

YAQUI ADVERBIAL CLAUSES AND THE INTERCLAUSAL RELATIONS HIERARCHY

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Abstract. The present paper contributes to the study of purpose, reason and temporal adverbial sentences. In Yaqui, purpose, reason and temporal relations are expressed by multiple syntactic structures. The aim of this paper is to explore whether Yaqui syntactic linkages are compatible (or not) with the cross-linguistic predictions made by the Interclausal semantic relations hierarchy. This Hierarchy predicts a scale where purpose outranks reason and reason outranks temporally ordered events. However, Yaqui does not conform to the expected rankings. In this language, purpose relations make use of the tightest syntactic linkages, while reason relations are expressed by the loosest syntactic structure. However, in terms of syntactic bonding and semantic integration, simultaneous and sequential temporal expressions are placed right in the middle of purpose and reason.

Keywords: *Yaqui, purpose, temporal, reason, interclausal relation hierarchy.*

1. Introduction

The iconic correlation between the semantic and syntactic representations of complex sentences is very well known within the studies of clause union, especially in the domain of complementation (Silverstein 1976; Givón 1980; Haiman 1985, Noonan 2007 [1985]). The same syntactic devices that signal stronger interclausal dependency in complementation reflect also the stronger dependence of adverbial subordination but to a lesser degree (Givón 2001; Cristofaro 2003). As one step further, the theory of clause union in Role and Reference Grammar formalizes an implicational hierarchy which links the semantic and syntactic dimensions of complex constructions (Foley & Van Valin 1984; Bickel 1993; Van Valin & LaPolla 1997; Van Valin 2005, 2007). The Interclausal relations hierarchy predicts that the closer the semantic relationship between the two events is, the stronger the syntactic link joining them will be. With respect to adverbials, the semantic relations can be ranked as in (1).

- (1) Interclausal adverbial semantic hierarchy (adapted from Van Valin 2005: 207)
Modifying sub-event [manner, motion, position, means] > purposive > temporal or spatial circumstances > reason > conditional > concessive > simultaneous and sequential temporal > unordered temporal states of affairs

On the syntactic side of the Interclausal relations hierarchy, the linkage types are ranked in terms of their syntactic tightness. At the bottom of the scale are combinations of whole clauses constituting sentences (e.g. sentential or clausal coordination). As one goes up the hierarchy, the linked units lose more and more features of independent clauses until they are reduced to a bare nucleus or predicate (e.g. nuclear co-subordination). At the middle portion of the scale, in a non-subordinate core juncture, the two cores obligatorily share

one core argument; in a subordinate core juncture, the linked core serves as a syntactic argument of the matrix core. These juncture-nexus types are abstract linkage relations, not grammatical construction types, meaning each linkage type may be realized by more than one grammatical construction in a language, and vice versa, the same grammatical construction may involve different linkage types. The crucial point here is that the looser the semantic relations, the more marked a tight syntactic linkage should be.

As part of a major project dealing with the syntax, semantics and pragmatics of clause union in Yaqui (Uto-Aztecan, Mexico), this paper focuses on adverbial constructions expressing purpose, reason and temporal relations. The Interclausal semantic hierarchy defines these relations as follows:

(2) Interclausal semantic relations [partial] (Van Valin 2005: 206-7):

- e. Purposive: one action is done with the intent of realizing another state of affairs, e.g. *John went to the store to buy milk, Susan brought the book to read*
- n. Circumstances: the spatial or temporal parameters of an event, e.g. *Kim saw Pat after she arrived at the party*
- o. Reason: the motivation or cause for an action or event, e.g. *The baby cried because she was hungry*
- r. Temporal
 - 1. Simultaneous states of affairs: one state of affairs is temporally coterminous with another, e.g. *Max was dancing, and at the same time Susan played the piano.*
 - 2. Sequential states of affairs: one state of affairs follows another temporally, with or without any temporal overlap, e.g. *Juan finished reading the newspaper, and then Carlos walked into the room.*
- s. Temporally unordered states of affairs: the temporal relation between states of affairs is unexpressed, e.g. *Tyrone talked to Tanisha, and Yolanda chatted with Kareem*

Yaqui displays considerable structural variation across these adverbial sentences. The aim of this paper is to explore whether Yaqui purpose, reason and temporal clauses are compatible with the cross-linguistic predictions made by the semantic relations hierarchy in (1). In Yaqui, purpose relations make use of the tightest syntactic linkages, while reason relations are expressed by the loosest structure. That is, the structures expressing purpose and reason relations reflect in an iconic way the semantic association between the two states of affairs. However, the units in temporal clauses are syntactically tighter and semantically closer than those involved in reason clauses. In fact, Yaqui makes a good case for re-examining the ranking of the Interclausal semantic hierarchy for a scale like purpose > simultaneous, sequential > reason.

2. Basic morpho-syntactic features of Yaqui

Yaqui is a synthetic/agglutinating, head-final, dependent marking, and primary object language (Lindenfeld 1973; Escalante 1990; Dedrick & Casad 1999; Guerrero & Van Valin 2004). In nominal arguments, the nominative case is unmarked (2a-b) and the accusative is marked by *-ta* (2b). Oblique core arguments are introduced by postpositions (2c). The accusative *-ta* and the plural *-(i)m* are mutually exclusive in nominals and determiners (2c).

