Adverbial subordinators in Yaqui

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1. Introduction. The selection and form of the subordinating morpheme has been a crucial topic in the study of adverbial subordination, for the reason that they can specify the semantic relation between the main clause and the adverbial clause. There are two types of adverbial subordinators (Thompson et al 2007): (i) grammatical morphemes with no lexical meaning (e.g., English *to*, as in *to buy beer*), and (ii) grammatical morphemes with lexical content (e.g., English *before*, *when*, *if*). In languages of the world, subordinating morphemes, like conjunctive elements and adpositions, may be prepositional or postpositional, free or bound (Dryer 2013).

Previous works on Yaqui, a Southern Uto-Aztecan language (ISO cod: yaq), have described some basic features of adverbial clauses based on the selection of the subordinator (Lindenfeld 1973; Dedrick and Casad 1999). In particular, Lindenfeld (1973: 81) claimed that in Yaqui "there are two basic types of subordinated clauses: those marked by *-kai*, a general subordinator, and those marked by specific subordinators such as *ella'apo* 'although', *kielekun* 'so that' and the like". Thus, the clause in (1a) taking *-kai* allows for multiple adverbial readings, while that one taking *kielekun* in (1b) expresses a causal relation. The examples come from Lindenfeld (1973: 82-84).[1]

(1) a. *Aapo   lipti-tu-ne   [tuisi   tekipanoa-kai]*
      3SG.NOM blind-become-POT   much   work-CLM
      'Working hard will make him blind.'
      'He will become blind if he works hard.'
      'When he works hard, he becomes blind.'

   b. *Empo   si kusisi nooka-Ø [kielekun ne   kaa enchi   hikkaha-Ø]*
      2SG.NOM INT fast   speak-PRS CLM   1SG.NOM NEG 2SG.ACC understand-PRS
      'You speak so fast that I do not understand you!'

In this paper, I offer a corpus-based study of Yaqui adverbial subordinators.[2] The analysis of the data suggests a complex distribution and use of these linkage markers. First, in contrast to relative and complement subordinators which are always final and bound, adverbial subordinators can occur in both positions, clause-final and clause-initial; the former are bound morphemes, and the latter are free particles. Second, there are two types of clause-final subordinators: markers without lexical meaning, such as *-kai* and *-o*, and markers with lexical content, like the postposition *-betchi'ibo* '(in order) to, for'. Initial subordinators such as *kielekun* 'so that, since' do have lexical meaning. Third, the two most productive final

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subordinators, the markers *-kai* and *-o*, can introduce several adverbial clauses including temporal, purpose, manner, concessive and conditional. In fact, these two subordinating morphemes show a consistent, though not obligatory distribution: while *-kai* is used when the main and dependent subjects are the same, *-o* tends to occur when the subjects are different, i.e., switch-reference marking. Forth, the initial adverbial subordinators differ from any other linkage markers, as they do not demand structural dependency features in the linked clause. In Yaqui, relative, complement and adverbial clauses taking final subordinators demand a genitive or accusative subject when present inside the linked clause. In contrast, initial subordinators such as *kielekun* require a nominative subject in the adverbial clause.

The contrasts observed among the adverbial clauses taking final subordinators and those introduced by initial markers suggest that the latter may be relatively new in the Yaqui grammar. Indeed, adverbial particles such as *kielekun* 'so that' and the like, were not mentioned in Buelna's work (1890). As new adverbial particles with lexical content, they seem to adopt the structural features of coordinate sentences rather than subordinate constructions in the language.

2. Yaqui sentences. This section briefly introduces some aspects of Yaqui grammar that are relevant to the discussion of adverbial constructions. These include the morpho-syntax of simple clauses (§2.1), as well as relative (§2.2) and complement clauses (§2.3).

2.1. Simple clauses. Yaqui is a synthetic/agglutinating, head-final, primary object language (Lindenfeld 1973; Dedrick & Casad 1999; Guerrero & Van Valin 2004). It is the only Southern Uto-Aztecan language still spoken where case marking on nominals is preserved. The nominative case is unmarked (2a), and the accusative is marked by the suffix *-ta* (2b). There is no dative case but postpositions mark oblique core arguments, as can be seen in (2b). Determiners are morphologically marked too; when the NP is accusative, the determiners are marked by *-ka*; oblique NPs are marked by *-e*. Case markers and the plural suffix *-(i)m* are mutually exclusive in nominals and determiners.

(2)   a. *U   goi-Ø   u-ka   chu'u-ta   bicha-k*
          DET   coyote-NOM   DET-ACC   dog-ACC   see-PFV
          'The coyote saw the dog.'

      b. *Peo-Ø   u-e   jamut-ta-u   etejo-k*
          Pedro-NOM   DET-OBL   woman-ACC-DIR   chat-PFV
          'Pedro chatted with the woman.'

      c. *Inepo   u-me   jamuch-im   nooka-ne*
          1SG.NOM   DET-PL   woman-PL   talk-POT
          'I will talk to the women.'

Yaqui shows a rigid SOV word order, though other arrangements are possible, e.g., the logical subjects and objects can follow the verb for a specific pragmatic function (Guerrero & Belloro 2010). There are also some constraints with respect to the ordering of full and reduced pronouns (Table 1): while full pronouns behave as lexical elements in terms of their distribution, see the example in (2c) above, reduced nominative pronouns behave as "second position" clitics (3a), and reduced accusatives (available only for 3rd person) cliticize to the

verb (3b). There is a third paradigm for pronouns associated to postpositions, i.e., oblique arguments and adjuncts. 3rd person pronouns serving as subject tend to be covert (i.e., missing argument or zero).

TABLE 1. Yaqui pronominal system

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

(3) a. *Yookoria-po=ne   sewa-m   jinu-k*
        morning-LOC=1SG.NOM   flower-PL   buy-PFV
        'In the morning, I brought some flowers.'

     b. *U   jamut -Ø   a=bicha-k   jita-nenenki-wa-po*
        DET   woman-NOM   3SG.ACC=see-PFV   thing-RED.sell-PAS-LOC
        'The woman saw him in the market.'

The language presents a rich postpositional system (Table 2) that semantically encodes a wide range of spatial, temporal and associative meanings. Some of these postpositions are always bound, while others may appear as free form in certain contexts. Most have a single form, e.g. the locative *-po* 'in, on' in (3a-b) above, but some may vary in form depending on phonological, morpho-syntactic or semantic factors. For instance, the directional marker tends to be *-u* when the phrase is non-final (4a), otherwise it is *-wi* (4b); when the noun is plural, then the forms are *-meu/-mewi* (4c). Most postpositions take a nominative complement, but some take an accusative noun (e.g., *-betchi'ibo* 'for'); for some others, the case marking depends on the animacy of the referent; this is the case of *-mak* 'with' in (4d-e). A limited number of postpositions can also serve as clausal subordinators.

