Chapter 4

SIMPLE CLAUSES IN YAQUI

This chapter analyzes the syntactic and semantic representations in Yaqui simple clauses in terms of argument structure, macrorole assignment and case marking. Although one-place predicates are discussed, the analysis focuses on the morpho-syntactic properties of the 'object' arguments within two- and three-place predicates. The tests used to explore the properties of non-actor core arguments are the use of clitics, relativization, arguments outside the core, wh-question, animacy, word order, and passive voice. Section 4.1 briefly discusses one-place predicates; section 4.2 deals with two-place predicates, and section 4.3 analyzes in detail three-place predicates. The macrorole assignment and the linking system for simple clauses are established in section 4.4. Section 4.5 summarizes this chapter.

4.1. One-place predicates

The single argument of verbs encoding motion or emission activities, as well as state, condition or existence states is always marked by nominative case, i.e. morphologically unmarked when nominal. The example in (1a) illustrates the activity verb *bwite* 'run' and the clause in (1b) the accomplishment verb *koko* 'die'. A (simplified) lexical entry is provided.

(1) a. Anselmo-Ø bwite-k.
Anselmo-NOM run-PRFV
'Anselmo ran.'

a´. **do´** (Anselmo, [**run´** (Anselmo)])

b. Bempo tuuka koko-k.
3PL:NOM yesterday die-PRFV
'They died yesterday.'

b´. BECOME **dead´** (3pl)

Yaqui does not require an overt PSA with weather verbs. Furthermore, when the PSA refers to the third person singular, its occurrence may be optional.

(2) a. Tuuka ousi yuku-k.
yesterday a lot rain-PRFV
'Yesterday rained a lot.'

b. Siime gonaiki ora-po kocho-k.
all eight hour-LOC sleep-PRFV
'(He/she) slept eight hours.'

More generally, the PSA appears core-initially, the *topic* position according to D&C (p. 43), except when it is a pronoun in which case it may appear in second-position, as in (3c). Usually, location and temporal adverbial phrases appear clause-initially (i.e., left-detached position), although they may also occur within the clause, preceding the verb.

(3) a. U tomi-Ø wiute-Ø.
the money-NOM spend-PRES
'The money is running out.'

b. U sankoa-Ø cora-u kibake-k.
the garbage-NOM corral-DIR enter-PRFV
'The garbage got into the house.'

c. Wasa-m-meu ne weama-n.
field-PL-DIR 1SG:NOM walk-PASTC
'I was walking to the fields.'

d. Kokowaka-po u-me ja'amuchi-m bwabwan-Ø.
funeral-LOC the-PL woman-PL cry-PRES
'In the funerals, the women cry.'

In simple clauses, the questioned arguments appears clause-initially (i.e., pre-core slot) and very often it is followed by the interrogative particle *–sa.* Some examples of wh-questions in one-place predicates are shown below.

(4) a. Jaiki-m = sa aman saja-k.
amount-PL = Q there go-PRFV
'How many went there'

b. Jabe = sa junaa'a.
person = Q that
'Who is that?'

Few one-place predicates allow the occurrence of the passive *–wa*. Impersonal clauses like those illustrated in (5) usually refer to cultural or general knowledge events which do not necessarily demand the expression of an (human) agent participant, such as dancing or cooking in traditional ceremonies.

(5) Pajko-po yi'i-wa-n.
party-LOC dance-PASS-PASTC
'There was dancing at the ceremony.'

Thus, the simple argument of a syntactically intransitive clause would be the highest ranked argument in the Actor-Undergoer Hierarchy [AUH] in Figure 3.4, and hence it would be marked as nominative. It does not matter if it is actor or undergoer.

4.2. Two-place predicates

Regardless of whether the verb expresses the experiencer's perception, emotion, desire, or cognition, or the effector's motion, performance or creation, the first argument position of a two-place predicate is always nominative. The case marking of the second argument position depends upon the verb class. For most two-argument states, the theme/ patient is marked by the accusative *–ta* when nominal. Recall that plural and accusative marking on nouns are mutually exclusive. Clauses in which the two core arguments are plural (6c) are ambiguous, and so there are two lexical representations for each interpretation, although the preferred reading is where the agent-type argument precedes the patient-type argument.

(6) a. Kajlos-Ø u-ka mesa-ta kokta-k.
Carlos-NOM the-ACC table- ACC break-PRFV
'Carlos broke the table.'

a′. [**do′** (kajlos, Ø)] CAUSE [BECOME **broken′** (mesa)]

b. U goi-Ø u-me chu'u-im ke'e-ka.
the coyote-NOM the-PL dog-PL bite-PRFV
'The coyote bit the dogs.'

b′. **do′** (goi, [**bite′** (goi, chu'uim)])

c. U-me goi-m u-me chu'u-im ke'e-ka.
the-PL coyote-PL the-PL dog-PL bite-PRFV
'The coyotes bit the dogs' or 'the dogs bit the coyotes'

c′. **do′** (goim, [**bite′** (goim, chu'uim)])
c′′. **do′** (chu'uim, [**bite′** (chu'uim, goim)])

It is common for languages with overt case marking to mark some objects but not others, depending on the semantic and pragmatic features of that object. In thinking about how this should be explained, Aissen (2003) refers to this phenomenon as *Differential Object Marking* in which 'the higher in prominence a direct object, the more likely it is to be overtly case marked'. The dimensions along which prominence is assessed include animacy and definiteness:

(7) a. Animacy scale: Human > Animate > Inanimate (Croft 1988)

b. Definiteness scale: Personal Pronoun > Proper noun > Definite NP > indefinite specific NP > Non-specific NP

Accordingly, if in some languages a direct object at some rank can be case marked, then higher-ranked direct objects in that language can be case marked, but not necessarily lower ranked ones. We have seen that in Yaqui only higher ranked objects such as personal pronouns, proper nouns and definite singular NPs are marked by the accusative case; plural NPs are only marked by the plural suffix *–(i)m* but not by the accusative *–ta*, i.e., forms like *-m-ta ~ *-ta-m are untested. Extending Aissen's approach, we may say that in Yaqui plural NPs are ranked lower in the definiteness scale, e.g., indefinite

specific NP or non-specific NPs, such as plural NPs are a kind of 'less prominent object' for the purpose of accusative case marking.

Some two-place no-activity predicates require a postpositional NP as a second argument, e.g., *'ea* 'think on' (8a), *maachia* 'appear' (8b), and *kopte* 'forget' (8c).

(8) a. Nepo e-t 'ea-n.
1SG:NOM 2SG-LOC think-PASTC
'I was thinking about you.'

a′. **think′** (1sg, 2sg)

b. U mukia-Ø e-u yeu maachia-ne.
the die:STA-NOM 2SG-DIR out appear-EXPE
'Death will appear to you on the road.'

b′. **appear′** (mukia, 2sg)

c. Ae-beas kopte-Ø!
3SG-front forget-PRES
'Forget (about) it!'

c′. **forget′** (2sg, 3sg)

Most two-place activity verbs require a postpositional NP as a second argument. This is the case of speech act verbs like *nooka* 'talk to', which takes a directional PP (9a) and *e'etejo* 'chat with', which takes a comitative PP (9b).

(9) a. U o'ou-Ø jamut-ta-u nooka-k.
the man-NOM woman-ACC-DIR talk-PRFV
'The man talked to the woman.'

a′. **do′** (o'ou, [**talk′** (o'ou, jamut)])

b. Kajlos-Ø jamut-ta-mak e'etejo-k.
Carlos-NOM woman-ACC-COM chat-PRFV
'Carlos chatted with the woman.'

b′. **do′** (kajlos, [**chat′** (kajlos, jamut)])

A few verbs vary their morphological valence marking depending on the coding on the second argument. For instance, whereas the transitive version *omta* ending in *–(t)a* takes an accusative NP meaning 'hate', the intransitive version *omte* ending in *–(t)e* takes a directional NP meaning 'scold, argue, quarrel'. Any other arrangement is ungrammatical.

(10) a. Ivan-Ø u-ka o'ou-ta omta-Ø.
Ivan-NOM the-ACC man-ACC hate-PRES
'Ivan hates the man.'

a′.*Ivan-Ø u-e o'ou-ta-u omta-Ø.
'Ivan hates to the man.'

b. Ivan-Ø u-e o'ou-ta-u omte-Ø.
Ivan-NOM the-DIR man-ACC-DIR scold-PRES
'Ivan argues with the man.'

b′.* Ivan-Ø u-ka o'ou-ta omte-Ø.
'Ivan argues with the man.'

c. **do′** (Ivan, [**hate′** (Ivan, o'ou)])

Following Rude (1996), the 'object' complements of two-place predicates are subject to the following morpho-syntactic processes: use of clitics, arguments outside the core ('right-dislocation' in Rude's terms), reflexivization, relativization, and passive voice. This study also explores wh-questions, animacy and word order of the non-actor arguments.

Use of clitics. In Yaqui, the verb may optionally take a pronominal clitic that agrees with the third person object, i.e., a kind of verbal agreement. When the agreement is with a direct core argument marked accusative, the verb takes the accusative *a-* '3sg' or *am-* '3pl' prefixes as in (10a-b). When the agreement is with an oblique core argument marked by a postposition, the verb takes an object of postposition pronoun marked by the

directional postposition *e-u* ‘3sg’ or *a-meu* ‘3pl’ as in (11c). Clitics may also refer to a comitative phrase such as in (11d).

(11) a. Kajlos-Ø mesa-ta a = kokta-k.
Carlos-NOM table-ACC 3SG:ACC = break-PRFV
‘Carlos broke (it) the table.’

b. Kajlos-Ø mesa-m am = kokta-k.
Carlos-NOM table-PL 3PL-ACC = break-PRFV
‘Carlos broke (them) the tables.’

c. Kajlos-Ø jamuchi-m-meu ameu = nooka-k.
Carlos-NOM woman:PL-DIR 3PL:DIR = talk-PRFV
‘Carlos talked (to them) to the women.’

d. Kajlos-Ø jamuchi-m-mak ame-mak = e’tejo-k.
Carlos-NOM woman-PL-COM 3PL:COM = chat-PRFV
‘Carlos talked (with them) with the women.’

Arguments outside the core. Although core arguments tend to precede the verb (i.e., core-internally), it is possible that one of them may follow the verb, with or without a pause or intonation break (Rude 1996). When the nominative NP (PSA) follows the verb (12a-b), it occupies a post-core slot [PoCS], outside the core but inside the clause. Accusative (12c), directional (12d) and even comitative (12e) phrases may also follow the verb. However, when a non-PSA core argument follows the verb, a clitic pronoun co-indexed to it must be attached to the verb. The obligatory occurrence of a resumptive pronoun may be used as an evidence to claim that only PSA goes to the PoCS, while other non-PSA core arguments go to the right-detached position (RDP, outside the clause but inside the sentence).