- (2) a. *U-∅* *o'ou-∅* *batwe-u* *yeu=siika*
 DET-NOM man-NOM river-DIR out=go.SG.PFV
 'The man went to the river.'
- b. *U-∅* *o'ou-∅* *u-ka* *toto'i-ta* *bicha-k*
 DET-NOM man-NOM DET-ACC hen-ACC see-PFV
 'The man saw the woman.'
- c. *U-me* *toto'i-m=ne* *u-e* *jamut-ta-u* *nenki-ne*
 DET-PL hen-PL=1SG.NOM DET-OBL woman-ACC-DIR sell-POT
 'I will sell the hens to the woman.'

Yaqui shows a rigid SOV word order, though other orders are possible for specific pragmatic functions. There are two sets of pronouns (Table 1). Full pronouns behave as lexical elements in terms of their distribution, while reduced nominative pronouns behave as second position clitics, and reduced accusatives (available only for 3rd person) cliticize to the verb. There is some degree of morphological syncretism in the pronominal system; for instance, the reduced pronoun *ne* '1sg' can serve as a nominative or accusative argument.

TABLE 1. Yaqui pronominal system

	nominative	accusative	oblique	genitive
1 Sg	<i>inepo = ne</i>	<i>nee, ne</i>	<i>ne-</i>	<i>in, nim</i>
2 Sg	<i>empo = 'e</i>	<i>enchi</i>	<i>e-</i>	<i>em</i>
3 Sg	<i>aapo = ∅</i>	<i>apo'ik, a'a, a= ∅</i>	<i>a-</i>	<i>apo'ik, a=</i>
1 Pl	<i>itepo = te</i>	<i>itom</i>	<i>ito-</i>	<i>itom</i>
2 Pl	<i>eme'e = 'em</i>	<i>enchim</i>	<i>emo-</i>	<i>em, enchim</i>
3 Pl	<i>bempo = ∅</i>	<i>apo'im / am</i>	<i>ame-</i>	<i>bem, bempo'im</i>

Except for a few suppletive forms, verbs do not express person or number. As typical in the family, there is little indication of suffixes that mark pure tense. Instead, the usual situation for the tense-aspect-mood affixes is to display a range of meanings (Table 2), including tense-aspectual values and distinct mood/epistemic states. The present tense is unmarked, meaning a simple clause (3a) in present tense and an unmarked verb in a complex predicate (3b) look the same. The difference is that the former can take any TAM affix.

TABLE 2. Tense-Aspect-Mood (TAM) verbal system

<i>V-∅</i>	Present	RDP-V	Habitual
<i>V-k(a)</i>	Past perfective	RDP.RDP-V	Iterative, intense
<i>V-n</i>	Past continuative	<i>V-su</i>	Completive
<i>V-ne</i>	Future, potential	<i>V-'ean</i>	Subjunctive; hypothetical obligation
<i>V-na</i>	Future, potential passive	<i>V-maachi</i>	Obligation

- (3) a. *Ketgo* *jo'a-wa-u=ne* *yepsa-∅* / *yepsa-k*
 early house-GEN-DIR =1SG.NOM arrive.SG-PRS arrive.SG-PFV
 'I arrive / arrived to his place earlier.'

- b. *Ketgo jo'a-wa-u=ne yepsa-bae-k / *yepsa-ne-bae-k*
 early house-GEN-DIR =1SG.NOM arrive.SG-want-PFV/arrive.SG-POT-want-PFV
 'I wanted to arrive to his place earlier.'

3. Adverbial constructions, some generalities

Previous work on Yaqui has described some basic features of adverbial subordination based on the selection of the subordinator or clause-linkage marker (henceforth CLM). There are two major CLMs in Yaqui showing a consistent, though not obligatory distribution: the marker *-kai* (*-ka* when the clause is non-final) is used when the main and linked subjects are the same, as in (4a), while *-o* tends to occur when they are different, as in (4b).¹

- (4) a. *Into=ne_i ousi tomi-yo'o-k [__i yeewe-kai]*
 DM=1SG.NOM a.lot money-win-PFV play-CLM
 'And then, I won a lot of money by playing.' (Buitimea; chapayeca: 83)
- b. *[Unison-po=nee estudiaroa-k-o] nim papa yo'owe-∅ muuku-k*
 Unison-LOC=1SG.ACC study-PFV-CLM 1SG.GEN father old-NOM die.SG-PFV
 'When I studied at the Unison, my grandfather died.'

These adverbial markers are highly ambiguous. For instance, *-kai* can introduce a manner clause (4a), and a 'without' clause (5a); *-o* can mark a sequential temporal clause (4b), as well as conditional (5b) and counter-factive (5c) adverbial expressions.

- (5) a. *[kat]=e'e_i [__i ji'i-bwa-ka] to'o-ne*
 NEG.IMP=2SG.NOM something-eat-CLM lie-POT
 'You will go to bed without eating.' (Dedrick & Casad 1999: 394)
- b. *[jiba enchi nee_i suaati-bicha-o]*
 always 2SG.ACC 1SG.ACC death-see-CLM
- nee_i ya'ura-ta tejwaa-ne*
 1SG.NOM authority-ACC tell-POT
 'If you keep bothering me, I'll talk to the authorities.'
 (Silva et al; turtle & coyote: 59)
- c. *[Kaa nee_i 'u'utte bwite-o] nee_i bwij-'ea-n*
 NEG 1SG.ACC strong run.SG-CLM 1SG.ACC grab- SHOULD-PSTC
 'If I hadn't run fast, he would have grabbed me.' (Dedrick & Casad 1999: 395)

Although uncommon, some postpositions can introduce adverbial clauses too. For instance, the directional *-u/-wi* (6a) can mark an adverbial locative clause. Concessive, cause and

¹ In the examples, co-referential arguments are co-indexed; the ' _ ' is for illustrative purposes only and indicates an implicit argument which is coreferential with an argument of the main unit.

reason clauses are exceptional since they are introduced by initial free particles. An example of *ella'apo* 'although' can be seen in (6b).