TABLE 2. Postpositional system

Directional (sg):	*-u / -wi*	Proximal contact (sg) 'at, on'	*-t, -chi*
Directional (pl):	*-meu /- mewi*	Proximal contact (pl) 'at, on'	*-met*
Directional (toward):	*-bicha*	Proximal 'near, close'	*naapo*
Comitative:	*-mak/-make*	Positional 'beside, from'	*(be)tana*
Instrumental (sg):	*-e, -ae*	Positional '(on) the top of'	*jika*
Instrumental (pl):	*-mea*	Positional 'together'	*nau*
Benefactive, purpose:	*-betchi'ibo*	Positional 'under, beneath'	*betuk*
Locative (space & time):	*-po*	Positional 'in front of, by'	*beas*
Limiter 'until'	*tajtia*	Positional 'over'	*bepa*

(4) a. *Peo-Ø   teopo-u   siika*
        Peo-NOM   church-DIR   go.SG.PFV
        'Pedro went to the church.'

b. *U-me ili   usi-m   saja-k   eskuela-wi*
   the-PL little   child-PL   go.PL-PFV   school-DIR
   'The children went to the school.'

c. *U-me ili   usi-m   saja-k   bem   eskuela-im-mewi*
   the-PL little   child-PL   go.PL-PFV   3PL.GEN   school-PL-DIR
   'The children went to their schools.'

d. *Kajlos-Ø   jamut-ta-mak   e'etejo-k*
   Carlos-NOM   woman-ACC-COM   chat-PFV
   'Carlos talked with the woman.'

e. *Jeemam   seboraka into kokoi siari-mak   bwasai-tu-k   si   kia*
   liver.PL   onion   and chili   green-COM   cook-VBLZ-PFV   very   good
   'The liver cooked with onion and green chili is delicious.'

Except for a few suppletive forms, verbs do not express person or number. The usual situation for the tense-aspect-mood (TAM) verbal system (Table 3) is to display a range of meanings, including tense-aspectual values and distinct mood/epistemic states.

TABLE 3. Tense-Aspect-Mood (TAM) verbal system

V-*Ø*	Present	RDP-V	Habitual
V-*k(a)*	Past perfective	RDP-RDP-V	Iterative, repetitive
V-*n*	Past continuative	V-*su*	Completive
V-*ne*	Potential, future	V-*'ean*	Hypothetical
V-*na*	Potential, future passive	V-*maachi*	Obligation

Broadly speaking, a subordinate clause is understood as a cause that is (a part of) a constituent in another clause. A formal definition of a subordinate clause is a complex task since subordination can be expressed in a variety of different structures in the languages of the world (Cristofaro 2003). As for Yaqui, a subordinate clause can be identified by the selection of the subordinator, the coding of core arguments (especially, co-referential participants), and the coding of TAM information of the linked verb (for details, see Guerrero 2006 and further works). The description that follows focuses on the subordinator and the lexical coding of the dependent subject only, as these dependency features would be relevant in our discussion of adverbial subordinators.

2.2. Relative clauses. Relative clauses are expressed via nominalization in Yaqui (Álvarez 2012; Guerrero 2012). Two clause types are identified depending on the role of the head noun and the subordinator. If the head noun serves as the dependent subject, as in (5a), the modifying unit takes the linkage marker *-m(e)*. If the head noun serves as the direct or oblique argument of the verb in the linked unit, as in (5b), then the subordinating morpheme is *-'u*. Although less common, the locative postposition *-po* may introduce a locative (spatial and time) relative clause, as in (5c).

(5) a. *U   o'ou-Ø$_i$ [enchi   _$_i$ bicha-ka-me]   siika*
     DET man-NOM   2SG.ACC   see-PFV-CLM   go.SG.PFV
     'The man who saw you, left'

 b. *U-me   o'ou-im$_i$ [em   _$_i$ bicha-ka-'u]   saja-k*
     DET-PL man-PL   2SG.GEN   see-PFV-CLM   go.PL-PFV
     'The men who you saw, left.'

 c. *Poso-po$_i$ [kuchu'm   ane'e-Ø-po]   a   wo'ota-ne*
     pond-LOC   fish.PL   exist-PRS-LOC   3SG.ACC   throw-POT
     'Throw it (the fish's skin) in the pond where the fishes are.' (Johnson 1:2)

In subject relative clauses, there is an obligatorily missing argument in co-reference with the head noun.[3] In non-subject relative clauses, the linked subject is overt and marked as genitive, when pronominal (5b), or accusative, when nominal.

2.3. Complement clauses. There are four complement strategies in Yaqui. The first two are very productive (the co-lexicalized and the syntactic structures), while the others are limited to a few complement-taking predicates (the nominalized and the participial-like structures). The first complement type consists of a V1-V2 structure, where the two events are usually joined together without a subordinating morpheme, as can be seen in (6a-b); cognitive and speech act verbs allow the marker *-t(i)*, which immediately follows the linked verb, as in (6c).

(6) a. *Peo-Ø$_i$ Joan-ta$_j$ _$_i$ bwite-roka-n*
     Peo-NOM   John-ACC   run.SG-want-PASC
     'Pedro promised John to run.'

 b. *Peo-Ø$_i$ Joan-ta$_j$ _$_j$ bwit-tua-k*
     Peo-NOM   John-ACC   run.SG-cause-PFV
     'Pedro made John run.'

 c. *Goyo-Ø   Tibu-ta   wakas-ta   etbwa-ne-t-'ea-n*
     Goyo-NOM   Tibu-ACC   cow-ACC   steal-POT-CLM-think-PASC
     'Goyo thought Tibu would steal the cow.'

In a co-lexicalized complement structure, the main and dependent subjects may, but do not need to be the same. Thus, verbs demanding identical subject (actor control verbs) code the subject once as a nominative argument; this is the case of phrasal, modals and psych-action matrix verbs (6a). Verbs demanding the main object to be the same that the dependent subject (object control verbs), code the co-referential argument once as an accusative argument; this is the case of causative and jussive verbs (6b). Speech-act, propositional attitude, and mental matrix verbs (6c) also take an accusative dependent subject.

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[3] In the examples, co-referential arguments are co-indexed; the '_' is for illustrative purposes only and indicates a missing argument in co-reference with a main argument. The position of '_' seeks to reflect the expected position for reduced pronouns (e.g., second position clitics for subjects), rather than full pronouns. Like nominal phrases, full pronouns rarely serve as co-referential arguments inside subordinate clauses in Yaqui.

The syntactic type takes a complement marked by the subordinating morpheme -'u, as in (7a). Regardless of the identity of the subjects, the linked subject needs to be overt and marked accusative. There are very few examples of the locative postposition -po introducing the complement of some mental predicates. In some complements taking -po, the subject consists of a genitive pronoun when co-referential with the main subject, as shown in (7b).

(7) a. *Peo-Ø   [kaba'i-m   enchi   jinu-ka-'u]   suale-n*
       Peo-NOM   horse-PL   2SG.ACC   buy-PFV-CLM   believe-PASC
       'Peo believed that you bought the horses.'

    b. *Inepo   si   majae-n   [ka   nim   loteria-ta   yo'o-ne-po]*
       1SG.NOM   INT   be afraid-PASC   NEG   1SG.GEN   lottery-ACC   win-POT-CLM
       'I was afraid I would not win the lottery.'

The last two complement strategies are very restrictive and limited to a few predicates, e.g., *bo'obicha* 'expect'*, teenku* 'dream/imagine', some uses of *'ean* 'believe/have the feeling of', as well as direct perception. The nominalized-like strategy that is depicted in (8a) is marked by *-m(e)* plus the accusative suffix *-ta*, and it requires different subjects.[4] The participial-like structure in (8b) takes *-kai* and requires identical subjects. In the former, the dependent subject must be accusative; in the latter, the subject must be omitted.

(8) a. *Tuuka   beako nepo   [Peo-ta   enchi   kuna-ka-m-ta]   teenku-k*
       yesterday night   1SG.NOM   Peo-ACC   2SG.ACC   marry-PFV-CLM-ACC   dream-PFV
       'Last night, I dreamed of Pedro marrying you.'

    b. *Tuuka   beako Lupe-Ø_i   [Peo-ta   __i   kuna-kai]   teenku-k*
       yesterday night   Lupe-NOM   Peo-ACC   marry-CLM   dream-PFV
       'Last night, Lupe dreamt of (herself) marrying Pedro.'