(12) a. U-ka o’ou-ta bicha-k u jamut-Ø.
the-ACC man-ACC see-PRFV the woman-NOM
‘Saw the man, the woman.’ (Rude 1996)

b. Eskuela-u saja-k u-me ili usi-m.
escuela-DIR go-PRFV the-PL little child-PL

‘Went to the school, the children.’

c. U jamut-Ø a = bicha-k u-ka o’ou-ta.
the woman-NOM 3SG:ACC = see-PRFV the-ACC man-ACC
‘The man, the woman saw him.’ (Rude 1996)

d. Kajlos-Ø au = nooka-k jamu-ta-u.
Carlos-NOM 3SG:DIR = talk-PRFV woman-ACC-DIR
‘To the woman, Carlos talked to her.’

e. U Kajlos-Ø ae-mak = e’tejo-k jamut-ta-mak.
the Carlos-NOM 3SG-COM = chat-PRFV woman-ACC-COM
‘With the woman, Carlos chatted with her.’

Reflexivization. Accusative, directional and comitative phrases can be replaced by a reflexive pronoun when they are human. The third person singular reflexive pronoun *au* is shown in (13a); the first *ino* and second *em* singular person pronouns are in (13b-c).

(13) a. U jamut-Ø au bicha-k.
the woman-NOM 3SG:REFL see-PRFV
‘The woman saw herself.’ (Rude 1996)

b. Nepo ino nooka-k.
1SG:NOM 1SG:REFL talk-PRFV
‘I talked to myself.’

c. Empo em-mak e’tejo-k.
2SG:NOM 2SG:REFL-COM talk-PRFV
‘You talked to yourself.’

Relativization. Yaqui distinguishes two types of relative clauses. If the modified NP serves as the actor within the relative clause, as in ‘the man$_i$ that ___$_i$ saw the woman’ in (14a), the clause is marked by *–m(e)*; if the modified NP functions as a non-actor participant within the relative clause, the suffix *-’u* is used. In (14b), the relative clause modifies the noun *mesa-ta* ‘table’, the undergoer of the non-matrix verb ‘break’; in (14c), the clause modifies *jamut-ta-u* ‘to the woman’, the addressee of the non-matrix verb *nooka* ‘talk’, and in (14d) the clause modifies *jamut-ta-mak*, the addressee of the verb

e'tejok 'to chat'. That is, the Clause Linkage Marker [CLM] *–'u* has access to either the accusative, the directional or the comitative complement.

(14) a. U o'ou-Ø [jamut-ta bicha-ka-me] Potam-meu-bicha siika.
the man-NOM woman-ACC see-PRFV-CLM Potam-PL-DIR-toward go:PRFV
'The man who saw the woman went to Potam.'

b. [Mesa-ta Kajlos-ta kokta-ka-'u]$_i$ inepo a_i = a'tea-kan.
table-ACC Carlos-ACC break-PRFV-CLM 1SG:NOM 3SG:ACC = own-PASTC
'I owned the table that Carlos broke.'

c. [Kajlos-ta jamut-ta-u nooka-ka-'u] Maria-tu-kan.
Carlos-ACC woman-ACC-DIR talk-PRFV-CLM María-be-PASTC
'Maria was the woman to whom Carlos talked.'

d. [Jamu-ta-mak Kajlos-ta a-mak e'etejo-ka-'u] Maria-tu-kan.
woman-ACC-COM Carlos-ACC 3SG-COM chat-PRFV-CLM María-be-PASTC
'Maria was the woman with whom Carlos chatted.'

Wh-question. In verb final languages, wh-expressions tend to occur *in situ*, the same position in which a corresponding non-interrogative expression will occur. Yaqui presents an unexpected word order since wh-expressions usually occur at the beginning of the clause. In (15a), *jabe* 'who' questions the actor participant. In (15b), the *jita* 'what' questions an inanimate accusative participant; when it is a human being, *jabe* 'who' is used as in (15c) and (15d). Note that for the directional and comitative complements, the wh-word takes the relevant postpositional marking, e.g. *jabetau* 'to whom?' and *jabetamak* 'with whom?', respectively.

(15) a. Jabe mesa-ta kokta-k?
Who table-ACC break-PRFV
'Who broke the table?

b. Jii-ta kokta-k Kajlos-Ø?
What-ACC break-PRFV Carlos-NOM
'What did Carlos break?

c. Jabe-ta-u nooka-k Kajlos-Ø?
Who-ACC-DIR talk-PRFV Carlos-NOM

'To whom did Carlos talk?

d. Jabe-ta-mak e'etejo-k Kajlos-Ø?
Who-ACC-COM chat-PRFV Carlos-NOM
'With whom did Carlos talk?

Passive voice. When the passive suffix *–wa* is added to a two-place predicate in which the second argument is marked by the accusative *–ta*, this argument occupies the Privileged Syntactic Position of the passive clause, as illustrated in (16).

(16) a. Kajlos-Ø mesa-ta kokta-k.
Carlos-NOM table-ACC break-PRFV
'Carlos broke the table.'

b. Mesa-Ø kokta-wa-k.
mesa-NOM break-PASS-PRFV
'The table was broken.'

When *–wa* is added to a two-place predicate taking either a directional or comitative PP, this complement cannot occupy the passive PSA and hence cannot be marked as nominative. In order to be grammatical, propositional complements must remain in a non-PSA core argument such that the clause is interpreted as an impersonal construction.

(17) a. Kajlos-Ø jamut-ta-u nooka-k.
Carlos-NOM woman-ACC-DIR talk-PRFV
'Carlos talked to the woman.'

a′. Jamut-ta-u nooka-wa-k.
woman-ACC-DIR talk-PASS-PRFV
'(Someone) talked to the woman.'

a′′.* Jamut-Ø nooka-wa-k.
'The woman was talked to.'

b. Kajlos-Ø jamut-ta-mak e'tejo-k.
Carlos-NOM woman-ACC-COM chat-PRFV
'Carlos chatted with the woman.'

b′. Jamut-ta-mak e'tejo-wa-k.
woman-ACC-COM chat-PASS-PRFV
'(Someone) chatted with the woman.'

b´´. * Jamut-Ø e'tejo-wa-k.
'The woman was chatted (with).'

In terms of RRG, this is explained as follows. With a monotransitive verb, the nominative NP corresponds to the actor, the highest-ranked argument in the AUH, while the accusative NP is the undergoer, the lower-ranked argument. NPs marked by postpositions are non-macrorole core arguments and hence they cannot act as passive-PSAs. Consequently, *u mesa* 'the table' in (17) is an undergoer direct core argument of *kokta* 'break', while *jamut-ta-u* 'to the woman' and *jamut-ta-mak* 'with the woman' in (16) are non-macrorole oblique core arguments.

Therefore, the first argument of a two-place predicate is morphologically unmarked. The second argument of a state predicate is marked by the accusative suffix *–ta*, whereas the second argument of two-argument speech act verbs can be marked by the directional *–u* or by the comitative *–mak*. These three types of 'object' complements behave alike for the purposes of clitic agreement, right-dislocation, relativization, reflexivization, and wh-questions, but not for passive voice; only arguments marked by *–ta* can act as passive PSA, whereas arguments marked by postpositions cannot.

(18) Morpho-syntactic properties of 'object' complements within two-place predicates

	Verb agreement	**Right Dislocation**	**Reflexive**	**Relativization**	**Wh-question**	**Passive**
V_{ACC}	✔	✔	✔	✔	✔	✔
$V_{ACC\text{-}DIR}$	✔	✔	✔	✔	✔	✘
$V_{ACC\text{-}COM}$	✔	✔	✔	✔	✔	✘

Based on the possibility to act as passive-PSAs, one can argue that accusative NPs in Yaqui are *direct* core arguments, whereas postpositional phrases such as the directional and comitative PPs are *oblique* core arguments. Only direct core arguments may serve as PSA in the passive version. Within RRG, case-marking rules make crucial reference to macroroles and direct core argument status. Based on the data analyzed so far, case

assignment rules for Yaqui can be preliminarily defined as in (19), and only apply to direct core arguments:

(19) Case assignment rules for Yaqui (preliminary)
   a. Assign nominative case to the highest ranking macrorole.
   b. Assign accusative case to the other macrorole.

Accordingly, Yaqui has only two direct cases: nominative and accusative. Oblique core arguments are marked by postpositions such as the directional *–u* and the comitative *–mak*. For now, let's assume that postpositions are assigned lexically by the verb. Following the selection principles of the AUH and based on the LS of a monotransitive verb like *kokta* 'break' in (6a) and repeated below, the highest ranked argument in the LS of the verb (*kajlos*) is selected as the actor and the lower ranked argument (*mesa*) is selected as the undergoer. According to the case assignment rules proposed in (19), the actor will be assigned nominative case, whereas the other macrorole will be assigned accusative case.

(20) a. Kajlos-Ø u-ka mesa-ta kokta-k. (=(6a))
   Carlos-NOM the-ACC table- ACC break-PRFV
   'Carlos broke the table.'

   a′. [**do′** (kajlos, Ø)] CAUSE [BECOME **broken′** (mesa)]

4.3 Three-argument verbs

The abstract predicates in the system of the RRG lexical decomposition can have only zero, one, or two arguments, and therefore three-place verbs must have a complex LS composed of at least two abstract predicates (Van Valin 2001). The general semantic representation for such a predicator is given in (21), and some examples are in (22).

(21) [**do′** (x, Ø)] CAUSE [BECOME **predicate′** (y, z)]

(22) Logical structure of three-place predicates:
   give, present [**do′** (x, Ø)] CAUSE [BECOME **have′** (y, z)]
   show [**do′** (x, Ø)] CAUSE [BECOME **see′** (y, z)]

teach [**do´** (x, Ø)] CAUSE [BECOME **know´** (y, z)]
put [**do´** (x, Ø)] CAUSE [BECOME **be-Loc´** (y, z)]

With a LS representation like (21), the lowest ranking (rightmost) argument *z* is only the default choice for undergoer; this means that it is possible, at least in principle, for the *y* argument to be selected as the undergoer. This alternation in the selection of undergoer is illustrated for the verb *give* in (23), where *Mary* is the *y* argument (recipient), and *flowers* is the *z* argument (theme).