- (6) a. *'aman jo'a-k [bwia-ta bweji-wa'a-wi]*
 there home-PFV dirt-ACC dig-PASS-DIR
 'He lives there where they are digging dirt.' (Dedrick & Casad: 387)
- b. *Itepo aman kat-ne [ella'apo ili usi-Ø ko'okwe-Ø]*
 1PL.NOM there go-POT CLM little child-NOM sick-PRS
 'We will go there although the child is sick.' (Lindenfeld 1973: 85)

The study of adverbial sentences in Yaqui is based on a corpus of approximately 4,700 clauses comprised of several narratives including traditional and folk stories, life stories and short conversations. Table 3 shows the sample of adverbial clauses.

TABLE 3. Yaqui adverbial clauses in the sample

	adverbial-main	main-adverbial	Total
Reason/causal	4	185	189
Conditional	5	3	8
Temporal	148	24	172
Purpose	35	185	220
Manner-like	33	21	54
Other relations	12	5	17
	237	423	660

Diessel (2005, 2008) has found some interesting facts regarding the ordering of the main and the adverbial units. He found that languages of the world use either, adverbial clauses both before and after the main clause, or adverbial clauses preceding the main clause; languages preferring final adverbial units are less common in his sample. When both orders are possible in the same language, the position of the adverbial unit can be motivated by several factors. One of these factors is word order. For instance, initial adverbial clauses are common in OV languages. Yaqui shows a rigid SOV order but, interestingly, 64% of the adverbial clauses in my sample are final (Table 3). Diessel also suggests that adverbial clauses with final markers tend to be sentence initial, while clauses taking initial subordinators may alternate their position. As for Yaqui, adverbial clauses marked by an initial subordinator prefer to be final (187 out of 191 clauses), but there is no clear preference for clauses taking final CLMs, as can be seen in Table 4. Indeed, Yaqui shows a *mixed order* pattern based on the semantic relation of the two units: temporal clauses tend to be sentence initial, while purpose and reason clauses tend to occur at the end of the sentence. This can be seen in Table 3 above.

TABLE 4. Distribution between main and adverbial units in Yaqui in corpus

	adverbial-main	main-adverbial	Total
Final subordinator	233	236	469
Initial subordinator	4	187	191
	237 (36%)	423 (64%)	660 (100%)

4. Purpose, reason and temporal clause linkages in Yaqui

Purpose relations link two events, such as the main event is performed with the goal of obtaining the realization of another event (the purposive event). Yaqui has four syntactic structures expressing the notion of purpose. The clause in (7a) consists of a V1-V2 structure, in which the V2 is a motion verb. In (7b-c), the linked unit is marked by the adverbial CLM *-kai*; in addition to the main verb, there is a V1-V2 structure.² In (7d), the postposition *-betchi'ibo* ‘(in order) to’ serves as the linkage marker.

- (7) a. *Peo-Ø_i a'abo _i ji'i-bwa-se-k*
 Peo-NOM here something-eat-move.PURP.SG-PFV
 ‘Peter came here to eat.’
- b. *Peo-Ø_i yepsa-k [_i ji'i-bwa-se-kai]*
 Peo-NOM arrive.SG-PFV something-eat-move.PURP.SG-CLM
 ‘Peter arrived to eat (=moving to eat).’
- c. *Peo-Ø_i yepsa-k [_i ji'i-bwa-bae-kai]*
 Peo-NOM arrive.SG-PFV something-eat-want-CLM
 ‘Peter arrived to eat (=wanting to eat).’
- e. *Peo-Ø enchi_i a'abo bittua-k [enchi_i ji'i-bwa-ne-betchi'ibo]*
 Peo-NOM 2SG.ACC here send-PFV 2SG.ACC something-eat-POT-CLM
 ‘Peter sent you here in order for you to eat.’

Reason clauses provide the cause, reason or motivation for the proposition expressed in the main unit. There are three structures in Yaqui expressing reason relations: a structure takes the linkage marker *-betchi'ibo* (8a); another structure takes the initial particle *bweituk* ‘because’ (8b), and another one starts with *kiali'ikun* ‘so that’ (8c). Out of 189 reason clauses in the sample, 20 clauses (expressing a cause-effect relation) take *-betchi'ibo* as the subordinator, meaning that *bweituk* and *kiali'ikun* clauses are by far the most common strategies to express reason relations. Because clauses like in (8a) are infrequent in the sample, the analysis focuses on the two most common structures.

- (8) a. *Inepo in jaboi-ta_i uttia-Ø*
 1SG.NOM 1SG.GEN grandpa-ACC admire-PRS
- [si jita a_i ta'a-betchi'ibo]*
 INT thing 3SG.GEN know-CLM
 ‘I admire my grandpa because he knows a lot of things.’

² What distinguishes purpose from other adverbial clauses taking *-kai*, such as those in (4a) and (5c), is the obligatory occurrence of a V-V structure in the linked unit. The clause in (7b) takes a motion-*cum*-purpose linkage highlighting the notions of motion and target-directedness, that is, purpose of motion; (7c) takes the desiderative *-bae* ‘want’ to express a purpose of intention. Without the complex predicate, the adverbial is interpreted as a manner or simultaneous clause. For a deep analysis on purpose and causal sentences, see Guerrero (submitted).