That is, relative and complement clauses make use of final and bound subordinators, i.e., suffixes on the verb that are also at the end of the dependent clause. Contrary to Lindenfeld's (1973: 102) finding for the Arizona variant, the loanword *ke* 'that' does not serve as a major complement subordinator. The use of postpositions as complement subordinators is exceptional and limits to the locative *-po*.[5] Since final and bound morphemes introducing relatives and complements lack lexical meaning, there are some functional overlaps: *-me* marks subject relative clauses and the uncommon nominalized complement; *-'u* introduces non-subject relatives as well as the syntactic complement. As we will see next, *-kai* is mainly an adverbial marker but it occasionally marks a participial-like complement, as shown in (8b).

3. Adverbial subordinators, some generalities. Thompson et al (2007: 238) propose two types of subordinating morphemes: (i) grammatical morphemes with no lexical content (e.g.,

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[4] See Guerrero (2012) for a detailed discussion on the distinction between relative clauses and complements taking *-'u* and *-me* in Yaqui.

[5] The subordinator *-'u* may be historically related to the directional *-u* shown in (4a-b). Synchronically, *-'u* does not behave as an adposition anymore, since it demands a predicate or clause as a complement. In contrast, *-po* may combine with a nominal, a predicate or a clause.

English *to* as in *to buy beer*, and (ii) grammatical morphemes with lexical meaning (e.g., English *before*, *when*, *if*). Adverbial markers with lexical content denote semantically richer notions between the two linked units, such as comparison, temporality, causality, purpose, and circumstance (Nordstrom 2010). Yet, the categorical status of these subordinators is an open question. They can be considered as adpositions (along with adverbial particles), or as complementizers (along with elements such as *that, whether, if*). According to Kortmann (1997: 241), adverbial subordinators differ from complementizers because they assign a theta-role to their complements, hence they determine the interclausal semantic relation. Because of this, they can be treated as a kind of predicative adpositions (Jolly 1993).

Based on a sample of 659 languages of the world, Dryer (2013) explore the form and distribution of adverbial subordinators. The author found that the use free particles at the beginning of the adverbial clause is the preferred strategy (398 languages of his sample), followed by separated words at the end of the dependent clause (96 languages), or more than one adverbial subordinator (93 languages). In comparison, the use of suffixal adverbial subordinators is slightly less common (64 languages).

In opposition to relative and complement subordinators, there are two types of adverbial subordinators in Yaqui: free particles at the beginning of the adverbial clause, and suffixal subordinators. In other words, this language makes use of the most common strategy cross-linguistically to introduce adverbial clauses (initial particles) as well as the less common marking (final and bound morphemes). The first column in Table 4 lists the Yaqui adverbial subordinators documented by Lindenfeld (1973) for the Arizona variant; the second column includes those found in the Sonoran variant by Dedrick & Casad (1999).

TABLE 4. Adverbial subordinators in Yaqui

Lindenfeld	Dedrick & Casad	adverbial clause type
-ka(i)	*-ka(i)*	general subordinator
-o	*-o*	general subordinator '*when/if*'
	-patchi	'upon' clause
	-tahtia	'until' clause
	-po	locative clause
	-amcha	simulfactive 'as if' clause
-bae-kai	*-pea-kai*	'in order to' purpose clause
-betchi'ibo		copulative 'is for X' purpose clause
-tek		hypothetical conditional clause (CLM o TAM?)
	'o'oben	concessive 'even though' clauses
(nasuk) huni'i	*huni'i*	'*in spite of/even/although*' clause
ella'apo		'although' clause
kielekun		causal clause
bwe'ituk, porke	*bwe'ituk*	reason clause
parake, pake		goal, purpose clause
kwando		'when' clause
si		'if' conditional clause
sino		'if not, else' conditional clause

Diessel (2001, 2005) has also established some interesting facts regarding the ordering of the main and the adverbial clauses. 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 clauses 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. While adverbial clauses that tend to precede the main clause only occur in OV languages, adverbial clauses that are commonly pre- and post-posed occur in both VO languages and a significant minority of OV languages (Diessel 2001: 442). Yaqui shows a rigid SOV order but 64% of the adverbial clauses in my sample are final (Table 5).

TABLE 5. Distribution between main and adverbial units in Yaqui in corpus[6]

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

Diessel also suggests that there is a strong correlation between the ordering of the main and adverbial units and the position of the subordinator. In his sample, adverbial clauses including a final subordinator tend to precede the main clause, while clauses marked by an initial subordinator are commonly found in both initial and final position regardless of the order of verb and object (Diessel 2001: 443). As for Yaqui, this correlation is also shown in Table 5. Whereas clauses with initial subordinators strongly prefer to be final, adverbial clauses taking final markers do not show any strong preference. In fact, Yaqui seems to follow a mixed order pattern (Diessel 2001: 444-445) based on the semantic relation of the two units: temporal and manner clauses tend to be initial, while cause/reason and purpose tend to be final (Table 6). For some adverbial relations, the examples are few in number in order to make any generalization.

TABLE 6. Order of main and adverbial units based on their semantics

	adverbial-main	main-adverbial	Total
Reason	1	130	131
Causal	3	55	58
Restriction		2	2
Conditional	5	3	8
Temporal	148	24	172
Purpose	35	185	220
Manner-like	33	21	54
Other relations	12	3	15
	237	423	660

In what follows, I examine the most common adverbial subordinators in Yaqui based on its distribution and use.

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[6] The analysis is based on a corpus comprised of several narratives from the Sonoran variant; the sample includes traditional and folk stories, life stories and short conversations (approximately 4,900 clauses). Though sentences from direct elicitation are also analyzed to illustrate specific purpose, they are not included in Tables.

4. Yaqui adverbial subordinators. As mentioned before, Lindenfeld (1973: 81) claimed that "there are two basic types of subordinated clauses: those marked by *-kai*, a general subordinator, and those marked by specific subordinators such as *ella'apo* 'although', *kielekun* 'so that' and the like". The examination of adverbial clauses from a narrative corpus provides evidence for a slightly more complex distribution of Yaqui adverbial subordinators.

4.1. The sample. The adverbial subordinators found in my corpus are listed in Table 7. Some markers are the same than those mentioned in Lindenfeld and Dedrick & Casad (Table 4 above); others mentioned before rarely occur in the sample (e.g., *-patchi* 'upon', *-amcha* 'as if', *o'oben* 'even though'). The use of Spanish loanwords such as *porke* 'because', *pake/ parake* '(in order) to', and *kwando* 'when', is much less common in the Sonorant variant; all the examples of *porke* in my sample come from young bilingual speakers. Notice also that some adverbial relations can be expressed by alternative structures, e.g. cause, purpose and temporal clauses, whereas others make use of a single structure, e.g. manner clauses. Because of the nature of the sample, some adverbial relations are uncommon, e.g., conditionals.

