a marker of Narration, Northern Paiute *-si* is less specific than French *puis* and more specific than English *and*.
- While Narration might be the default, it does provide more temporal information than the Result relation by enforcing a no-significant-gaps temporal order.
- Speakers thus might use the sequential morpheme to communicate that the events being described form a coherent narrative sequence, as opposed to a sequence of causation.

6 Conclusion

⇒ It’s useful to be reminded of how important spontaneously produced speech data is, even for historically nonwritten languages like Northern Paiute where it is harder to obtain.

(43) Natadzubi nii tika-hu-si pisa manne.
   1SG.NOM eat-PUNC-SEQ medicine
   ‘I got well after eating medicine.’ (elicitation, MS, BP13-5-s:57) getting well < eating

(44) Nii kwopi-kati su=nana ka=nabu’ni tapayui-hu-si.
   1SG.NOM shivered-STAT DEF.NOM=man DEF.ACC=window break-PUNC-SEQ
   ‘I shivered, then the man broke the window.’ (elicitation, EM, BP31-5-s:24) shivering < breaking

Data and acknowledgments

Northern Paiute is comprised of several closely related dialects (Babel et al., to appear). Much of the data presented here comes from my own fieldwork on the Mono Lake variety, spoken at Mono Lake in eastern California and immediately to the north in Bridgeport and Coleville, California and Sweetwater, Nevada. Additional data comes from the Burns, Oregon variety (Thornes 2003), and to a lesser extent the McDermitt, Nevada variety (Snapp et al. 1982) and the Bannock variety spoken at Fort Hall, Idaho (Liljebald 1966). For all dialects of Northern Paiute, there are probably no more than 300 fluent speakers today (Golla 2011:174), and for the Mono Lake dialect, there are around five speakers.

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Abbreviations

ACC = accusative, ADV = adverbial suffix, APPL = applicative, CAUS = causative, COMPL = completive, DEF = definite, DEM = demonstrative, DIM = diminutive, DL = dual, DUR = durative, EMPH = emphatic particle, EXCL = exclusive, F = feminine, GEN = genitive, IMPF = imperfective, INCEF = inceptive, INCH = inchoative, INCL = inclusive, IND = free choice indefinite, INST = instrumental nominalizer, INT = intensive, IP = instrumental prefix, IRR = irrealis, LOC = locative postposition, M = masculine, MOD = modal particle, MOT = motion suffix, NEG = negation, NOM = nominative, NMZ = nominalizer, NSF = nonspecific object, PASS = passive, PERF = perfect, PL = plural, PRO = resumptive pronoun, PLUR = pluralactional, PTC = discourse particle, QUOT = quotative, RUP = possessive anaphor, SEQ = sequential marker, SG = singular, STAT = stative aspect, TNS = ‘general tense’

References