- b. [Bweituk Peo-Ø_i lauti yebij-pea-n] 'utte'a _{-i/j} weye-Ø
 CLM Peo-NOM early arrive.SG-desire-PASTC strong go.SG-PRS
 'Since Pedro_i desired to get earlier, he_{i/j} goes very fast.'
- c. Peo-Ø jaibu yepsa-k [kiali'ikun empo aa yeu=siime-Ø]
 Peo-NOM already arrive.SG-PFV CLM 2SG.NOM can out=go.SG-PRS
 'Pedro already arrived so that you can leave.'

Temporal clauses involve two states of affairs occurring in a sequence or overlapping. Typological studies usually distinguishes between posterior (*before*-relations) and anterior (*after*-relations), and consider that *when*-clauses generally imply that the main and the linked events overlap in their realization (Cristofaro 2003: 159). Yaqui displays considerable structural variation across temporal clauses too (Guerrero 2014). The most common and frequent clauses expressing simultaneous and sequential states of affairs are solely marked by the adverbial CLMs *-o/-kai*. In (9a), the event described in the *-o* clause is located at a time point posterior to that of the main unit, e.g. I will jump and then, he will arrive. In (9b), the event in the *-kai* clause takes place before the main event, e.g. the fox first took the harp and then he started playing it.

- (9) a. [junumpo bea aman eela a weye-o]
 over.there MD there almost 3SG.ACC walk.SG-CLM

 bea nepo yeu=tubukti-ne
 MD 1SG.NOM out=jump-POT
 'Before/when he [the coyote] almost arrives there, I will jump.'
 (Silva et al; turtle & coyote: 38)
- b. Aapa-Ø_i jika-t cha'aka, [junak a_i kom=wike-ka]
 harp-NOM up-LOC begin.hang then 3SG.ACC down take-CLM

 bea jipon-taite-k
 DM play-start-PFV
 'As for the harp that was hanged up, after/when he [the fox] took it, he started playing it.' (Silva et al; fox: 38)

The examples in (10), also marked by *-o* and *-kai*, favor simultaneous rather than sequentially ordered states of affairs:

- (10) a. [Amureo-m ama ane-o]
 hunter-PL there be.around-CLM

 ama bea tukaa-po yeu am nuk-sim-ne
 there MD night-LOC out 3PL.ACC take-go.SG-POT
 'While the hunters are around, at the night he would keep them [the animals].'
 (Silva et al; Saint: 6)

- b. [Junama 'a bea=ne pu'akta-wa-ka]
later MD=1SG.ACC carry-PAS-CLM

ejtacion-eu-bicha nuk-saka-wa-k
station-DIR-toward take-go.PL-PAS-PFV

'Later, I was taken toward the army station while I was being carried.'

(Silva; HVH: 183)

In addition to these general clauses, Yaqui has a way to specify the temporal relation between the two events. Thus, *before*-clauses may take the adverbial particle (*ketun*) *kee* 'not yet', as in (11a); *after*-clauses can take the completive suffix *-su* (historically related to *ansu* 'finish') in the linked verb, as shown in (11b).

- (11) a. *Enchi_j=ne_i bicha-k [ketun_kee _i kaba'i-ta jinu-kai]*
2SG.ACC=1SG.NOM see-PFV CLM horse-ACC buy-CLM
'I saw you before I bought the car.'

- b. *Naa=bea=te pakun-bicha yeu=saja-k*
then=DM=SG.NOM out-toward out=go.PL-PFV

[*a=puntaroa-su-k-o*]
3SG.ACC=suture-CMP-PFV-CLM

'Then, we left [the hospital] after they sutured him.' (Guerrero; Lalo: 358)

However, out of 220 temporal clauses in the sample, only 18 correspond to specific temporal clauses. In other words, the most common and frequent sentences expressing temporal relations are introduced by the general markers *-o/-kai*. In what follows, the major syntactic features characterizing the most common and frequent purpose, reason and temporal clauses in Yaqui are described.

4.1. The selection of the subordinator

In Yaqui, complements, relatives and several adverbial clauses all take final clause linkage markers. Purpose clauses and temporal clauses both take final and bond subordinators, but reason clauses are exceptional because they can take a final subordinator, the postposition *-betchi'ibo* in (8a), as well as initial particles. However, reason clauses taking initial clause linkers are by far the most common strategy in Yaqui. This is the first major difference among purpose, reason and temporal clauses in Yaqui.

4.2. Identity and coding of the subject

The occurrence of non-nominative subjects is a strong feature for dependency in Yaqui, i.e. complement clauses demand accusative subjects, and relative clauses require accusative subjects, when nominal, or genitive subjects, when pronominal. When the main and the dependent subjects are different, purpose and temporal clauses also require a non-nominative dependent subject. The purpose clause in (12a) takes the accusative pronoun *am* 'they', and the temporal clause in (12b) takes an accusative NP *juka'a go'ita* 'the coyote'.