      Both, Lindenfeld and Dedrick & Casad include the particle *juni'i*, commonly glossed as 'also, yet, even, although, in spite of', as a subordinating morpheme. However, while clauses taking *juni'i* are very common in the sample, the use of this adverbial particle is hard to analyze at this point of the analysis. On one hand, this particle may appear at different positions in a sentence; in the fragment in (9a), there are three examples of *juni'i* in different position. On the other hand, it seems that *juni'i* does not need to take any nominal, predicate or clausal as a complement; see the first line in (9a) where it occurs at the beginning of clause. In (9b), this particle follows a *-kai* clause but, rather than an 'even though' adverbial reading, the sentence is interpreted as a manner clause. In (9c), *juni'i* is the only particle that allows a concessive reading. Because of its own complexity, adverbial clauses taking *juni'i* are not included in this analysis.

(9) a.   *Bweta jachim-po juni'i   ju'u   in   koba-po   jippue-'u, jiba*
        CLM   what-LOC yet   DET   1SG.GEN head-LOC   have-CLM   always

        junaman   aane-Ø, in   jiapsa-po naate-kai. Jaibu   bu'u-m wasuktia-m
        over.there exist-PRS 1SG.GEN heart-LOC begin-CLM already big-PL   year-PL

        sim-su-k   juni'i, ju-me   waati-m   into ju-me   tenkui-m jiba
        go-COMPL-PFV even   DET-NOM memory-PL and   DET-PL dream-PL always

        in   takaa-po jiapsa. Ketun=ne   au   waate-Ø   juna-ka
        1SG.GEN fruit-LOC heart   yet=1SG.NOM self   remember-PRS DEM-ACC

        yeu=sika-'u   kia iliki-k   juni'i   kaa   kopta-Ø.
        out=go.SG.PFV-CLM INT little-ACC even   NEG   forget-PRS
        '[When I become 14 years old, my life changed]. But my thought (lit. what I have in my head) is over there, since the beginning of my life. Even though several years had passed, my memories and my dreams still live inside of me (lit. always the fruit of my heart). I still remember what happened, I don't forget even the most little things.' (Buitimea; Pesio betanaa: 1-7).

Adverbial relation	initial and free subordinator	No. clauses	suffixal subordinator	No. clauses	double subordinator	No. clauses	Total clauses in the sample
Reason	*bweituk*	97					131
	porke	34					
Causal	*kiali'ikun*	33	*-betchi'ibo*	25			58
	por eso	1					
Concessive	*ela'apo*			2			2
Purpose							220
final			*-betchi'ibo*	92			
purpose of intention			*-bae-kai*	103			
purpose of motion			*-se-kai*	25			
Temporal							172
sequential			*-o*	60	*ketunke -o/-kai*	10	
			-kai	27	*-su-o/-kai*	8	
simultaneous			*-o*	30			
			-kai	33			
delimitative			*-tajtia*	4			
Conditional			*-o*	4	*si -o*	1	8
			-tek-o	1	*si -tek-o*	2	
Manner/circumstance							54
means			*-kai*	22			
being/having circumstance			*-kai*	24			
negative circumstance			*-kai*	8			
Other relations			*-kai*	10			15
			-o	5			
		165		475		21	660

TABLE 7. Adverbial constructions in Yaqui taking a subordinator

b. *[Junama'a   si   tebae   koko-ka]   juni'i te   ama   jooka*
    over.there INT   hunger   die.PL-CLM   yet   1PL.NOM   there   live.IMPFV
    'Dying of hunger, we still lived over there.' (Silva; Hilario: 204)

c. *Santa   iklesia-po   net   na-t   yaja-k,*
    Holly   church-LOC   1SG-LOC   together-LOC   arrive.PL-PFV

    ju-me'e   tetekia-ka-me,   ju-me'e   Cantoora-m,   Kiiyojteim,
    DET-PL   RDP-work-PFV-CLM   DET-PL   singer-PL   Kiiyojteim,

    num   bea   kaa   ne   jeewite-k   juni'i
    there   DM   NEG   1SG.NOM   accept-PFV   even
    'As for the persons in charge, the singers or Kiiyojteim, they all reunited in the church
    with me although I did not accept.' (Silva; Hilario. 47-8)

The description of Yaqui adverbial subordinators begins with specific subordinators with
lexical content, and then moves to the distribution of *-kai* and *-o*, the two most productive but
also most complex adverbial subordinators.

4.2. Specific subordinators. There are two types of subordinators which mark adverbial
clauses for their semantic relationship to the main clause. The first type, originally mentioned
by Lindenfeld, involves adverb-like initial particles. In my corpus, the two most common
initial subordinators also introduce a specific semantic relation (Guerrero 2014): *bweituk*
'because' (occasionally *porke*) expresses the motivation or explanation for the event described
in the main clause, as depicted in (10a); *kiali'ikun ~ kielikun* denotes the result or
consequence of the event described in the main unit, as in (10b).

(10) a. *¡ju-ka   tampareo-ta   yaati-tua-'e!*
         DET-ACC   drummer-ACC   play-cause-IMP

         [bwe'ituk   kompae-Ø   a'abo   weye-k]
         CLM   compadre-NOM   here   walk.SG-PFV
         'Stop the drummer because my *compadre* is coming.' (Buitimea; dream:155)

     b. *U   yoeme-Øᵢ   kaa a=eya-k   [kiali'ikun __ᵢ kaa   a=mabeta-k]*
         DET man-NOM   NEG 3SG.ACC=trust-PFV CLM   NEG   3SG.ACC=accept-PFV
         'The man didn't trust him, so he didn't accept [the food].' (Silva; fox:17)

The adverbial particle *ella'apo* 'although, it does not matter' belongs to this group too, and it
introduces some sort of restriction subordination (Lindenfeld 1973: 85). In the sample,
however, there are only two examples involving *ella'apo*. The clause in (11a) comes from
Lindenfeld's work; the one in (11b) comes from the corpus. Notice that *ela'apo* in (11b) is
followed by *juni'i*.

(11) a. *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)

   b. *Ne   am=jikkaja,   kaa   tua   in   ju'une,*
      1SG.NOM   3PL.ACC=listen   NEG   INT   1SG.GEN know

      [ella'apo   juni'i   intok=bea   ne   ameu   chai-pea   juni'i]
      CLM   even   DM=DM   1SG.NOM   3PL.DIR   yell-desire   even
      'I listen to them, in my limited conscience; even so, I want to yell them.'
                                                    (Buitimea; malaguero:158)

Further, *bweituk, kiali'ikun* (and *ela'apo*) stand out among the Yaqui subordinators not only because of their position and lexical meaning, but also because they demand a nominative subject in the adverbial clause. In (10a) above, the main and the linked subjects are different, then the linked subject is overt and takes nominative case, e.g. *compadre*; in (10b), the two subjects are the same, and there is a co-referential missing argument in the linked unit. In the adverbial clauses in (11), the subject is also nominative. Nominative subjects are completely disallowed in relative, complement and several other adverbial clauses in Yaqui.

   Although they do not occur in my corpus, Lindenfeld shows that temporal clauses introduced by *kwando* 'when', and purpose clauses taking *parake* 'in order for' also demand nominative subjects. Two of her examples are illustrated in (12).

(12) a. *[Kwando em   papa-Ø   yepsa-k]   ne   lihta-tu-ne]*
        CLM   2SG.GEN father-NOM   arrive.SG-PFV   1SG.NOM   ready-VBLZ-POT
        'When your father arrived, I will be ready.' (Lindenfeld 1973: 83)

   b. *Ame-u=te   chachae-ne   [parake bempo   itom   bit-ne]*
      3PL-DIR=1PL.NOM   RDP.call-POT   CLM   3PL.NOM   1PL.ACC   see-POT
      'We will keep calling them in order for them to see us.' (Lindenfeld 1973: 84)

The second type of specific subordinators involves postpositions: the locative *-po*, as well as the directional *-u/-wi* can introduce locative clauses. It is still unclear if there is a formal distinction between locative relatives, as depicted in (5b) above, and locative adverbials, as in (13), since both may restrict the identity of a head noun and delimit the event within a time/location frame in discourse.