(23) a. [**do´** (x, Ø)] CAUSE [BECOME **have´** (y, z)]

b. John$_{[actor]}$ gave the flowers$_{[undergoer]}$ to Mary unmarked choice

c. John$_{[actor]}$ gave Mary$_{[undergoer]}$ the flowers marked choice

According to the AUH, in the LS of the verb *give* in (23b), the leftmost argument (*John*) is selected as the actor and the rightmost argument (*flowers*) is the undergoer; because the sentence is in the active voice, the actor will appear in the core-initial PSA position. The third argument, *Mary* (RECIPIENT), is a non-macrorole core argument, and so it is marked by the preposition *to*. In (23c) the actor selection is exactly the same but the undergoer selection is different; the recipient *Mary*, the *y* argument is chosen as undergoer leaving *flowers* as a non-macrorole direct core argument. This marked undergoer selection is termed 'dative shift'.

Yaqui presents at least two main types of three-argument verbs showing a semantic representation like those in (23a): (i) lexical three-place verbs such as *sell* and *give*, and (ii) several derived verbs such as applicative and causatives. The interesting point here is that lexical and derived three-argument verbs may take more than two accusative NPs.

4.3.1 Lexical three-place predicates. There are two types of verbs which take three core arguments. The first group, Type-A, takes an accusative NP and a PP as core

arguments. The second group, Type-B, takes two accusative core arguments. Henceforth, I will use 'RECIPIENT' as a cover term for the cluster of thematic relations, i.e. recipient, goal, source, experiencer, and addressee, which correspond to the first argument position of BECOME **have´** (y, z) in the second component of the complex LS in (21a).

(24) Three-argument verbs Yaqui

Type-A				**Type-B**	
nenka	'sell'	*jinu*	'buy'	*miika*	'give'
mana	'serve, offer'	*bittua*	'send'	*maka*	'present as a gift'
reuwe	'borrow'	*bwise*	'pass'	*bittua*	'show'
aawa	'request'	*mabeta*	'receive'	*u'ura*	'take away'
teuwa	'tell to'			*reuwa*	'lend'
toja	'bring'			*majta*	'teach'
nattemae	'ask'			*tejwa*	'tell'

For Type-A, just the accusative theme is obligatory and the postpositional argument is optional. All Type-A verbs lack a double object variant. In (25), the verb *nenka* 'sell' is illustrated; the lexical representation for *nenka* in (25a) is presented in (25d).

(25) a. Goyo-Ø Lupe-ta-u toto'i-ta nenka-k.
Goyo-NOM Lupe-ACC-DIR hen-ACC sell-PRFV
'Goyo sold the hen to Lupe.'

b. Goyo-Ø u-ka toto'i-ta nenka-k.
Goyo-NOM the-ACC hen-ACC sell-PRFV
'Goyo sold the hen.'

c. *Goyo-Ø Lupe-ta-u nenka-k.
'Goyo sold to Lupe.'

d. [**do´** (Goyo, Ø)] CAUSE [BECOME **have´** (Lupe, toto'i)]

The postpositional argument marked by the directional *–u* may indicate the goal in (26a) and the source in (26b); the locative *–betana* 'from' indicates the source (26c).

(26) a. Armando-Ø seewa-m teopo-u toi-ne.
Armando-NOM flower-PL church-DIR bring-EXPE
'Armando will bring flowers to the church.'

b. Aurelia-Ø koari-m jita nenki-reo-ta-u jinu-Ø.
Aurelia-NOM skirt-PL thing sell-er-ACC-DIR buy-PRES
'Aurelia is buying skirts from the seller.'

c. Beti-Ø u-ka bwa'a-m-ta mabeta-k kobanao-ta-betana.
Beti-NOM the-ACC eat-CLM-ACC receive-PRFV governor-ACC-from
'Beti received the food from the governor.'

Most verbs of saying are classified into this group. The clauses in (27) show that the 'content of speaking' appears as accusative, while the RECIPIENT, in this case corresponding to an addressee, appears as a directional argument.

(27) a. Aurelia-Ø o'ou-ta-u ta'e-m nattemae-k.
Aurelia-NOM man-ACC-DIR name-PL ask-PRFV
'Aurelia asked the names from the man.'

b. Peo-Ø Lupe-ta-u tomi-ta aawa-k.
Pedro-NOM Lupe-ACC-DIR money-ACC request-PRFV
'Pedro requested money from Lupe.'

For Type-B verbs, both *–ta* marked arguments are obligatory, meaning that the absence of one results in ungrammaticality. In (28), the verb *miika* 'give' is illustrated; the lexical representation for *miika* in (28a) is presented in (28d).

(28) a. Goyo-Ø Lupe-ta toto'i-ta miika-k.
Goyo-NOM Lupe-ACC hen-ACC give-PRFV
'Goyo gave Lupe the hen.'

b.* Goyo-Ø u-ka toto'i-ta miika-k.
'Goyo gave the hen.'

c.* Goyo-Ø Lupe-ta miika-k.
'Goyo gave Lupe.'

d. [**do´** (Goyo, Ø)] CAUSE [BECOME **have´** (Lupe, toto'i)]

Verbs in this group express a causing event where one person (actor) causes the other animate participant (RECIPIENT) to have or know something (theme), or not to have something as with *u'ura* 'take away' in (29b).

(29) a. Aurelia-Ø Jorge-ta kuenta-m majta-ne.
Aurelia-NOM Jorge-ACC sum-PL teach-EXPE
'Aurelia will teach Jorge the sums.'

b. U ili uusi-Ø Lupe-ta tomi-ta u'ura-k.
the little child-NOM Lupe-ACC money-ACC take.away-PRFV
'The little child took the money away [from] Lupe.'

There are two phonologically related pairs of verbs that morphologically distinguish their core arguments, e.g. *teuwa* 'tell to' vs. *tejwa* 'tell' in (30a-b), and *reuwe* 'to borrow from' and *reuwa* 'to lend' in (30c-d). In other words, one is Type A and the other Type B.

(30) a. Maria-Ø Carmen-ta-u ji-ta teuwa-k.
Maria-NOM Carmen-ACC-DIR thing-ACC tell to-PRFV
'Maria told something to Carmen.'

d. Maria-Ø Carmen-ta ji-ta tejwa-k.
Maria-NOM Carmen-ACC thing-ACC tell-PRFV
'Maria told Carmen something.'

c. Goyo-Ø Fermin-ta-u tomi-ta reuwe-k.
Goyo-NOM Fermin-ACC-DIR money-ACC borrow-PRFV
'Goyo borrowed money from Fermín.'

d. Goyo-Ø Fermin-ta tomi-ta reuwa-k.
Goyo-NOM Fermin-ACC money-ACC lend-PRFV
'Goyo lent Fermín money.'

However, most Type-A and Type-B verbs show one variant or the other. *Bit-tua* 'see-cause' appears to be the only verb that expresses both variants, the PP-variant meaning 'to send' in (31a), and the double-*ta* variant meaning 'to show' in (31b).

(31) a. Aurelia-Ø Karmen-ta-u toto'i-ta bit-tua-k.
Aurelia-NOM Carmen-ACC-DIR hen-ACC see-CAUSE-PRFV
'Aurelia sent the hen to Carmen.'

b. Aurelia-Ø Karmen-ta toto'i-ta bit-tua-k.
Aurelia-NOM Carmen-ACC hen-ACC see-CAUSE-PRFV
'Aurelia showed Carmen the hen.'

There is another feature that distinguishes Type-A and Type-B verbs, whether the transfer is completed or not (Koenig and Davis 2001; Wierzbicka 1988; Levin and Rappaport-Hovav 2002). The idea is that the expression of RECIPIENT as an accusative NP generates a successful transfer implicature, while the expression of RECIPIENT as a PP does not generate the successful transfer implication. This seems to be the case in Yaqui. Compare the following two examples.

(32) a. U jita nenki-reo-Ø Aurelia-ta-u u-ka toto'i-ta nenka-k
the thing sell-er-NOM Aurelia-ACC-DIR the-ACC hen-ACC sell-PRFV

bweta Aurelia-Ø ka a nu'upa-k.
but Aurelia-NOM NEG 3SG:ACC take-PRFV
'The seller sold a hen to Aurelia but Aurelia did not take it.'

b.* U jita nenki-reo-Ø Aurelia-ta u-ka toto'i-ta miika-k
the thing sell-er-NOM Aurelia-ACC the-ACC hen-ACC give-PRFV

bweta Aurelia-Ø ka a nu'upa-k.
but Aurelia-NOM NEG 3SG:ACC take-PRFV
'The seller gave Aurelia a hen but Aurelia did not take it.'

Morpho-syntactic properties such as the use of clitics, arguments outside the core, and relativization do not distinguish between the two non-actor direct core arguments within these three-argument verbs. For instance, for Type-A verbs, both the accusative NP (33a) or the directional postposition (33b) can appear in the RDP, while there is a resumptive pronoun inside the core. The same is true for the Type-B verbs in (33c-d).

(33) a. Goyo-Ø toto'i-ta au = nenka-k Lupe-ta-u.
Goyo-NOM hen-ACC 3SG-DIR = sell-PRFV Lupe-ACC-DIR
'To Lupe, Goyo sold the hen to her.'

b. Goyo-Ø Lupe-ta-u a = nenka-k toto'i-ta.
Goyo-NOM Lupe-ACC-DIR 3SG:ACC = sell-PRFV hen-ACC
'The hen, Goyo sold it to Lupe.'

c. Goyo-Ø toto'i-ta a = miika-k Lupe-ta.
Goyo-NOM hen-ACC 3SG:ACC = give-PRFV Lupe-ACC

'Lupe, Goyo gave her the hen.'

d. Goyo-Ø Lupe-ta a = miika-k toto'i-ta.
Goyo-NOM Lupe-ACC 3SG:ACC = give-PRFV hen-ACC
'The hen, Goyo gave it [to] Lupe.'

When the recipient is plural and the theme singular, the clitic pronouns tend to agree with the plural recipient as exemplified in (34a-b). However, when the recipient is singular and the theme plural (34c), the clitics tend to refer to the plural theme.

(34) a. Goyo-Ø u-me o'ow-im-meu toto'i-ta ame-u = nenka-k.
Goyo-NOM the-PL man-PL-DIR hen-ACC 3PL-DIR = sell-PRFV
'Goyo sold (them) the hen to the men.'

b. Goyo-Ø u-me o'ow-im toto'i-ta am = miika-k.
Goyo-NOM the-PL man-PL hen-ACC 3PL:ACC = give-PRFV
'Goyo gave (them) the men the hen.'

c. Goyo-Ø u-ka o'ou-ta toto'i-m am = nenka-k.
Goyo-NOM the-ACC man-ACC hen-PL 3PL:ACC = sell-PRFV
'Goyo sold (them) the hens to the man.'

d. Goyo-Ø u o'ow-ta toto'i-m am = miika-k.
Goyo-NOM the man-ACC hen-PL 3PL:ACC = give-PRFV
'Goyo gave (them) the man the hens.'