- (12) a. *Itepo i-me'e yoeme-mi aman bittua-kan*
 1PL.NOM DEM-PL man-PL there send-PASTC
 [*ami yumjoe-ne-betchi'ibo*]
 3PL.ACC rest-POT-CLM
 'We sent these men there in order for them to rest.' (Silva; HVH: 69)
- b. [*junak ju-ka'a go'i-ta yeu=bwitek-o*]
 later DET-ACC coyote-ACC out=run.SG-CLM
- ju'u mochik-Ø bea bwia-po kibak-taite-k*
 DET turtle-NOM MD soil-LOC enter.SG-begin-PFV
 'After the coyote ran, the turtle begins to enter into the soil.'
 (Silva et al; turtle & coyote: 45)

In opposition, reason clauses must take a nominative subject inside the linked unit:

- (13) *Ili miisi-Ø pochi-ta bwasia-ka yeu=tomte-k*
 little cat-NOM short-ACC tail-ACC out=stomach-PFV
- [*kiali'ikun miisi o'ou-Ø miisi jamut-ta-u o'omte-k*]
 CLM cat male-NOM cat woman-ACC-DIR RDP.angry-PFV
 'A little cat with a short tail was born, so the male cat became angry with the female cat.' (Silva et al; cat:10)

Purpose, temporal and reason clauses also differ in terms of the lexical coding in same-subject clauses. On the one hand, purpose clauses demand the dependent subject to be implicit, as it is shown in (14a-b). Temporal clauses marked by *-kai* also take an implicit subject in co-reference to the main subject (14c).

- (14) a. *Bwite-k [_i au esso-se-kai] Waimam-mewi*
 run.SG-PFV 3SG.REF hide-move.PURP.SG-CLM Guaymas-DIR.PL
 'He ran to Guaymas to hide himself (lit. moving to hide).' (Johnson; Cajeme:34)
- b. *U o'ou-Ø_i juya-u siika [mas-ta _i me'e-ne-betchi'ibo]*
 DET man-NOM desert-DIR go.SG.PFV deer-ACC kill.SG-POT-CLM
 'The man went to the desert to kill the deer.'
- c. [*bea sechupti _i pensasaroa-ka*] *ne_i aman siika*
 MD suddenly think-CLM 1SG.NOM there go.SG.PFV
 'And, as soon as I suddenly thought [about it], I went there.'
 (Guerrero; Lalo: 255)

Temporal clauses marked by *-o* allow both, implicit subjects as well as explicit subjects; the latter is the most common situation when the clause encodes sequential events. Notice that, when the subject is overtly expressed, as in (15b), it needs to take accusative case.

- (15) a. *Maria-Ø_i Fermin-ta_j bicha-k [kafe-ta _{-i} saake-o]*
 María-NOM Fermín-ACC see-PFV coffee-ACC toast-CLM
 ‘María saw Fermín when (he) was toasting coffee.’
- b. [*Ju-ka Sulumai-ta_i omotria-u yepsa-k-o*]
 DET-ACC Sulumai-ACC brush-DIR arrive.SG-PFV-CLM
- jaibu _{-i} kaa enchi tea-k*
 already NEG 2SG.ACC find-PFV
 ‘After Sulumai got back to the brushes, she couldn’t find you.’
 (Buitimea, toorokoyori: 102)

Again, in the very same context, reason clauses demand a nominative subject. In (16a), the main and dependent subjects are the same, and the pronominal pronoun is inside the linked unit. In (16b), the two subjects are different and, again, there is a nominative pronoun serving as the linked subject.

- (16) *Nee _{-i} a=tetejwa-n [bwe’ituk aapo_i ket bwibwika-n]*
 1SG.ACC 3SG.ACC=RDP.tell-PSTC CLM 3SG.NOM also RDP.sing-PSTC
 ‘She [my mother] always told me that because she also sang.’ (Silva, maejto: 34)

4.3. TAM operators

A purpose clause evokes a situation where the event predicated in the adverbial unit is posterior to the event expressed in the main unit. Because of this, it is expected that the linked verb be unmarked or be marked as a future-oriented verb. The structures coding purpose relations in Yaqui differ from each other with respect to operator dependency. For instance, the aspectual suffix *-ne* ‘potential’ is only allowed within the *-betchi’ibo* clause (17a), but it is completely prohibited in the other purposive linkages types. That is, the linked verb must be fully unmarked in the structures in (17b-c).

- (17) a. *Goyo-Ø_i yeu=siika [enchi _{-i} kaa bit-ne-betchi’ibo]*
 Goyo-NOM out=go.SG.PFV 2SG.ACC NEG see-POT-CLM
 ‘Goyo left because he didn’t want to see you.’
- b. *Ah, jewi, wam-bicha em saka’a-bo-Ø (*saka’a-ne-bo)*
 ah yes there-toward 2PL.NOM go.PL-move.PURP.PL-PRS
 ‘Ah, you all go and move away to another site.’ (Silva; toad: 33)
- c. *Ili uusi-Ø_i siika*
 little boy-NOM go.SG.PFV
- [demonio-ta jo’a-wi _{-i} am=to’i-se-kai] (*to’i-ne-se-kai /*to’i-se-ne-kai)*
 demon-ACC house-DIR 3PL-ACC=take-move.PURP.SG-CLM
 ‘The boy left to take them inside the demon’s house’ (Johnson; boy: 11)

Temporal clauses show also some restrictions in terms of the TAM values. On one hand, in ‘before’ and ‘after’ relations, the linked events are sequential, meaning the TAM information is predetermined with respect to the event described in the main unit. On the other hand, when the main and linked events overlap to some extent, it would be expected that the two events also share the TAM operators (Cristofaro 2003: 164). In her sample, Cristofaro (2013) found that 84 out of 174 languages of the world require balanced (finite-like) adverbial ‘when’ clauses, 51 require deranked (non finite-like) adverbial units, while the other languages allow both, balanced and deranked ‘when’ clauses. It seems that Yaqui falls into the third group. In Yaqui, temporal clauses marked by *-kai* demand an unmarked verb form; this is true for simultaneous (18a) and sequential (18b) readings.