(13) a. *Naman   ba'a-po   bauba'a-po   [kaa   wawake-n   wasuktia-m-po]*
        DEM   water-LOC   lake-LOC   NEG   RDP.dry-PASC   year-PL-LOC
        'For years, the water in the lake never dried out.' (Silva et al; turtle&coyote: 2)

   b. *'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)

Yaqui has several syntactic strategies to express purpose clauses (Guerrero 2012, under review) and one of these structures takes the postposition *-betchi'ibo* 'for'. Purpose clauses taking *-betchi'ibo* as a subordinator are the only purpose linkage allowing both, same- and different-subjects. When the subjects are the same, as in (14a), there is a missing argument in co-reference with the main subject; when the subjects are different, as depicted in (14b), the dependent subject must be overt and take accusative case.

(14) a. *Peo-Ø$_i$ a'abo   siika   [_$_i$ ji'i-bwa-betchi'ibo]*
        Peo-NOM   here   go.SG.PFV   something-eat-CLM
        'Peter came here in order to eat.'

    b. *Peo-Ø$_i$ 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.'

Álvarez (in press) was the first one to notice that *-betchi'ibo* may also introduce a causal relation. A detailed analysis contrasting purpose and causal sentences (Guerrero 2014, under review) shows that *-betchi'ibo* indeed expresses a direct cause-effect relation. Interestingly, cause clauses taking *-betchi'ibo* are structurally differ from those clauses introduced by *bweituk* and *kiali'ikun*. Whereas the initial causal subordinators demand a nominative subject, as seen in (10) above, a *-betchi'ibo* clause takes a genitive subject, when pronominal (15a), or an accusative subject, when nominal (15b).[7]

(15) a. W*ikosa-ta =ne$_i$ baajta-k   [in$_i$ ousi   ji-bwa-ka-betchi'ibo*]
        bell-ACC= 1SG.NOM   loosen-PFV   1SG.GEN   a.lot   thing-eat-STA-CLM
        'I loosen my bell because I ate a lot.'

    b. *In   maala-Ø   omte   [puato-ta   jamte-ka-betchi'ibo]*
        1SG.GEN   mother-NOM   angry-PRS   plate-ACC   break-STA-CLM
        'My mother is angry because the plate is broken.'

That is, the Yaqui language has two types of subordinators denoting the semantic relation between the main and the adverbial clauses. First, *bweituk* 'because' and *kiali'ikun* 'so that', introduce reason and causal clauses, respectively; *ella'apo* 'although' introduces some sort of restriction clause. These initial subordinators demand a nominative subject in the adverbial unit. Second, some postpositions can serve as adverbial subordinators. This is the case of the locative *-po*, the directional *-u*, and the beneficiary *-betchi'ibo*. The postpositions *-po* and *-u* introduce locative clauses, while *-betchi'ibo* mark purpose as well as direct cause structures. As happens with relative and complement subordinators, postpositions serving as adverbial subordinators require non-nominative subjects, i.e. genitive or accusative subjects.

4.3. General subordinators. Following Nordstrom (2010: 95), the neutral term general subordinator means subordinators without rich lexical content, as opposed to adverbial (specific) subordinators. The general subordinator only has a meaning in relation to the clause

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[7] In §3.2 we saw that genitive subjects in the dependent unit is a feature of relatives rather than complement or adverbial clauses. Thus, the *-betchi'ibo* cause clauses in (15) may be a case of nominalized-like adverbial causal.

it is heading, whereas the adverbial subordinator denotes under what circumstance the matrix event takes place, e.g., temporality, causal or conditional circumstances.

In Lindenfeld's work, *-kai* is described as carrying an undifferentiated meaning of subordination, and so it may express several types of semantic associations all at once between two statements. In opposition, she refers to *-o* as a type of specific subordinator and so it is glossed as 'when/if' (Lindenfeld 1973: 82-83). In my sample, both *-kai* and *-o* introduce several adverbial clauses, suggesting both can be treated as general subordinators.

According to Lindenfeld, *-kai* (or *-ka* when the clause is non-final) can introduce a manner clause, as depicted in (16a), a 'goal' purpose clause, as in (16b), as well as a clause expressing a more general adverbial meaning, as in (16c).

(16) a. *Wa-ka   kuta-ta   aapo   kaa chukta-ne [junen   aa   joa-kai]*
DEM-ACC stick-ACC 3SG.NOM   NEG cut-POT   like.this able do-CLM
'He cannot cut this stick by doing it this way.' (Lindenfeld 1973: 89)

b. *Inepo   in   koarto-wi   kibake-k   [supe-te-bae-kai]* [8]
1SG.NOM   1SG.GEN   room-DIR   enter.SG-PFV   shirt-put on-want-CLM
'I went to my room in order to get dressed.' (Lindenfeld 1973: 82)

c. *Aapo   lipti-tu-ne   [tuisi   tekipanoa-kai]*
3SG.NOM   blind-become-POT   much   work-CLM
'Working hard will make him blind.'
'He will become blind if he works hard.'
'When he works hard, he becomes blind.' (Lindenfeld 1973: 82)

The author also includes *-kai* clauses functioning as a gerund-type of clause. In (17), the dependent unit is also marked by the accusative *-ta*. The predicative element in Lindenfeld's examples consists of nouns and (derived) adjectives, rather than full verbs, e.g., some sort of secondary or depictive predication.

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[8] In previous works, I have argued that it is not *-kai* which allows the purposive meaning, but the occurrence of a co-lexicalized V1-V2 structure inside the dependent unit (Guerrero 2012, 2013, under review). That is, in the example in (a), *-bae* 'want' follows the intended event, e.g. they wanted to rest; without *-bae*, the clause is interpreted as a simultaneous clause (a´). In (b), there is a motion-*cum*-purpose linkage; without *-se* 'move in order to', the clause is interpreted as a manner clause in (b´).

  a. *Wate_i   into   [juya-ta-betukun   _i   kopan-bae-ka]   aman   rukte-k*
  someDM   tree-ACC-under   shelter-want-CLM   there   approach-PFV
  'Then some people approached there to rest under a tree (lit. wanting to rest).'

  a´. *Wate_i   into   [juya-ta-betukun   _i   kopan-ka]   aman   rukte-k*
  some   DM   tree-ACC-under   shelter-CLM   there   approach-PFV
  'Then some people approached there and rest under a tree (lit. moving & resting).'

  b. *Bwite-k   [_i   au   esso-se-ka]   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´. *Bwite-k   [_i   au   esso-ka]*
  run.SG-PFV   3SG.REF   hide-CLM
  'He ran, all the while hiding himself.'

(17) a. *Empo*   *lottila-ta-kai*   *kaa*   *yi'i-ne*
       2SG.NOM   tired-ACC-CLM   NEG   dance-POT
       'Being tired you will not dance.'

    b. *Junu*   *kuta-Ø*   *teta-ta-kai*   *kaa*   *beeti-ne*
       DET   stick-NOM stone-ACC-CLM NEG   burn-POT
       'This stick, being (made of) stone, will not burn.' (Lindenfeld 1973: 82)

With respect to *-o*, Lindenfeld mentions that it introduces time (18a) and condition clauses (18b). In temporal clauses, the loanword *kwando* 'when' may additionally introduce the adverbial unit; in conditionals, the particle *si* 'if' can also be present. A time/conditional clause as in (18c), claims the author, can be also marked by *-tek*, some sort of hypothetical verbal suffix.