The same is true for relativization in (35) which has access to either the postpositional NP or the accusative NP. This means that neither of these properties may distinguish between the 'object' complements within three-argument verbs.

(35) a. Goyo-Ø o'ou-ta-u [Vicam-meu yepsa-ka-'u] toto'i-ta nenka-k.
Goyo-NOM man-ACC-DIR Vicam-PL:DIR arrive-PRFV-CLM hen-ACC sell-PRFV
'Goyo sold the hen to the man who arrived to Vicam.'

b. Goyo-Ø o'ou-ta-u nenka-k [toto'i-ta$_i$
Goyo-NOM man-ACC-DIR sell-PRFV hen-ACC

aapo'ik a$_i$ = yo'oturia-ka-'u].
3SG:GEN 3SG:ACC = rise-PRFV-CLM
'Goyo sold to the man the hen that he raised.'

c. Goyo-Ø o'ou-ta [Vicam-meu yepsa-ka-'u] toto'i-ta miika-k.
Goyo-NOM man-ACC Vicam-PL-DIR arrive-PRFV-CLM hen-ACC give-PRFV
'Goyo gave the hen [to] the man who arrived to Vicam.'

d. Goyo-Ø o'ou-ta miika-k [toto'i-ta$_i$ aapo'ik a$_i$ = yo'oturia-ka-'u].
Goyo-NOM man-ACC give-PRFV hen-ACC 3SG:GEN 3SG:ACC = rise-PRFV-CLM
'Goyo gave the man the hen that he raised.'

Escalante (1990) suggests that wh-expressions may provide evidence to distinguish between the two 'object' arguments in three-argument verbs. He shows that for the clause *Pedro was sold the corn*, either the goal or the theme can be extracted as illustrated in (36a-b). However, for the clause *Pedro was given the corn*, it is possible to question only the recipient (36c) but not the theme (36d), suggesting that only the recipient can be extracted from a Type-B verb. The examples are from Escalante (1990).

(36) a. Jiita Peo-ta-u nenki-wa-k?
what Pedro-ACC-DIR sell-PASS-PRFV
'What was sold to Pedro?'

b. Jabe-ta-u u bachi-Ø nenki-wa-k?
who-ACC-DIR the corn-NOM sell-PASS-PRFV
'To whom was the corn sold?'

c. Jabe bachi-ta miik-wa-k?
who corn-ACC give-PASS-PRFV
'Who was given corn?'

d. *Jiita Peo-ta miik-wa-k?
What was given [to] Pedro?

What Escalante did not say explicitly is that the restriction on wh-expression exemplified in (36) is true only for passive clauses. The clause in (36d) is bad because it is the wrong passive version. According to my data, the two non-actor arguments within Type-A and Type-B verbs can be extracted from an active voice clause.

(37) a. Jiita a = nenka-k Joan-Ø Peo-ta-u?
what:ACC 3SG:ACC = sell-PRFV Juan-NOM Pedro-ACC-DIR
'What did Juan sell to Pedro?'

b. Jabe-ta-u a = nenka-k Joan-Ø u-ka kaba'i-ta?
who-ACC-DIR 3SG:ACC = sell-PRFV Juan-NOM the-ACC horse-ACC
'To whom did Juan sell the horse?

c. Jiita a = miika-k Joan-Ø Peo-ta?
what:ACC 3SG:ACC = give-PRFV Juan-NOM Pedro-ACC
'What did Juan give Pedro?'

d. Jabe-ta a = miika-k Joan-Ø u-ka kaba'i-ta?
Who-ACC 3SG:ACC = Give-PRFV Juan-NOM the-ACC horse-ACC
'[To] whom did Juan give the horse?

For the passive version of these clauses, it is possible to question the accusative theme within a Type-B verb only when the recipient acts as the PSA. That is, in (37a) *jita* can function as a wh-word for the theme if the original RECIPIENT (*Peo*) acts as the passive-PSA. When the wh-word questions the RECIPIENT, the unique choice for PSA in *give*-type verbs in the passive, the accusative theme keeps its status as a non-PSA core argument.

(38) a. Jiita Peo-Ø miik-wa-k?
what:ACC Pedro-NOM give-PASS-PRFV
'Pedro was given what?'

b. Jabe u-ka kaba'i-ta miik-wa-k?
who the-ACC horse-ACC give-PASS-PRFV
'Who was given the horse?

Accordingly, neither of these morpho-syntactic properties can distinguish between the two non-actor core arguments in three-argument verbs. The only property that can distinguish between direct and oblique core arguments in this language is passive voice. Among the two non-actor core arguments, only the undergoer may serve as the PSA of a passive construction meaning that, of the two logically possible passive versions, only one is grammatical. For Type-A verbs, only the theme can serve as the passive PSA; hence it is the undergoer.

(39) a. Goyo-Ø Lupe-ta-u toto'i-ta nenka-k. (= (25a))
Goyo-NOM Lupe-ACC-DIR hen-ACC sell-PRFV

'Goyo sold the hen to Lupe.'

b. U toto'i-Ø Lupe-ta-u nenka-wa-k.
the hen-NOM Lupe-ACC-DIR sell-PASS-PRFV
'The hen was sold to Lupe.'

c.* Lupe-Ø toto'i-ta nenka-wa-k.
'Lupe was sold the hen.'

For Type-A verbs, the highest ranking argument in the LS is selected as actor (*Goyo*); the theme is the lowest argument and so it is selected as the undergoer. The RECIPIENT appears as a non-macrorole oblique core argument. Following the case assignment rules proposed in (18), the highest ranking macrorole, the actor, will be assigned nominative case, whereas the other macrorole, the undergoer *toto'i*, will be assigned accusative case; this verb assigns the postposition *–u* to its non-macrorole oblique core argument. In the active version, the nominative NP serves as the PSA. This yields (39a). In the passive, however, the actor is suppressed, leaving the undergoer as the highest ranking direct core argument; hence it receives nominative case, as in (39b). The non-macrorole oblique core argument (RECIPIENT) cannot serve as the passive-PSA. This resembles the 'unmarked' choice for undergoer in languages like English.

For Type-B verbs, it is the accusative RECIPIENT that acts as the passive-PSA (40b). Hence, it is the undergoer. The theme appears as a non-macrorole direct core argument.

(40) a. Goyo-Ø Lupe-ta toto'i-ta miika-k. (=(28a))
Goyo-NOM Lupe-ACC hen-ACC give-PRFV
'Goyo gave Lupe the hen.'

b. Lupe-Ø u-ka toto'i-ta miik-wa-k.
Lupe-NOM the-ACC hen-ACC give-PASS-PRFV
'Lupe was given the hen.'

c.* U toto'i-Ø Lupe-ta miik-wa-k.
'The hen was given Lupe.'

With respect to the LS in (28d), the highest ranking argument is the actor, but the selection for undergoer is different from that in (39). Rather than the lowest, rightmost ranking argument being selected, the second lowest, *Lupe*, is chosen as the undergoer. This choice is not reflected in the case marking, because all of the non-actor direct core arguments are accusative in Yaqui. It is only apparent in the passive construction; only the accusative RECIPIENT can act as the passive PSA. Following the case assignment rules, in (40b) the highest raking macrorole receives nominative case, and because the actor is suppressed, the undergoer receives the nominative case; hence *Lupe* is the undergoer. In languages like English, this is the 'marked' choice for undergoer.

Dryer (1986) notes that rules in some languages are sensitive to the distinction between Direct and Indirect Objects, but others are sensitive to the distinction between Primary and Secondary Objects. A Primary Object is a RECIPIENT in a ditransitive clause or the theme/patient in a monotransitive clause, while a Secondary Object is a theme in a ditransitive clause. There are languages which have only the first possibility, some which have only the second, and some which have both. Based on the pattern in which the RECIPIENT is treated as grammatically the same as the single object of a monotransitive verb, it has been suggested that Yaqui is a Primary Object language (Rude 1996). Something similar has been said of other Southern Uto-Aztecan languages, i.e. Huichol (Comrie 1982), Cora (Vázquez 1996), Pima Bajo (Estrada 2003). Another piece of evidence to claim that Yaqui is a primary-object language is the fact that Yaqui shows a strong preference for animate RECIPIENTS (and inanimate themes). Nonetheless, using the same criteria and based on constructions like those in (39), Yaqui could be also considered a Direct-Indirect Object language.

RRG recognizes that primary object languages behave differently than the non-primary object languages because they permit only the 'marked' linking possibility in terms of the AUH. In VV&LP (1997: 387), the animacy of the semantic argument is fundamental to assigning macroroles in primary object languages: if there are two non-actor direct core arguments which could be undergoer and one of them is animate, then the animate argument will be the undergoer, regardless of its position in the LS. This means that the undergoer selection based on the AUH may be affected by a general principle to the effect of animacy in this type of languages. While this principle accounts for the examples in (26), (30b,d) and (31b) above, constructions like those in (41) below are problematic for this analysis. In (41a) the theme and RECIPIENT are both inanimate, whereas in (41b) the two are human.

(41) a. Tibu-Ø u-ka wikoi-ta juiwa-m u'ura-k.
Tibu-NOM the-ACC rifle-ACC bullet-PL take.away-PRFV
'Tibu emptied the rifle (of) the bullets.'

b. Aurelia-Ø Karmen-ta u-ka ili usi-ta bit-tua-k.
Aurelia-NOM Carmen-ACC the-ACC little child-ACC see-CAUSE-PRFV
'Aurelia showed Carmen the child.'

Since both accusative NPs are inanimate in (41a), the animacy principle makes no prediction as to which argument is the undergoer. Moreover, the basic undergoer selection embodied in the AUH, where the lowest argument is selected, makes the wrong prediction, as (42a) shows.

(42) a.* U-me juiwa-m u-ka wikoi-ta u'ura-wa-k.
the-PL bullet-PL the-ACC rifle-ACC take.away-PASS-PRFV
'The bullets were taken out of the rifle.'

b. U wikoi-Ø juiwa-m u'ura-wa-k.
the rifle-NOM bullet-PL take.away-PASS-PRFV
'The rifle was emptied [of] the bullets.'

The lowest ranking argument in the LS for *u'ura* 'take away' would be the theme, *juiwa* 'bullet', and therefore, following the AUH, it should be selected as the undergoer, yielding the passive sentence in (42a). This, however, is ungrammatical; only the RECIPIENT *wikoi* 'rifle' can serve as the passive-PSA in Yaqui, indicating that it is the undergoer. Neither the basic undergoer selection principle nor the animacy principle predicts the ungrammaticality of (42a) and the grammaticality of (42b).