- (18) a. *[junaa'a bikam-po _i bolo-toji-wa-ka nama]* (*toji-ka-wa-kai)
 over.there Vicam-LOC bolo-take-PAS-CLM there
- bea _i ju-ka in jaboï tata'a-k*
 MD DET-ACC 1SG.GEN grandfather RDP.meet-PFV
 ‘While she was engaged in Vicam, she met my grandfather.’ (Félix; HVC)
- b. *[ajta bea _i busam wasekte-ka]* (*wasekte-k-kai)
 until MD six become.old-CLM
- bea _i primaria-u bea kibake-k*
 MD primary.school-DIR MD enter.SG-PFV
 ‘After he became six years old, he entered primary school.’ (Guerrero; Lalo: 87)
- c. *[kee Sulumai-tai bwij-wa-o]* (*bwij-ne-wa-o)
 CLM Sulumai-ACC capture-PAS-CLM
- aapoï enchi juya-m nasuk e'e-ria-k*
 3SG.NOM 2SG.ACC brush-PL middle hide-APPL-PFV
 ‘Before Sulamai was captured, she was able to hide you inside the brush.’
 (Buitimea; toorokoroyi: 78)

Although temporal clauses marked by *-o* may take the relevant TAM operators, as depicted in (19), the prototypical situation is for the linked verb to be unmarked for TAM affixes.

- (19) *Naa bea=te pakun-bichaa yeu=sajak*
 then MD=1SG.NOM outside-toward out=go.PL.PFV
- [a puntaroa-su-k-o]*
 3SG.ACC suture-COMPL-PFV-CLM
 ‘Then, we went out after they sutured him.’ (Guerrero; Lalo: 358)

In contrast, the event described inside the adverbial unit in reason sentences is completely independent in terms of TAM operators, negation and illocutionary force. In the example in (20a), the adverbial unit is marked by the potential suffix *-ne*, and in (20b), by the past perfective *-k*.

- (20) a. *¡Banse-ka em troopa-ta lijtaroa-ne ala!*
 hurry.up-CLM 2SG.GEN troop-ACC prepare-POT AFFIR
 [bwe'ituk nee kompayaroa-ne]
 CLM 1SG.ACC accompany-POT
 'Hurry up and prepare your troop! because you are going to walk with me.'
 (Johnson; Cajeme: 38)
- b. *Aapo*i* siika [bweituk _i kaa im jo'a-pea-k]*
 3SG.NOM go.SG.PFV CLM NEG here live-desire-PFV
 'He left because he didn't feel like living here.'

Notice that the two associated units inside reason clauses are even independent of each other in terms of illocutionary force which cannot be independently specified in a subordinate clause of any kind (Van Valin 2005: 214). That is, the event described in the main clause in (20a) is a command, and in (21a) a question; in both examples, the linked unit expresses an affirmative sentence. There are not examples in the sample of purposive or temporal clauses taking imperative or affirmative emphatic particles. If an imperative or question markers occur in a temporal or purpose clause, then it has scope over the two units. See the example in (21b).

- (21) a. *Jaksa into inim kaa mekka?*
 where DM there NEG far
 [bwe'ituk ne jakko juni keet enchim bicha-n-ti]
 CLM 1SG.NOM never even before 2PL.ACC see-PASTC-CLM
 ne ame-u jiiak
 1SG.NOM 3PL-OBL say-PFV
 "But where is not far? because I have never seen you two before", I said to them.'
 (Buitimea; grandfather: 37)
- b. *Aman _i Edgar-ta jiu-se, Jorge-Ø*i*!*
 there Edgar-ACC look-move.PURP.SG Jorge-NOM
 'Jorge, go look for Edgar over there!' (Guerrero; ConvG&A:46)

4.4. Discourse markers

There is another feature distinguishing reason from purpose and temporal clauses. The occurrence of discourse markers such as *bea* 'so, then', *into* 'and so', at some point of the left-edge, is very common in independent clauses. For reason cases (22a), these markers may freely occur inside the adverbial unit but they can only occur inside the main unit in a purpose clause, except when they are preposed (22b).

- (22) a. *Em animaalim-tia-'u-m*i* juna-me-san tua*
 2SG.GEN animal-PL-say-CLM-PL DET-PL-DM INT

wa-e kobanamyi-ta jippue
 DET-OBL knowledge-ACC have

[bwei'ituk juna-me; bea che'a wa-ka bwia-ta
 CLM DET-PL DM more DET-ACC land-ACC

tomtam-ta-mak emo tu'ure]
 give.birth-ACC-INS REFL like

[bwe'ituk into juna-me; bea moream ket jippue]
 CLM DM DET-PL MD wisdom also have

‘Those that you called animals are creatures with a lot of knowledge, because they live and enjoy the natural environment, and they also have wisdom.’

(Buitimea; grandfather: 115-8)

b. *Woika nau; bea nee kobatua-k.*
 two together MD 1SG.ACC get.dressed-PFV

Siali supem-tu-kan si tutu'ulia-kan!
 green shirt-VBLZ-PASTC INT nice-PASTC

[Kaa nee; ta'a-na-betchi'ibo]
 NEG 1SG.ACC know-POT.PASS-CLM

bea nee; _i ama kobatua-k.
 DM 1SG.ACC there get.dressed-PFV

‘In order for nobody to recognize me, they dressed me up over there.’

(Buitimea; grandfather: 50-53)

The distribution (and function) of adverbial particles inside temporal clauses is still unclear. For instance, *bea* occurs twice in (23), once inside the linked unit marked by *-kai*, and then right after the adverbial clause.