(18) a. *[(Kwando) ju-ka*   *o'o-ta*   *yepsa-k-o]*   *itepo*   *saja-k*
       CLM   DET-ACC   man-ACC arrive.SG-PFV-CLM 1PL.NOM   go.PL-PFV
       'When the man arrived we left.' (Lindenfeld 1973: 81, 83)

    b. *Aapo*   *aman wee-ne*   *[(si)*   *enchi*   *aman*   *siik-o]*
       3SG.NOM   there go.SG-POT   CLM   2SG.ACC there   go.SG.PFV-CLM
       'She will go there if you go.' (Lindenfeld 1973: 83)

    c. *Aapo*   *lipti-tu-ne*   *[chikti*   *ta'apo*   *tekipanoa-tek-o]*
       3SG.NOM   blind-VBLZ-POT   every   day   work-hypothetical-CLM
       'He will become blind if ever he works every day.' (Lindenfeld 1973: 83)

In my sample, *-kai* generally introduce a simultaneous temporal clause (19a), a sequential clause (19b), a clause expressing the mean or circumstance of the main event, as in (19c), as well as some sort of negative circumstance, e.g. the 'without' clause in (19d).

(19) a. *Peo-Ø$_i$*   *muuku-k* *[Unison-po* *_$_i$* *estudiaroa-kai]*
       Peo-NOM   die.SG-PFV Unison-LOC   study-CLM
       'Peter died while studying at the Unison.'

    b. *[bea sechupti*   *_$_i$* *pensasaroa-ka]*   *ne$_i$*   *aman*   *siika*
       MD   suddenly   think-CLM   1SG.NOM there   go.SG.PFV
       'Then, after I suddenly thought [about it], I went there.' (Guerrero; Lalo:182)

    c. *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)

    d. *[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.'   (D&C:394)

I also found some examples which can be understood as a clause expressing the way in which the event described in the main clause is realized, as the examples in (20a), or a clause expressing the notion of being/having a quality, as depicted in (20b-c). Notice that the linked verb in (20b-c) consists of a stative verb without *-ta*. Yet, more data is needed to establish some generalizations in form and use of structures like those in (20).

(20) a. *¡Kubaji-make   ameu   chai-tebo!=ti   ne-u   te'e-ka   [omte-kai]*
       drum-INST   3PL.DIR   call-order=CLM   1SG-DIR   insist-PFV   be.mad-CLM
       "Order to call them with the drum", he insisted me with anger / being mad.'
                                                (Buitimea; malaguero:42)

     b. *Naa=bea emfermera-Ø$_i$ [kea _$_i$ majae-ka]   bea   am=bwise-Ø,*
        DM =DM   nurse-NOM   just   be.scare-CLM   DM   3PL.ACC=take-PRS

       u-me   ili   mampusiam
       DET.PL   little   finger.PL   (Guerrero; Lalo:321)
       'And then, the nurse, with fear/being scare, takes the little fingers.'

     c. *Bea   ba'a-po   yeu=saja-k   [kaa   tajo'ore-kai]*
       DM   water-LOC   out=go.PL-PFV   NEG   be.dress-CLM
       'They left the water without being dressed.' (Buitimea; lagartas:38)

Likewise, the final subordinator *-o* may introduce simultaneous (21a) and sequential (21b) temporal clauses, conditional (21c), and some sort of counter-factive (21d) clauses.

(21) a. *[Unison-po   nee   estudiaroa-k-o]   Peo-Ø   muuku-k*
       Unison-LOC   1SG.ACC   study-PFV-CLM   Peo-NOM   die.SG-PFV
       'When I was studying at the Unison, Peter died.'

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

     c. *[Jiba   enchi   nee   suaati-bicha-o]   ne   ya'ura-ta   tejwaa-ne*
       always   2SG.ACC   1SG.ACC   bother-see-CLM   1SG.NOM   authority-ACC   tell-POT
       'If you keep bothering me, I will tell the authorities.' (Silva et al. turtle&coyote:59)

     d. *[Kaa   nee$_i$ 'u'utte   bwite-o]   nee$_i$ bwij-'ea-n*
       NEG   1SG.ACC   strong   run.SG-CLM   1SG.ACC   grab-SHOULD-PASC
       'If I hadn't run fast, he would have grabbed me.'   (D&C:395)

This subordinator may also introduce a similarity-type of manner clause, as shown in (22a). The adverbial clause in (22b) may be interpreted as either, a temporal, causal or reason clause.

(22) a. *[Junak=bea   kaa   tua   jiak-nok-wa-o   junama   jo'araapo],*
       then=DM   NEG   INT   Yaqui-speak-PASS-CLM   there   house-LOC

ne	*yo- nok-ta*		*ta'a-taite-k*			
1SG.NOM	yori-word-ACC		learn-begin-PFV			

'As Yaqui was not spoken in that house, then I started to learn Spanish (lit. the word of the yoris, meaning the foreigners).'   (Buitimea; mundo de sueño:77)

b. [*a'a* *kuna-wa* *siik-o*] *puh-bahiya-taka* *juni* *bwaana*
3SG.ACC husband-GEN go.SG.PFV-CLM face-swell-being ADV cry
'When/since/because her husband left, her face was swollen from crying.'

(D&C: 395)

In oral narratives, these two general markers strongly prefer to encode a temporal relation. In my sample, 152 out of 180 adverbial clauses marked by *-kai* and *-o* introduce a temporal clause (Table 8). They can express a simultaneous relations (complete and partial overlap), as well as posterior and anterior sequential relations; there are some narrative 'when' clauses in the corpus too (see Declerck 1997).

TABLE 8. Temporal clauses marked by general subordinators (Guerrero 2014)

	Simultaneous reading			Sequential readings			Narrative *when*-clauses
	complete overlap	point of coincidence		posterior (*before*)	anterior (*after*)		
-kai clauses (94)	17	16	33	-	60	60	2
-o clauses (65)	15	15	30	5	22	27	9
	32	31	62	5	82	87	12

Interestingly, sequential clauses can take additional markers to specify the semantic association they establish with the main unit. Thus, *before*-clauses are highlighted by the initial adverbial particles *ketun* 'yet' and *ketun ke* 'not yet', in addition to *-o/-kai*, as illustrated in (23a). *After*-clauses can take the completive suffix *-su* (historically related to *ansu* 'finish') directly attached to the dependent verb, as in (23b). In my corpus, however, there are only 18 specific temporal clauses (10% of the sample of temporal clauses), suggesting that speakers strongly prefer to use the general clauses over the more specific expressions.

(23) a. [*kee* *Sulumai-ta$_i$* *bwij-wa-o*]
ADV.NEG Sulumai-ACC capture-PAS-CLM

aapo$_i$ *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; torokoroyi: 78)

b. *U'u* *chu'u-Ø$_i$* [_$_i$ *ji-bwa-su-ka*] *muku-k*
DET dog-NOM thing-eat-COMPL-CLM die.SG-PFV
'When the dog stopped eating, he died.'

In sum, both *-kai* and *-o* can be considered as general subordinators. In the adverbial domain, the two can introduce temporal, manner, concessive, and counter-factive clauses. In this

sample, only *-o* introduces conditional clauses, while only *-kai* can express means, positive and negative circumstances related to the main event. Occasionally, more than one subordinating morpheme may occur in the sentence in order to emphasize the semantic relation between the main clause and the adverbial clause. Like relatives and complements, adverbial clauses marked by final subordinators demand accusative subjects in the linked unit. Even though nominative subjects are allowed in adverbial clauses taking initial subordinators, they are ruled out in here.