The example with two human accusative NPs in (41b) is ambiguous, as either human participant can be construed as the RECIPIENT. In one reading, *Carmen* is the RECIPIENT and *the child* is the *theme*, i.e. *Aurelia shows Carmen the child*; in the other reading, the RECIPIENT is *the child* and the theme is *Carmen*, i.e. *Aurelia showed the child Carmen*. It means that there are two LSs for each reading, both given in (43). The two non-actor human arguments will appear in the accusative case in Yaqui, hence the ambiguity.

(43) a. [**do´** (Aurelia, Ø)] CAUSE [BECOME **see´** (Karmen, usi)] =
'Aurelia showed Carmen the child.'

b. [**do´** (Aurelia, Ø)] CAUSE [BECOME **see´** (usi, Karmen)] =
'Aurelia showed the child Carmen.'

When the two accusative arguments are human, the animacy-as-undergoer principle predicts that either NP can be selected as the undergoer and, consequently, it predicts that there should be two possible passive versions for the same LS. For the LS in (43a), the two possible passive versions are given in (44).

(44) a. Karmen-Ø u-ka ili usi-ta bit-tua-wa-k.
Carmen-NOM the-ACC little child-ACC see-CAUSE-PASS-PRFV
'Carmen was shown the child.'

b. U ili usi-ta Karmen-ta bit-tua-wa-k.
the little child-ACC Carmen-ACC see-CAUSE-PASS-ASTP
*'The child was shown [to] Carmen.'

In (44a) the RECIPIENT is selected as the undergoer and appears as the passive-PSA, while in (44b) the theme is selected as the undergoer and thus functions as the passive-PSA. The problem is that (44b) is not a possible passive version of *Aurelia showed Carmen the child* in (44a) with that meaning; the only possible passive variant of (43a) with that interpretation is (44a). Hence, the animacy principle makes another incorrect prediction: it fails to correctly predict undergoer selection with Type B verbs which take two inanimate arguments and with verbs which take two human arguments.

For the analysis of double-object constructions, some studies have also explored the relation between animacy and the relative order among the objects. Specifically, Primus (1998: 421) proposes that in the linearization of verbal arguments, at least in European languages, there are two types of relational concepts that qualify as grammatical factors in determining the basic position of recipient and patient core arguments: thematic relations and formal relations established by the case or adpositional marking of verbal arguments. Each of these two types of relation is organized into a hierarchy, as illustrated in (45).

(45) a. Thematic Hierarchy
Proto-Agent < Proto-Recipient < Proto-Patient

b. Case Hierarchy
Nominative/absolutive argument < accusative/ergative argument
< dative or oblique case arguments < adpositional argument

Roughly speaking, the thematic hierarchy in (45a) predicts that the recipient outranks the patient; this relative order is corroborated in many European languages. Yet the reverse order is suggested by another universal principle of morphological coding since patients are coded, in general, by a case which is higher in the case hierarchy in (45b) than the case canonically assigned to recipients. Thus, the case hierarchy predicts that the

patient will be ranked over the recipients. What Primus proposes is that the relative order of a Proto-RECIPIENT (i.e., recipient, goal, addressee, benefactive, and possessor) and a Proto-patient depends on their thematic relations or their formal coding properties. The interaction between the two hierarchies determines, then, the cross-linguistic variation of recipient and patient arguments arrangement. Presumably, they cover both the unmarked (basic) and the rigid orders by the stipulation preference vs. strictly.[1]

Besides the apparent arrangement freedom, there is something basically non-arbitrary about the way Yaqui accommodates its multiple accusative arguments. First of all, the language shows a strong preference for animate RECIPIENTS (and inanimate patients), and this tendency is even stronger for Type-B verbs, as shown in (46).[2] Of the three speakers consulted, two of them found a double clause ungrammatical, as in (46a-b), where the recipient is inanimate since 'there is nobody who actually receives the money'. The clause in (46c) needs to take a non-double object verb to be acceptable.

(46) a.* Lupe-Ø santo-ta u-ka tomi-ta maaka-k.
'Lupe presented the saint (with) the money.'

b.* Lupe-Ø teopo-ta u-ka tomi-ta maaka-k.
'Lupe presented the church (with) the money.'

c. Lupe-Ø u-ka tomi-ta santo-ta-u monto-k.
Lupe-NOM the-ACC money-ACC saint-ACC-DIR leave-PRFV
'Lupe left the money to the saint.'

[1] Like VV&LP, Primus also comments that animacy should be taken into consideration as a potential candidate for explaining the fact that agents preferably precede recipients and that recipients preferably precede patients (when formal coding does not intervene). This animate-inanimate order within double object constructions has been tested in several languages (as cited in Primus): Kekchi (Tomlin 1986), Tzotzil (Aissen 1984), both Mayan languages; Lakhota, Kinyarwanda (Siewirska 1988) and Sesotho (Morolong and Hyman 1977), the last two Bantu languages, as well as German (Zubin and Köpcke 1985).

[2] The only exception seems to be the verb *u'ura* 'take away' which may take an inanimate recipient if the theme is also inanimate, as shown in (41a) and (42).

Related to the relative word order in Yaqui three-argument constructions, we have seen that the nominative NP acting as the PSA tends to occur clause-initially. When the RECIPIENT is marked by a postposition, its position within the clause is relatively flexible; although it tends to precede the theme as we saw in (25a), (27) and (28a), it can also precede the verb as in (26a, b), or it can follow it as in (26c). When the RECIPIENT and theme are not morphologically distinguished, the preferred reading is when the RECIPIENT precedes the theme, especially when the two arguments are equally animate. In fact, whenever both interpretations make sense, the reverse order may result in the opposite reading, and each of these interpretations yields a different logical representation, as demonstrated in (43). This RECIPIENT-theme order tends to be maintained even when one of the accusative arguments is expressed within a heavy phrase. Our data show that it is preferable to split a heavy noun by placing the relative clause at the end of the main clause (47b-c), rather than disrupt the animate RECIPIENT-theme relative order.

(47) a. Empo yoem-ta [eskina-po wee-ka-m-ta] karo-ta reuwa-k.
2SG:NOM man-ACC corner-LOC stand-PRFV-CLM-ACC car-ACC lend-PRFV
'You lent the car [to] the man stood at the corner.'

b. Lupe-Ø ne libro-m maaka-k [em a miika-ka-'u].
Lupe-NOM 1SG:ACC book-PL present-PRFV 2SG:GEN 3SG:ACC give-PRFV-CLM
'Lupe gave me the book that you gave her.'

c. Ne u-me libro-m jamu-ta miika-k
1SG:NOM the-PL book-PL woman-ACC give-PRFV

[tuuka em ta'a-ka-'u].
yesterday 2SG:GEN know-PRFV-CLM
'I gave the books (to) the woman you met yesterday.'

In thinking about this preference for the recipient over the patient whenever both are equally animate, Van Valin (2001) proposed an alternative analysis where the undergoer selection is based on the principle 'select the second highest-ranking argument in the LS'.

With a two-place verb, the selection will work exactly the same way: the undergoer will be the non-actor direct core argument of the predicate. With a three-argument verb, however, the undergoer will always be the *y* argument (recipient). As an initial hypothesis, let us take this to be the principle for undergoer selection for Type-B verbs in Yaqui: the undergoer is the second highest ranking argument in the LS.[3] An initial test of this would be simple transitive verbs; does it work for them? If we look at the LS for (6a), repeated below, we can see that it does in fact work for simple transitive verbs as well.

(48) a. Kajlos-Ø u-ka mesa-ta kokta-k. (=(6a))
Carlos-NOM the-ACC table- ACC break-PRFV
'Carlos broke the table.'

a′. [**do′** (Kajlos, Ø)] CAUSE [BECOME **broken′** (mesa)]

The selection of the actor is unaffected: the highest ranking argument in the LS is the actor, which means that the *Kajlos* is the actor. The new principle states that the second highest ranking argument is the undergoer, which means that *mesa* 'table' is the undergoer. Consider now the LS for the verb *miika-* 'give' repeated below.

(49) a. Goyo-Ø Lupe-ta toto'i-ta miika-k. (=(28a))
Goyo-NOM Lupe-ACC hen-ACC give-PRFV
'Goyo gave Lupe the hen.'

b. [**do′** (Goyo, Ø)] CAUSE [BECOME **have′** (Lupe, toto'i)]

According to the AUH, the first argument position of **do′** (x, …), *Goyo*, is the highest ranking argument, so it is selected as the actor. The first argument position of a two-place **pred′** (x, y), *Lupe*, is the second highest ranked argument within the AUH, whereas the second argument position of such a predicate, *toto'i* 'hen', is the lowest ranked argument.

[3] In (49a), *Lupe* is also the second lowest ranking argument. For this LS, the two formulations are equivalent. However, when we examine derived verbs in section 4.3.2, we will show that the 'second highest ranking argument' analysis is the correct principle.

As (47) and (49) clearly show, it is the RECIPIENT NP, *wikoi* 'rifle' and *Lupe*, respectively, the second highest ranking argument in the LS, that is selected as undergoer.

However, Type-A verbs such as *nenka-* 'sell' do not follow this principle. With these verbs, the second highest argument is not selected as the undergoer, the lowest-ranking argument is; the second highest ranking argument appears as an oblique argument marked by a postposition. That means that, whereas Type-A verbs select the lowest ranking argument following the basic undergoer principles established in the AUH, the theme, Type-B verbs select the second highest argument, the RECIPIENT. Hence there is a split between Type-A and Type-B Yaqui verbs which revolves around different undergoer selection principles. Type-A verbs follow the same principle as English, while Type-B verbs follow the revised principle for the primary object pattern. The superiority of this second analysis for the analysis of verbs taking more than one accusative NP is clearer for derived verbs such as applicative, causative, propositional attitude and reported speech events.

4.3.2 Derived predicates. Yaqui presents an extensive set of valence-increasing suffixes. Some are common cross-linguistically, such as applicatives and causatives, and some are less common, such as the instructive and desiderative constructions. These derived clauses are investigated here since most of them allow only the multiple accusative variant. I will first describe applicative constructions, and then the other valence-increasing mechanisms.

4.3.2.1 Applicative clauses. Generally, the term applicative has been used to refer to those clauses that encode a new argument, the beneficiary, as a direct core argument rather than as an oblique or adjunct phrase. In applicative constructions, there is a new

argument in the clause, which is not a required argument of the verb. This new argument, however, displaces the default choice for undergoer (theme) if the verb is transitive (VV&LP: 337). For the same LS (50a), English presents alternative clauses to refer to the new argument. The 'unmarked' choice where the beneficiary '*for Sue'* is expressed as an adjunct in (50a) and the 'marked' choice where *Sue* is coded as a direct core argument in (50b).