(23) *[Num bea jita-su-mak nau ya'a-ka]*
 there MD thing-COMPL-COM together make-CLM

bea aapa-reo-tu-ka'u na'a bea jupa-taka yeu bwite-k
 MD harp-AGT-VLZD-NMLZ DEM MD skunk-being out=run.SG-PFV

‘When they finished making love, the harper dressed like the skunk ran out.’

(Silva et al; skunk: 23)

To summarize, purpose clauses in Yaqui show a higher degree of syntactic integration. They demand a missing syntactic argument when the main and dependent subjects are the same, and an accusative dependent subject when they are different; the dependent verb must be unmarked or be marked by the potential suffix *-ne* only within the *-betchi'ibo* purposive clause; the linked unit depends on the main unit for the other TAM information including illocutionary force. Now, simultaneous temporal clauses marked by *-kai* share

most of the structural properties of purpose linkages except that the linked verb must always be unmarked. Because they describe anterior or posterior events with respect to the main clause, sequential temporal clauses marked by *-o* may take the relevant tense-aspect operators, though the typical situation is to take an unmarked verb form. Also, the dependent subject must be accusative regardless if it is coreferential or not to the main subject. In opposition, reason clauses do not show any of these dependence features: the linked subject must take nominative case, and it can be overly expressed even when coreferential to the main subject; the two events are completely independent of each other in terms of TAM operators and illocutionary force.

Semantically, purpose and temporal relations predetermine the temporal associations between the two events. Purpose clauses involve two sequential events (the realization of the intended event is presented as possible at a future point in time). For temporal clauses, the two events can overlap in time or one event can follow the other event, but the two states of affairs must hold a temporal relationship. In opposition, reason clauses do not place any of these temporal constraints.

5. The Interclausal semantic relation hierarchy, revisited

As mentioned before, Role and Reference Grammar's approach to clause-internal relational structures predicts that the closer the semantic relationship between the two events is, the stronger the syntactic link joining them will be. In the semantic side of the hierarchy, as depicted in (1) and repeated below, purpose relations outrank reason relations and reason outranks simultaneous and sequential temporal relations. It would be expected then that purpose and reason clauses would make use of a tighter syntactic linkage in comparison to temporal clauses. We have seen that the most common and frequent syntactic structures coding purpose, reason and temporal relations in Yaqui do not follow these predictions.

- (1) Interclausal adverbial semantic hierarchy (adapted from Van Valin 2005: 207)
 Modifying sub-event [manner, motion, position, means] > purposive > temporal or spatial circumstances > reason > conditional > concessive > simultaneous and sequential temporal > unordered temporal states of affairs

It is worth noting, however, that this semantic hierarchy places two positions for clauses expressing temporal relations: temporal circumstances outranking reason, conditionals and concessive relations, and then simultaneous and sequential temporal relations just above temporally unordered states of affairs.

Accordingly, there are two semantic relations relevant to temporally ordered events. First, circumstances describing the locative or temporal parameters of an event have the logical structure of a core modifier **be-loc/temp'** ([LS1], [LS2]). Van Valin (2005: 194) argues that some prepositions in English can introduce both nominal (24a) and clausal (24b) objects. That is, the relationship of the adverbial clause to the core it modifies is the same as that of a peripheral PP modifying the core, meaning both adjuncts occur at the periphery_{CORE}, e.g. ad-core subordination.

- (24) a. *Kim saw Pat after the concert*
 a'. **be-after'** (concert, [see' (Kim, Pat)])
- b. *Kim saw Pat after she arrived at the party*
 b'. **be-after'** ([BECOME **be-at'** (party, 3sgF)], see' (Kim, Pat)])

In Yaqui, locative phrases (25a) and locative clauses (25b) are marked by the temporal/locative predicative postposition *-po*.

- (25) a. *Lunes-po Kantoora-m = ne tea-k plasa-po*
 Monday-LOC singer-PL = 1SG.NOM find-PFV plaza-LOC
 'Last Monday, I found the church singers in the plaza.'
 a'. **be-at'** (lunes, [**be-at'** (plasa, [**find'** (1sg, kantooram)])])
- b. *Kantoora-m = ne tea-k [am bwiika-po]*
 singer-PL = 1SG.NOM find-PFV 3PL.ACC sing-LOC
 'Last Monday, I found the church singers where they were singing.'
 b'. **be-at'** ([**sing'** (3pl)], **find'** (1sg, kantooram)])

Thus, locative clauses resemble English temporal clauses modifying the core of the main unit. In other words, they fit perfectly in the description of locative circumstances. However, temporal clauses in Yaqui are not marked by predicative adpositions, but they take adverbial CLMs introducing clauses, not objects.

Lower in the semantic continuum, there is another semantic relation that has to do with temporality. This temporal relation distinguishes between (i) one state of affairs being co-temporal with another (simultaneous), which can be decomposed as [LS1] \wedge [LS2], and (ii) one state of affairs following another event temporally, with or without any temporal overlap (sequential), which can be decomposed as in [LS1] & [LS2]. In contrast to temporal circumstances, the English clauses illustrating these relations do not involve the 'after', 'before', or 'when' temporal clause linkage markers:

- (26) a. *Max was dancing, and at the same time Susan played the piano*
 [**do'** (Max, [**dance'** (Max)])] \wedge [**do'** (Susan, [**play'** (Susan, piano)])]
- b. *Juan finished reading the newspaper, and then Carlos walked into the room*
 [**do'** (John, [**read'** (John, paper)])] & [**do'** (Carlos, [**walk'** (Carlos) & ING **be-at'** (room, Carlos)])]

Since there is not a specific temporal clause linkage marker (nor adverbs) specifying the association between the two units in the English examples in (26), one may assume that the temporal semantic relations are inferred from the construction as a whole. Although uncommon, juxtaposed clauses as in (27) also favor a sequential relationship in Yaqui. This sentence looks similar to the English temporally ordered constructions.