4.4. General subordinators serving as switch-reference marking? Neither Lindenfeld nor Dedrick & Casad draw attention to a consistent, though not obligatory distribution among the two general subordinators and the identity of the subjects. It is generally the case that *-kai* is used when the main and dependent subjects are the same, as in (24a), while *-o* tends to occur when the subjects are different, as can be seen in (24b). As for the Sonoran Yaqui, I have not seen cases of *-kai* with different-subjects, but one may find some examples (three in my narrative sample) of same-subject *-o* clauses, as depicted in (24c) above.

(24) a. *Maria-Ø$_i$ Fermin-ta$_j$ bicha-k   [kafe-ta   _$_i$ saake-kai]*
          María-NOM   Fermín-ACC   see-PFV   coffee-ACC   toast-CLM
          'María saw Fermín when (she) was toasting coffee.'

      b. *Maria-Ø$_i$ Fermin-ta$_j$ bicha-k   [kafe-ta   _$_j$ saake-o]*
          María-NOM   Fermín-ACC   see-PFV   coffee-ACC   toast-CLM
          'María saw Fermín when (he) was toasting coffee.'

      c. [*Ju-ka   Sulumai-ta$_i$ omotria-u   yepsa-k-o*]
          DET-ACC Sulumai-ACC brush-DIR   arrive.SG-PFV-CLM

          _$_i$ *jaibu   kaa   enchi   tea-k*
             already NEG   2SG.ACC find-PFV   (Buitimea; toorokoyori:117)
          'When Sulumai got back to the brushes, she couldn't find you.'

The distribution of *-kai* and *-o* in the clauses in (24a-b) resemble a canonical switch-reference system. Formally, switch-reference is almost always a verbal category indicating whether or not two arguments have identical reference (Haiman and Munro 1983); functionally, it is a device for referential tracking (i.e., limiting possible range of nominal reference). In other words, the function of switch-reference systems is to avoid ambiguity of reference, especially across-clauses. The use of these two Yaqui general subordinators as switch-reference is promising although it is limited to the domain of adverbial subordination.[9] There is another pair of examples in (25) below. In addition to *-kai/-o*, the particle *juni'i* emphasizes the concessive meaning of these clauses.

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[9] The distribution of *-kai/ -o* satisfies another common property of switch-reference systems, the fact that same-subject clauses are usually the reduced version of the corresponding different-subject counterpart. In addition to the missing argument, the verb inside a *-kai* clause must be unmarked for tense-aspect-mood.

(25) a. *Ta   [ama   ejkuela-ka   juni'i]   kaa   aa   nooka*
      but   there   study-CLM   even   NEG   able   speak
      'But, even though they study there, they were not able to speak [our language].'
                                               (Félix; HVC:332)

     b. *Empo   a=uuse-k   [pochi-lai-k   a   bwasia-k-o   juni'i]*
        2SG.NOM   3SG.ACC=son.have   short-PTCP-have   3SG.ACC   tail-have-CLM   even
        'You have a son, even though he has a short tail.' (Silva et al; wildcat: 20)

The use of *-kai/-o* establishes particular co-reference patterns and lexical coding of linked subject.[10] It is generally the case that the two subjects are different in *-o* adverbial clauses; thus, the linked subject can be overt or covert (when 3rd person); when it is overt, it must be marked as accusative case. In *-kai* clauses, there is a missing argument in co-reference with the main subject. When the adverbial is sentence final, as in (19a, c) above, the co-referential subject is overtly expressed in the main clause; when the adverbial clause is at the beginning of the sentence, the typical situation is that the lexical subject is coded in the following clause, as in (26a). There are a few cases where the subject is extra-posed to the left of the sentence for pragmatic purpose; see the nominative subject in (26b).

(26) a. *[bea   sechupti _i   pensasaroa-ka]   ne_i   aman   siika*
      MD   suddenly   think-CLM   1SG.NOM   there   go.SG.PFV
      'And, when I suddenly thought [about it], I went there.' (Guerrero; Lalo: 255)

     b. *Dios-Ø_i   into   [_i   a=bicha-ka]   a-u   chai-tebo-k*
        God-NOM   DM   3SG.ACC=see-CLM   3SG-DAT   call-order-PFV
        'And God, after seeing all this, he ordered to call him.' (Silva et al; Wildcat: 36)

     b´. *Dios-Ø_i   into   a-u   chai-tebo-k   [_i a=bicha-ka]*
         God-NOM   DM   3SG-DAT   call-order-PFV   3SG.ACC=see-CLM
         'And God ordered to call him when he saw all this.'

The fact that the subject *Dios* 'God' is nominative rather than accusative, indicates that it serves as a constituent of the main unit. I asked my consultant what would happen if the linked unit in (26b) occurs at the end of the sentence, and he provided me with the alternative structure in (26b´), with the lexical subject in the main unit and the co-referential missing argument in the adverbial clause.

     For the Arizonan variant, Lindenfeld explicitly claims that in *-kai* clauses "its subject is often not identical to that of the matrix sentence" (1973: 87). The author uses the example in (27) to illustrate this generalization. She argues that *inepo* 'I' is the subject of *tekipanoa* 'work' and *in mala* 'my mother' is the subject of the linked verb 'die'; thus, the two subjects are different and still there is a *-kai* clause. That would be a contradiction to the findings in my corpus. My consultant, however, provide a different interpretation of the same sentence. Accordingly, 'my mother' is the subject of the two verbs inside the linked verb, *muku* 'die' and the phrasal verb *naate* 'begin', thus, the subjects of the two verbs are the same.

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[10] As a reviewer suggested, the use of *-kai* and *-o* as switch-reference markers may follow a pragmatic, rather than syntactic control relation.

(27) a. *Inepo*   *[in*   *mala*   *muku-k-naate-kai]*   *tekipanoa*
       1SG.NOM   1SG.GEN   mother-Ø   die.SG-FV-begin-CLM   work
       'I have been working ever since my mother died.'

     a´. *Inepo*   *[in*   *mala$_i$*   *muku-k*   *[_$_i$ naate-kai]]*   *tekipanoa*
       1SG.NOM   1SG.GEN   mamá-Ø   morir-PFV   empezar-CLM   work
       'I have been working since my mother become to be death (lit. begin to die)'

Still, this sentence (presumably from direct elicitation) is strange. On one hand, there is a full clause in the middle of the main clause; the subject of *tekipanoa* 'work' is a nominative subject extraposed to the left (the same that (26b) above). On the other, the dependent subject does not take accusative case. In Lindenfeld's examples, adverbial clauses marked by native final subordinators (no loanwords) do take accusative case. And yet, at least for the Sonoran variant, *-kai* clauses in the corpus involve same subjects. The possibility of *-kai* taking different subjects (or not) deserves a study on its own (Guerrero, in prep).