(50) a. Larry$_{[actor]}$ baked a cake$_{[undergoer]}$ for Sue — unmarked choice
b. Larry$_{[actor]}$ baked Sue$_{[undergoer]}$ a cake — marked choice

c. [[**do´** (Larry, Ø)] CAUSE [BECOME **exist´** (cake)]] PURP [BECOME **have´** (Sue, cake)][4]

Yaqui also presents two alternative versions. The new argument can occur as an oblique phrase marked by the postposition *betchi'ibo* 'for' as in (51b), and as a direct core argument when the verb takes the derivational suffix *–ria* as in (51c). If the basic verb is transitive, such as in this case, the applicative derives a double-object construction.

(51) a. Aurelia-Ø u-ka wakabak-ta joa-k.
Aurelia-NOM the-ACC wakabaki-ACC cook-PRFV
'Aurelia cooked the wakabaki.'

b. Aurelia-Ø u-ka wakabak-ta joa-k Goyo-ta-betchi'ibo.
Aurelia-NOM the-ACC wakabaki-ACC cook-PRFV Goyo-ACC-for
'Aurelia cooked the wakabaki for Goyo.'

c. Aurelia-Ø Goyo-ta u-ka wakabak-ta joa-ria-k.
Aurelia-NOM Goyo-ACC the-ACC wakabaki-ACC cook-APPL-PRFV
'Aurelia cooked Goyo the wakabaki.'

d. [[**do´** (Aurelia, Ø)] CAUSE [BECOME **exist´** (wakabaki)]] PURP [BECOME **have´** (Goyo, wakabaki)]

[4] This LS is only for the recipient benefactive reading. Plain and deputative beneficiaries have different LSs. See VV&LP (382-384) for details on the analysis of purposive constructions.

Although some studies refer to applicative and benefactive as the same phenomenon, Shibatani (1996:173-4) argues that they are not the same. According to him, applicatives may code as direct core arguments locations, instruments, and other peripheral elements, while benefactives encode some sort of resulting change of possession similar to the give-type verbs. Benefactives do not involve the transformation of the 'dative shift' type, nor stipulate a restriction on the 3-to-2 advancement rule in terms of Relational Grammar, but the situation is construed according to the 'give' construction. He also points out that languages differ with respect to the range of acceptable benefactive expressions. This cross-linguistic variation may be observed in reference to the following English examples, which are arranged according to the degrees of ease of benefactive formation (Shibatani 1996: 169-170).

(52) a. I bought Mary a book
b *I opened Mary the door
c. *I closed Mary the door
d. *I swept Mary the garden
e. *I killed Mary the centipede
f. *I danced Mary
g. *I sang Mary
h. *I went Mary to the market

The transition from more restrictive languages to more liberal ones is observed at several cut off points. It seems that English draws the line between (52a) and (52b), although one can find a context where (52e) allows an acceptable benefactive reading; another major cut off point, observed in German, Japanese, and Italian, is between (52b) and (52c) where 'opening someone the door' is a viable expression, but 'closing someone the door' is not. Both are permitted by more liberal languages such as Indonesian, Javanese, Chichewa, Spanish, and some others. Yaqui seems to belong to the last group

where the transition line is drawn between (53g) and (53h), as illustrated below. Except for the last example (deputative reading), the rest are plain beneficiaries.

(53) a.	Ne Maria-ta libro-m jinu-ria-k	'I bought Mary a book'
b	Ne Maria-ta pueta-ta etapo-ria-k	'I opened Mary the door'
c.	Ne Maria-ta pueta-ta eta-ria-k	'I closed Mary the door'
d.	Ne Maria-ta wajpo-ta ba'ane-ria-k	'I swept Mary the field'
e.	Ne Maria-ta toto'i-ta me'e-ria-k	'I killed Mary the hen'
f.	Ne Maria-ta yi'i-ria-k	'I danced Mary'
g.	Ne Maria-ta bwiik-ria-k	'I sang Mary'
h.	*Ne jita nenenkiwa-u Maria-ta siika-ria	*'I went Mary to the market'

Except for the cognate-object verbs in (53f-g), the cross-linguistic lack of intransitive-based benefactives comes from the fact that there is no object involved that can be possessed by the beneficiary. Some intransitive benefactives express a malefactive reading (i.e., negative beneficiary) rather than a positive beneficiary. The malefactive reading is observed with active verbs like *go* (54a), state verbs like *die* (54b), as well as certain activity transitive verbs referring to cognate objects, e.g. *eat, drink, robe* (54c-d).

(54) a. Aurelia-Ø Goyo-ta siim-ria-k.
Aurelia-NOM Goyo-ACC go-APPL-PRFV
'Aurelia abandoned Goyo (*Aurelia walked/marched on behalf of Goyo).'

b. Jesus-Ø yoemmia muuk-ria-k.
Jesus-NOM people:PL die-APPL-PRFV
'Jesus's people died (*Jesus died on behalf of his people).'

c. Goyo-Ø serbesa-ta Fermin-ta ji'i-ria-k.
Goyo-NOM beer-ACC Fermin-ACC drink-APPL-PRFV
'Goyo drank Fermín's beer (*he drank the beer for/on behalf of Fermin).'

d. Goyo-Ø Aurelia-ta u-ka toto'i-ta etbwa-ria-k.
Goyo-NOM Aurelia-ACC the-ACC hen-ACC steal-APPL-PRFV
'Goyo stole the hen [from] Aurelia (*he stole it for/on behalf of Aurelia).'

To express that the event action is on behalf of the new argument, these clauses must be introduced by the postposition *betchi'ibo*. The counterexamples of malefactive clause in (54b) and (54d) are shown below.

(55) a. Jesus-Ø yoemmia-ta-betchi'ibo muuku-k.
Jesus-NOM people-ACC-for die-PRFV
'Jesus died for/on behalf of the people.'

b. Goyo-Ø u-ka toto'i-ta Aurelia-ta-betchibo etbwa-k.
Goyo-NOM the-ACC hen-ACC Aurelia-ACC-for steal-PRFV
'Goyo stole the hen for/on behalf of Aurelia'

Yaqui applicative clauses are restricted both semantically and syntactically. [5] Semantically, they require the applied argument to be an animate participant. This restriction is responsible for the ill-formedness of the clause below.

(56) a. *Karmen-Ø bwa'a-ta wakas-ta toi-ria-k.
Carmen-NOM soup-ACC meat-ACC bring-APPL-PRFV
'Carmen brought the soup the meat.'

b. Karmen-Ø bwa'a-ta-betchi'ibo wakas-ta toja-k.
Carmen-NOM soup-ACC-for meat-ACC bring-PRFV
'Carmen brought the meat for the soup.'

Structurally, they involve three NPs, i.e. NP_1=human agent, NP_2=human goal, NP_3=object theme, where possessor and theme are always accusatives. As we saw in (50a-b), if the basic verb is intransitive, then the derived verb takes two core arguments, the effector NP and the accusative new argument. If the basic verb is monotransitive, then the derived verb takes three arguments, the effector NP, the accusative theme and the accusative beneficiary. The applicative suffix *–ria* can be added to any Type-A three-argument verbs, such as *jinu* 'to buy' in (57b), resulting in a four-argument derived verb where two arguments are accusative. However, *-ria* cannot be attached to Type-B verbs, as the ungrammaticality in (57c) shows.

(57) a. Goyo-Ø Peo-ta-u u-ka toto'i-ta jinu-k.
Goyo-NOM Pedro-ACC-DIR the-ACC hen-ACC buy-PRFV
'Goyo bought the hen from Pedro.'

[5] For a simple analysis, I will use the term "applicative" henceforth.

b. Goyo-Ø Peo-ta-u u-ka toto'i-ta Aurelia-ta jinu-ria-k.
Goyo-NOM Pedro-ACC-DIR the-ACC hen-ACC Aurelia-ACC buy-APPL-PRFV
'Goyo bought Aurelia the hen from Pedro.'

c. * Goyo-Ø jiosi-m Adriana-ta Aurelia-ta miik-ria-k.
Goyo-NOM book-PL Adriana-ACC Aurelia-ACC give-APPL-PRFV
'Goyo gave Adriana the book (on behalf of) Aurelia.'

d. Goyo-Ø jiosi-m Adriana-ta miika-k Aurelia-ta-betchi'ibo.
Goyo-NOM book-PL Adriana-ACC give-PRFV Aurelia-ACC-for
'Goyo gave Adriana the book for Aurelia.'

The fact that *giving* verbs do not allow the applicative suffix has been observed in other languages, such as English and German. In this vein, Shibatani (1996: 169) argues that whereas verbs such as *buy, make* and *bake* do not inherently encode in their semantic specifications the notion of change of possession to a third party, the *giving* verbs do. Thus, a complex clause such as *miik-ria* 'give somebody something on behalf of somebody else' will create a situation where one of the two animate participants, either the primary object of *miika* or the beneficiary of *–ria*, will be not favored as a possessor of the transferred object, and thus, the inherent notion of change of position would not be satisfied.

The interesting point here is that an applicative construction derived from a monotransitive verb takes an accusative argument, whereas constructions derived from a three-argument verb take two accusative arguments, the theme and the beneficiary. Following the macrorole selection in the AUH, in the LS of the derived verb *joa-ria* ´cook for' in (51d) and repeated below, the highest ranked argument is selected as the actor; this is true for applicative and non-applicative clauses. According to the case assignment rules proposed for Yaqui, this highest ranked macrorole receives nominative case and so acts as the PSA.

(58) a. Aurelia-Ø Goyo-ta u-ka wakabak-ta joa-ria-k. (=(51c))
Aurelia-NOM Goyo-ACC the-ACC wakabaki-ACC cook-APPL-PRFV
'Aurelia cooked Goyo the wakabaki.'

b. [[**do´** (Aurelia, Ø)] CAUSE [BECOME **exist´** (wakabaki)]] PURP
[BECOME **have´** (Goyo, wakabaki)]

For clauses where the beneficiary is introduced by *betchi'ibo*, the undergoer corresponds to the leftmost argument (theme) in the LS of the non-derived verb; the beneficiary is a non-macrorole oblique core argument. Evidence for this comes from passive voice since only the accusative theme can function as the passive-PSA in this type of construction.

(59) a. U wakabaki-Ø joa-wa-k Goyo-ta-betchi'ibo.
the wakabaki-NOM cook-PASS-PRFV Goyo-ACC-for
'The wakabaki was cooked for Goyo.'

b. *Goyo-Ø u-ka wakabak-ta joa-wa-k.
'Goyo was cooked the wakabaki [for].'

For clauses where the beneficiary and the theme are both marked as accusative, we need first to determine which of these accusative arguments is the undergoer and which one is the non-macrorole direct core argument. The use of clitics, arguments outside the core, relativization and reflexivization cannot distinguish between the beneficiary and the theme. As shown in (60), the two accusative arguments can be equally modified by a relative clause.