- (27) *Junak bea senu jamut-Ø ne-u-bichaa sika,*
 then DM one woman-NOM 1SG-DIR-toward go.SG.PFV

wajiwa-bichaa *nee* *wike-k*
inside-toward 1SG.ACC drag-PFV

‘And then, one woman followed me (and then) dragged me inside.’

(Buitimea; kamam: 51)

In consequence, Yaqui provides good examples for re-examining the ranking of the Interclausal semantic hierarchy. One possibility is to propose a scale like purpose > simultaneous, sequential > reason > inferred temporally ordered events > temporally unordered events. That is, that the so-called circumstance relations specify the temporal relations hold between the two events; lower in the hierarchy are those linkages expressing a lesser degree of semantic cohesion between the propositional units, such as temporality can be inferred (or not) among the units linked in the complex structure.

6. Final comments

This paper describes the major features defining purpose, reason and temporal adverbial constructions in Yaqui. Based on the selection of the CLM, the identity and coding of the dependent subject, and the TAM operator information, it has been shown that simultaneous and sequential clauses show a higher degree of syntactic bonding in comparison to reason clauses, but a less tight linkage when compared with purpose structures. In order to reflect the Yaqui adverbial clause facts, a revision of the Interclausal semantic hierarchy is then suggested, such as purpose outranks simultaneous and sequential relations, and then reason outranks inferred temporally ordered events. It is expected that further studies will verify the cross-linguistic relevance of the proposed semantic scale.

List of abbreviations

ACC: accusative, COMP: completive, CLM: clause linkage marker, DES: desiderative, DEM: demonstrative, DET: determiner, DIR: directional, DM: discourse marker, GEN: genitive, IMP: imperative, INS: instrument, INT: intensifier, LOC: locative, NEG: negation, NOM: nominative, NMLZ: nominalized, PASTC: past continuous, PASS: passive, PFV: perfective, PL: plural, POT: potential, PRS: present, PURP: purpose, RDP: reduplication, REFL: reflexive, SG: singular, VBLZ: verbalizer.

References

- Bickel, Balthasar. 1993. Belhare subordination and the theory of topic. In *Studies in Clause Linkage*, Karen H. Ebert (ed) 23-55. Zürich: ASAS.
- Cristofaro, Sonia. 2003. *Subordination*. New York: Oxford University Press.
- Cristofaro, Sonia. 2013. 'When' Clauses. In *The World Atlas of Language Structures Online*, Matthew Dryer, and Martín Haspelmath (eds). Leipzig: Max Planck Institute for Evolutionary Anthropology. < <http://wals.info/chapter/126> >

- Dedrick, John and Eugene Casad. 1999. *Sonora Yaqui Language Structure*. Tucson: The University of Arizona Press.
- Diessel, Holger. 2005. Competing motivations for the ordering of main and adverbial clauses. *Linguistics* 45: 449-470.
- Diessel, Holger. 2008. Iconicity of sequence: A corpus-based analysis on the positioning of temporal adverbial clauses in English. *Cognitive Linguistics* 19 (3): 465-490.
- Dixon, R.M.W. and Alexandra Aikhenvald. 2009. *The Semantics of Clause Linking*. Oxford: Oxford University Press.
- Escalante, Fernando. 1990. Voice and argument structure in Yaqui. Ph.D. dissertation, University of Arizona.
- Foley, William and Robert D. Van Valin, Jr. 1984. *Functional Syntax and Universal Grammar*. Cambridge: Cambridge University Press.
- Givón, Talmy. 1980. The binding hierarchy and the typology of complements. In *Studies in Language* 4: 333-77.
- Givón, Talmy. 2001. *Syntax. An Introduction*. Amsterdam/Philadelphia: John Benjamins.
- Guerrero, Lilián. 2006. *The Structure and Function of Yaqui Complementation*. Munich: Lincom.
- Guerrero, Lilián. 2014. Temporal adverbial sentences in Yaqui. Paper presented at the *Coordination and Subordination in Lisbon*. University of Lisbon.
- Guerrero, Lilián. Submitted. Purpose and causal sentences in Yaqui. *International Journal of American Linguistics*.
- Guerrero, Lilián and Robert D. Van Valin, Jr. 2004. Yaqui and the analysis of primary object languages. *International Journal of American Linguistics* 70: 3, 290-319.
- Haiman, John. 1985. *Natural Syntax: Iconicity and Erosion*. Cambridge: Cambridge University Press.
- Lindenfeld, Jacqueline. 1973. *Yaqui Syntax*. Berkeley: University of California Press.
- Noonan, Michel. 2007. Complementation. In *Language Typology and Syntactic Description, Volume 2: Complex Constructions*, Timothy Shopen (ed) 42-140. Cambridge: Cambridge University Press.
- Silverstein, Michael. 1976. Hierarchy of features and ergativity. In *Grammatical Categories in Australian Languages*, R.M.W. Dixon (ed) 112-171. Australian Institute of Aboriginal Studies.
- Van Valin, Robert, Jr. 2005. *Exploring the Syntax-Semantics Interface*. Cambridge: Cambridge University Press.