5. Adverbial subordinators in Cahita languages: initial or final subordinators? Thus, *bweituk* and *kiali'ikun* stand out among the Yaqui subordinators not only because of their position and lexical meaning, but also because they demand a nominative subject. Interestingly enough, these adverbial particles were not mentioned in the earlier works on Yaqui. In Buelna's work (1890), all the adverbial clauses were marked by final subordinators, including those denoting cause and reason relations. Buelna argued that "en oraciones de dos supuestos [different subjects], la persona que hace, sobre que cae o apela cualquiera de las dichas partículas se pone en acusativo" (1890: 68).[11]
     First, Buelna noticed that causal and reason clauses were marked by final subordinators. The clause linkage markers *teca ~ tuca* 'because' introduce same-subject reason clauses; *teca* is used with verbs in present and future, as in (28a), while *tuca* is used elsewhere. The subordinator *ituca~ tuco* 'because' marks different-subject clauses, the former for present and imperfective, as illustrated in (28b-c), and the latter elsewhere.

(28) a. *Emchi*   *ne$_i$*   *noctehoa*   *[emchi*   *_$_i$*   *eria*   *teca]*
       2SG.ACC   1SG.NOM   teach   2SG.ACC   love   CLM
       'I teach you because I love you.' (Sp. Porque te amo, te enseño)

     b. *Emchi*   *ne*   *vuie*   *[emchi*   *ka*   *teopa-u*   *quivaque ituca]*
       2SG.ACC   1SG.NOM   yell   2SG.ACC   NEG   church-DIR   enter   CLM
       'I yelled at you because you are not inside the church.' (Sp. Te riño porque no entras a la iglesia)

     c. *Buiteca*   *ne*   *[emchi*   *netz*   *eriac*   *tuco]*
       run.IMPFV   1SG.NOM   2SG.ACC   1SG.ACC   love-PFV   CLM
       'I ran because you loved me.' (Sp. Porque me amaste, huí)

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[11] The examples in this section come from Buelna (1890: 68-76); the orthography is respected from the original examples. The morphological gloss of the examples is mine.

According to Buelna's examples, these constructions reflect the lexical coding of the linked subject observed nowadays: in same-subject constructions, there is a missing argument in the linked unit in co-reference with the main subject; in different-subject clauses, the dependent subject is overt and marked as accusative. Historically, these final subordinators do not distinguish between reason and causal relations, i.e., they denote a general consequence relation. In fact, Buelna recognized that *teca* may denote other semantic relations too, such as conditionals, as in (29a), and temporal clauses, in (29b).

(29) a. *Emchi=ne$_i$*   *hiocori*   *ciai,*   *[emchi* _$_i$ *eria* *teca]*
    2SG.ACC=1SG.NOM   help   SUBJ?   2SG.ACC   love   CLM
    'I would help you if I would love you.' (Sp. Te socorriera, si te hubiera amado)

    b. *Emchi=ne$_i$*   *hioco-ree,*   *[quehe* _$_i$ *emchi*   *eria*   *teca]*
    2SG.ACC=1SG.NOM   help-PFV   not.yet   2SG.ACC love   CLM
    'I helped you before I love you.' (Sp. Te socorrí antes de que te amara)

With respect to the general subordinators, the clause linker *-cari*, according to Buelna (1890: 69), marks same-subject adverbial clauses such as *como* 'like', *cuando* 'when', *aunque* 'although', *después* 'after'. Some examples are shown in (30).

(30) a. *Eria-naua='e*   *aeri-cari*
    love-FUT.PAS=2SG.NOM   love-CLM
    'As you love, you would be loved.' (Sp. Como ames, tú serás amado)

    b. *Mue-naque*   *ne*   *aeria-cari*
    die-FUT   1SG.NOM love-CLM
    'I will die when I would be loved.' (Sp. Me moriré, cuando yo ame)

    c. *Ca=te$_i$*   *eria-naua*   *[mautz*   _$_i$ *aeria-cari]*
    NEG=2SG.NOM love-FUT.PAS   although   love-CLM
    'You won't be loved although you love.' (Sp. Aunque tú ames, no serás amado)

The clause linker *yo ~ co ~ caco* introduces different-subject clauses such as *como* 'like', *cuando* 'when', *aunque* 'although', *después* 'after', *si* 'if', and *antes* 'before'. The distribution of these morphemes depends on the TAM of the linked verb (Buelna 1890: 70): *yo* for the present and future, as in (31a, d), *co* for the past, depicted in (31b), and *caco* for the pluperfect in (31c).

(31) a. *Emchi=ne*   *eria-naque,*   *[emchi*   *netz*   *eria-yo]*
    2SG.ACC=1SG.NOM   love-FUT   2SG.ACC 1SG.ACC love-CLM
    'I will love you, if you love me.' (Sp. Si me amares, yo te amaré)

    b. *Ca*   *ne*   *emchi*   *lulutiria-naque,* *[mautz* *emchi*   *eria-ua-co]*
    NEG 1SG.NOM 2SG.ACC forgive-FUT   although 2SG.ACC love-PAS-CLM
    'I will not forgive you, even though you would be loved.' (Sp. Aunque hayas sido amado, yo no te perdonaré)

c. *Emchi=ne   eriai   [quehe   emchi   a   eria-caco]*
   2SG.ACC=1SG.NOM   love   not.yet   2SG.ACC 3SG.ACC   love-CLM
   'I loved you before you could love him/her.' (Sp. Antes que hubieses amado, ya yo te amaba)

d. *Suroc=te   taite-c,   [emchi   sim-su-co]*
   get.sad=1PL.NOM   begin-PFV   2SG.ACC   go-COMPL-CLM
   'We became sad after you left.' (Sp. nos entristecimos después que te fuiste)

e. *Anevebac   vitzi   ka   unaua*
   whip.PFV   CLM   NEG   strong
   'Whip [him] but not a lot.' (Sp. Azótele pero no mucho)

Whereas the linked subject in the *-cari* clauses in (30) is covert, in the sentences in (31) the dependent subject consists of an accusative pronoun. Notice also that *-cari* and *-yo/-co/-caco* can co-occur with initial adverbs in order to specify the semantic relations among the two clauses; this is the case of *mautz(i)* 'although, it does not matter' in (30c) and (31b), the adverbial *quehe(ri)* 'not yet, before' (31c) marking a before-clause, *vitzi* 'although, but' in (31d). The initial particle *mautz(i)* was not preserved in Yaqui grammar; the actual *ketunke ~ ke* is historically related to *quehe(ri)* 'not yet' (see the example in (29b)); the same seems to be true for *bweta* and *vitzi* 'but'.

That is, according to Buelna's work, adverbial subordinate clauses were marked by final subordinators; some of these subordinators were bound (e.g., *-cari, -yo/-co/-caco*), and others were free but final (e.g. *teca, ituca, tuco*). These subordinating morphemes were general rather than specific linkers. The use of postpositions such as *-betchi'ibo* 'in order to' and *-po* 'in, on', were not mentioned in Buelna's work either.

6. Final comments. The aim of this paper was to explore the complexity of the adverbial subordinators in Yaqui. In contrast to relative and complement clauses which take final and bound subordinators without lexical meaning, adverbial clauses can take both final and initial subordinating morphemes. While all subordinate sentences -including relatives, complements and adverbials marked by suffixal subordinators demand non-nominative subjects, adverbial clauses taking the initial clause linkers *bweituk* 'because', *kiale'ekun* 'so that', and *alle'apo* 'although' require nominative subjects. Historically, these adverbial clauses took final subordinators and accusative subjects, meaning the syntactic structures denoting reason, causal and concessive relations are relatively new in the Yaqui grammar. There are, at least, two aspects that needs to be address in future studies, the possibility of *-kai* taking different subjects, and the use of *-kai* and *-o* as switch-reference markers, a phenomenon observed in languages from the Northern branch (Hill 2012), but rarely mentioned in Southern languages.

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