(60) a. Aurelia-Ø Goyo-ta joa-ria-k [tuuka u-ka wakas-ta
Aurelia-NOM Goyo-ACC cook-APPL-PRFV yesterday the-ACC meat-ACC

bempo'im toja-ka-'u].
3PL:GEN bring-PRFV-CLM
'Aurelia cooked Goyo the meat that they brought yesterday.'

b. Aurelia-Ø u-ka wakabak-ta joa-ria-k
Aurelia-NOM the-ACC wakabaki-ACC cook-APPL-PRFV

[u-ka o'ou-ta yepsa-ka-'u].
the-ACC man-ACC arrive-PRFV-CLM
'Aurelia cooked the meat [on behalf of] the man that arrived.'

The examples in (61a-b) show that the derived verb can take a pronominal clitic referring not only to the plural theme but also to the plural recipient. In (61c), the reflexive pronoun refers to the applied animate argument.

(61) a. Goyo-Ø u-me jaamuch-im u-ka toto'i-ta am = jinu-ria-k.
Goyo-NOM the-PL woman-PL the-ACC hen-ACC 3SG:ACC = buy-APPL-PRFV
'Goyo bought (them) the hen (on behalf of) the women.'

b. Goyo-Ø u-ka jaamut-ta u-me toto'i-m am = jinu-ria-k.
Goyo-NOM the-ACC woman-ACC the-PL hen-PL 3SG:ACC = buy-APPL-PRFV
'Goyo bought (them) the hens (on behalf of) the woman.'

c. Goyo-Ø toto'i-ta au = jinu-ria-k.
Goyo-NOM hen-ACC 3SG:REFL = buy-APPL-PRFV
'Goyo bought the hen for himself'

For the wh-expressions in the active voice, it is possible to question the theme argument as in (62a), and also the beneficiary as in (62b).

(62) a. Jiita a = jinu-ria-k Joan-Ø Maria-ta?
what:ACC 3SG:ACC = buy-APPL-PRFV Juan-NOM Maria-ACC
'What did Juan buy for Maria'

b. Jabe-ta a = jinu-ria-k Joan-Ø toto'i-ta?
who-ACC 3SG:ACC = buy-APPL-PRFV Juan-NOM hen-ACC
'For whom did Juan buy the hen?'

Again, it is the passive voice that distinguishes between the two accusative arguments. When the passive is added to an applicative verb, it is the new (applied) argument which serves as the passive-PSA in the passive in (63a), rather than the accusative theme in (63b). The accusative theme can function as the passive-PSA only when the beneficiary occurs within an oblique phrase.

(63) a. Maria-Ø a = jinu-ria-wa-k u-ka toto'i-ta.
Maria-NOM 3SG:ACC = buy-APPL-PASS-PRFV the-ACC hen-ACC

'Maria was bought the hen [for].'

b. *U toto'i a = jinu-ria-wa-k Maria-ta.
'The hen was bought for Maria.'

c. U toto'i-Ø jinu-wa-k Maria-ta-betchi'ibo.
the hen-NOM buy-PASS-PRFV Maria-ACC-for
'The hen was bought for Maria.'

The undergoer selection in the applicative clauses illustrated above, where the beneficiary is animate and the theme inanimate, is predicted by the original animacy principle: the undergoer is the animate (beneficiary) participant. However, in clauses where the beneficiary and theme are both animate as in (64) below, the question arises as to which of the two accusative arguments is the undergoer. Again, because the two non-core arguments are equally animate, the clause is ambiguous, as either animate participant can be construed as the beneficiary. The lexical representation for the reading 'Goyo bought the cow for the benefit of the bull' is in (64b). As with three-argument verbs, the passive voice distinguishes between the two non-actor direct core arguments. For the LS in (64b), it is the beneficiary *wakas* 'cow' which act as the PSA in the passive version in (64c). The clause in (64d) cannot be the passive version of this LS with that meaning; the theme *tooro* 'bull' can serve as the passive-PSA only when the beneficiary is coded within an oblique phrase as illustrated in (64e).

(64) a. Goyo-Ø u-ka wakas-ta u-ka tooro-ta jinu-ria-k.
Goyo-NOM the-ACC cow-ACC the-ACC bull-ACC buy-APPL-PRFV
'Goyo bought the bull [on behalf of] the cow.' *or*
'Goyo bought the cow [on behalf of] the bull.'

b. [[**do´** (Goyo, Ø)] CAUSE [BECOME **have´** (Goyo, tooro)]] PURP [BECOME **have´** (waka, tooro)] =
'Goyo bought the cow [on behalf of] the bull.'

c. U wakas-Ø u-ka tooro-ta jinu-ria-wa-k.
the cow-NOM the-ACC bull-ACC buy-APPL-PRFV

'The cow was benefited by the bull's being bought.'

d. * U tooro-Ø u-ka wakas-ta jinu-ria-wa-k.
the cow-NOM the-ACC bull-ACC buy-APPL-PRFV
'The bull was benefited by the cow's being bought.'

e. U tooro-Ø u-ka wakas-ta-betchi'ibo jinu-wa-k.
the bull-NOM the-ACC bull-ACC-for buy-PRFV
'The bull was bought for the cow.'

In terms of the LS in (64b), in the component PURP [BECOME **have**′ (waka, tooro)], the beneficiary *wakas* is the *y* argument, and the theme *tooro* is the *z* argument. The *y* argument, as the first argument of a two-place state predicate, is the second-highest ranked argument in this LS in terms of the AUH. Evidence for that comes from the passive version in (64c). Then, rather than the lower *z* (theme) argument in the LS of the applied verb, it is the second-highest argument (beneficiary) that occupies the PSA position in the passive clause, hence it is the undergoer. The accusative theme is a direct core argument non-macrorole.

4.3.2.2 Other valence-increasing mechanisms. When a causative suffix like *–tua* 'cause to do' is added to a basic verb, a new argument -*causer*- is added to the clause and the original subject *–causee*- is marked by the accusative suffix *–ta*, regardless of the syntactic valence of the basic verb. See the examples in (65). The same pattern is observed among other less common derivational suffixes, such as the 'educative' *–majta* 'to teach' in (66) and the desiderative *–'ii'aa* 'request, want' in (67). All of these verbal suffixes add an actor-type argument to the set of direct core arguments, altering the logical structure of the verb and, consequently, the assignments of macroroles.

(65) Causative construction expressed by *–tua*
a. Joan-Ø im chu'u-ta nee me'e-tua-k.
Juan-NOM 1SG:GEN dog-ACC 1SG:ACC kill-CAUSE-PRFV
'Juan made me kill my dog.'

b. U maejto-Ø usi-ta mansana-ta yoem-ta miik-tua-k.
the teacher-NOM child-ACC apple-ACC man-ACC give-CAUSE-PRFV
'The teacher made the child give the man an apple.' or
'The teacher made the man give the child an apple.'

c. [**do´** (maejto, ∅)] CAUSE [[**do´** (usi, Ø)] CAUSE [BECOME **have´** (yoem-, mansana)]] =
'The teacher made the child give the man an apple.'

(66) Educative construction expressed by *–majta*

a. Fermin-Ø u-ka chu'u-ta nee jinu-majta-k.
Fermin-NOM the-ACC dog-ACC 1SG:ACC buy-TEACH-PRFV
'Fermin taught me how to buy a dog.'

b. Fermin-Ø usi-ta mansana-ta yoem-ta u'ura-majta-Ø.
Fermin-NOM child-ACC apple-ACC man-ACC take.away-WANT-PRES
'Fermin taught the child how to take the apple away (from) the man.'

c. [**do´** (Fermin, ∅)] CAUSE [[**know´** (usi, [**do´** (usi, Ø)] CAUSE [BECOME NOT **have´** (yoem-, mansana)])

(67) Desiderative constructions expressed by *–'ii'aa*

a. Fermin-Ø u-ka chu'u-ta nee jinu-'ii'aa-k.
Fermin-NOM the-ACC dog-ACC 1SG:ACC buy-WANT-PRFV
'Fermin wanted me to buy a dog.'

b. Fermin-Ø usi-ta mansana-ta yoem-ta u'ura-'ii'aa-Ø.
Fermin-NOM child-ACC apple-ACC man-ACC take.away-WANT-PRES
'Fermin wants the child to take the apple away (from) the man.'

c. [**do´** (Fermin, [**want´** (Fermin, usi)])] CAUSE [**do´** (usi, Ø) CAUSE [BECOME NOT **have´** (yoem-, mansana)])

The verbal suffixes *–tua*, *–majta*, *–'ii'aa,* can be added to intransitive, transitive or ditransitive bases. Accordingly, the language not only allows clauses with two non-actor direct arguments, but clauses like 'the teacher made the child give the man an apple' in (65b) present three accusative arguments (i.e., the four-place verb). Similar constructions have been observed for other languages, i.e. Central Alaskan Yup'ik (Mithun 2000). As in other multiple accusative constructions, the non-actor animate direct core argument, the derived argument, tends to precede not only the accusative theme but also the

RECIPIENT. The new argument acting as the PSA in the active clause, the actor *Fermin* of the matrix verb, takes the nominative case, and all of the direct core arguments of the basic verb are marked as accusative. The undergoer is assigned to the second highest ranking argument, rather than the accusative theme or RECIPIENT. In the LSs in (65c)-(67c), the second highest ranked argument in the entire LS, the causee, the experienced, and the wanted animate participant, is also the highest ranked argument in the embedded LS. The examples below show the passive version of Type-B-based clauses above, where the passive PSA is the second highest ranked argument.[6] Any other argument functioning as the passive-PSA is rejected.

(68) a. U usi-Ø mansana-ta yoem-ta miik-tua-wa-k.
the child-NOM apple-ACC man-ACC give-CAUSE-PASS-PRFV
'The child was made to give the man the apple.'

b. U usi-Ø mansana-ta yoem-ta u'ura-majta-wa-Ø.
the child-NOM apple-ACC man-ACC take.away-TEACH-PASS-PRES
'The child is taught to take the apple away (from) the man.'

c. U usi-Ø mansana-ta yoem-ta u'ura-'ii'aa-wa-Ø.
the child-NOM apple-ACC man-ACC take.away-WANT-PASS-PRES
'The child is wanted to take the apple away (from) the man.'

The superiority of the undergoer as the second-highest argument principle is even clearer when the applicative suffix *–ria* co-occur with one of these verbal suffixes, adding two new accusative human arguments to the set of core arguments. The applicative version of the causative clause in (65a) is shown below. Recall that both human arguments, the causee and the beneficiary, have been previously selected as the undergoer, but here the causee is the only acceptable choice.

[6] The language presents other complex constructions where the matrix verb is added to the linked verb, e.g. direct perception, propositional attitude predicates such as *–maachia* 'believe' and *–'ea* 'think', as well as the indirect quotation *–tia*. These construction types will be discussed in detail in chapter 7.

(69) a. Goyo-Ø Peo-ta jamut-ta toto'i-ta me'e-tua-ria-k.
Goyo-NOM Pedro-ACC woman-ACC hen-ACC kill-CAUSE-APPL-PRFV
'Goyo made Pedro kill the hen (for) the woman.' *or*
'Goyo made the woman kill the hen (for) the Pedro'

b. [**do´** (Goyo, ∅)] CAUSE [[**do´** (Peo, Ø)] CAUSE [BECOME **have´** (jamut, kaba'i)] & CAUSE [BECOME **dead´** (kaba'i)]] =
'Goyo made Pedro kill the hen (for) the woman.'

c. Peo-Ø jamut-ta toto'i-ta me'e-tua-ria-wa-k.
Pedro-NOM woman-ACC hen-ACC kill-CAUSE-APPL-PASS-PRFV
'Pedro was made to kill the hen (for) the woman.'

Beside the ambiguity when more than one argument is human, the preferred order will be the one where the causee precedes the beneficiary. In (69b), the causee is the second-highest ranking argument as embodied in the AUH (the higher ranked argument is the actor), whereas the beneficiary RECIPIENT is the second-lowest; since the causee is selected as the undergoer over the beneficiary, it demonstrates the superiority of the undergoer as the second-highest argument principle, over the selection of the second-lowest one. One more example is given below. In (70a), the applicative *–ria* and the desiderative verbal suffix *–'ii'aa* co-occur; the LS in (70b) corresponds to the reading 'Fermin wanted me to buy Pedro a dog' and its unique possible passive counterpart shown in (70c).

(70) a. Fermin-Ø Peo-ta chu'u-ta nee jinu-ria-'ii'aa-k.
Fermin-NOM Pedro-ACC dog-ACC 1SG:ACC buy-APPL-WANT-PRFV
'Fermin wanted me to buy Pedro a dog.' or
'Fermin wanted Pedro to buy me a dog.'

b. [**do´** (Fermin, [**want´** (Fermin, 1sg)]) CAUSE [BECOME **have´** (1sg, chu'u)] PURP [BECOME **have´** (Peo, chu'u)]) =
'Fermin wanted me to buy Pedro a dog'

c. Nepo Peo-ta u-ka chu'u-ta jinu-ria-'ii'aa-wa-k.
1SG:NOM Pedro-ACC the-ACC dog-ACC buy-APL-WANT-PASS-PRFV
'I was wanted to buy Pedro a dog.'

For these four-argument derived verbs, it is the accusative agent-type argument that systematically serves as the undergoer, and so it is the passive PSA. This selection is successfully predicted by the revised principle since this agent-type argument occupies the first argument position of the **do´** (x, Ø) predicate, a higher position compared to the beneficiary, i.e. first argument of **pred´** (x, y).

4.4 Linking algorithm for Yaqui simple clauses

Therefore, two-, three- and four-argument verbs in Yaqui are characterized by the occurrence of an agent-type argument and multiple non-agent arguments. The agent-type argument appears in the highest-ranked argument in the LS in terms of the AUH in Figure 3.4; it takes the nominative case and hence serves as PSA in active clauses. We have seen that, except for Type-A verbs where the undergoer is the lowest-ranked argument, the other lexical and derived verbs systematically select the second highest-ranked argument as the undergoer. The RECIPIENT for Type-B verbs, the beneficiary in applicatives, the causee in causatives, and the 'taught' and 'wanted' participant in the other derived double-object constructions. This particular undergoer selection has two important consequences.

First of all, although the Yaqui data do not contradict the original Animate-as-Undergoer Principle, it is difficult to predict the correct choice when more than one of the multiple accusative arguments is animate. By revising this principle and establishing undergoer identity in terms of argument position in the LS, RRG properly predicts undergoer selection. Second and more importantly, the Actor-Undergoer Hierarchy works properly for two-place predicates and for Type-A verbs in which the undergoer is the lowest-ranked argument (theme). However, this hierarchy works differently for those sentences with two or more non-agent direct core arguments where the undergoer is

always the second highest-ranked argument. Moreover, both patterns are found in the same language, as we have seen. The principle governing the selection of the undergoer argument is different in secondary object languages than in indirect object languages, and consequently the markedness relations expressed in the Actor-Undergoer Hierarchy as proposed in VV&LP are not valid universally, and should be reformulated. As proposed in Guerrero and Van Valin (2004), the undergoer selection principle in the hierarchy must be reformulated as in Figure 4.1.

ACTOR				UNDERGOER
Arg. of DO	1st arg. of **do´** (x,…	1st arg. of **pred´** (x, y)	2nd arg. of **pred´** (x, y)	Arg. of state **pred´** (x)

Actor selection: Highest ranking argument in LS
Undergoer selection:
Principle A: Lowest ranking argument in LS
Principle B: Second highest ranking argument in LS

Figure 4.1: Actor-Undergoer Hierarchy (revised)

The actor selection principle is the same as before. When the verb has only two arguments, then the two undergoer selection principles are equivalent and always pick out the same argument as the undergoer. When the verb has three or more arguments, then the difference between the two principles comes into play, yielding the different patterns with three-argument verbs discussed in this paper. In Yaqui, both principles are clearly operative: some lexical verbs follow Principle B, some verbs take Principle A as an absolute, not as a default, e.g. *nenka* 'sell'. No verbs take Principle B as just the default pattern. Principle B also accounts straightforwardly for multi-transitive verbs, as demonstrated in section 4.3.

Case assignment rules are also related to the macrorole assignment. The revised case marking rules for Yaqui are presented in (71). There are only two cases, nominative and accusative, meaning that these rules only apply to direct core arguments.

(71) Case marking rules Yaqui (revised)
   a. The highest-ranking core macrorole argument takes the nominative case
   b. The other direct core argument(s) take the accusative case

An interesting aspect of Yaqui grammar is that there is no 'dative' case as a grammatical category. All oblique arguments must be followed by postpositions marking adjunct (peripheral) relationships to the verb. By definition, in RRG pre- and postpositions marking oblique core arguments are not listed in the lexical entry of the verb, and hence there are some general principles to predict these adpositions. A first attempt to define the general principles marking oblique core arguments in Yaqui is the following.

(72) Postposition assignment rules for Yaqui (preliminary)
   a. Assign *–u* to the non-MR *y* argument in LS segment: BECOME/ING **pred´** (y, z)
   b. Assign *-betana* to non-MR *y* argument in LS segment: BECOME/ING NOT **pred´** (x, y)
   c. Assign *-mak* to non-MR *y* argument if, given two arguments, *x* and *y*, in a LS with *x* lower than or equal to *y* of the AUH, *y* is not selected as a macrorole.
   d. Assign *–betchi'ibo* to the non-MR *y* argument if LS segment containing PURP [BECOME **pred´** (y, z)], if *y* is not selected as a macrorole.

Once we have established the macrorole selection, the case marking and the postpositional system for the language, the next step is to determine the linking algorithm in simple constructions. Within this theoretical framework, cross-constructional and cross-linguistic generalizations are captured in terms of the general principles and constraints that constitute the linking algorithm, e.g. the actor-undergoer hierarchy, the layered structure of the clause, and the privileged syntactic argument selection hierarchy. Only the idiosyncratic, language-specific features of constructions are represented in

constructional templates. Each constructional template contains syntactic, morphological, semantic and pragmatic information about the construction in question. A first approximation for the linking procedure from semantics (LS) to syntax (LSC) in Yaqui simple clauses is summarized in (73); only the relevant principles are included. These are the general linking principles, which may be overridden by the specific requirements of a construction as expressed in its constructional template.

(73) Linking algorithm: Semantics → Syntax for Yaqui simple clauses

1. Construct the semantic representation of the sentence, based on the LS of the predicator.
2. Determine the actor and undergoer assignment following the revised Actor-Undergoer Hierarchy in Figure 4.1

3. Determine the morpho-syntactic coding of the arguments
   a. Select the PSA, based on the PSA selection hierarchy (a′) and the relevant principles of Accessibility (a′′)

      a′. Privileged syntactic argument selection hierarchy
      Arg of DO > 1st arg of **do′** >1st arg of **pred′** (x, y) > 2nd arg of **pred′** (x, y) > arg of **pred′** (x)

      a′′. Accessibility to Privileged Syntactic Argument Principles
      a. Accusative constructions: highest ranking direct core argument in terms of (a′)
      c. Restrictions on PSA in terms of macroroles status:
         1. Languages in which only macrorole arguments can be PSA: German, Italian, Dyrbal, Jacaltec, Sama…

   b. Assign the XPs the appropriate case markers and/or adpositions following the case marking rules and the postpositional rules for the language.

4. Select the syntactic template(s) for the sentences:
   a. Syntactic template selection principle:
      The number of syntactic slots for arguments and argument-adjuncts within the core is equal to the number of distinct specified argument position in the semantic representation of the core.

   b. Language-specific qualifications of the principle in (a):
      1. Argument-modulation voice constructions reduce the number of core slots by 1.

2. The occurrence of a syntactic argument in the pre/postcore slot reduces the number of core slots by 1.

5. Assign XPs to positions in the syntactic representation of the sentence.
   a. Assign the [-WH] XPs to the appropriate positions in the clause.
   b. If there is a [+WH] XP, assign it to the precore slot.
   c. A non-WH XP may be assigned to the precore or postcore slot, subject to focus structure restrictions (optional).

   d. Assign the XP(s) of LS(s) other than that of the predicator in the nucleus to
      1. the periphery (default), or
      2. the precore or postcore slot, or
      3. the left-detached position.

After the logical structure of a predicate has been established, in Yaqui the actor and undergoer macroroles are assigned in terms of the revised AUH in Figure 4.1. The actor selection is exactly the same as in other accusative languages, but the undergoer selection is determined by two principles: Principle A which selects the lowest-ranking argument, i.e. two-argument verbs, Type-A three-argument verbs, or Principle B which selects the second highest-ranking argument, i.e. Type-B three-argument verbs, derived verbs. The operative principle will be specified in the lexical entry of the relevant verb. The PSA selection principle follows the accusative pattern: the PSA corresponds to the highest-ranking argument in terms of the AUH, but this PSA selection is restricted to macrorole arguments in Yaqui (step 3a´´). Because there is no dative case and multiple accusative arguments are allowed, the case assignment rules need to be formulated as in (71): the nominative case is assigned to the highest macrorole (actor), while the accusative case is assigned to the other direct core arguments (step 3b). Some preliminary postpositional rules for oblique core arguments are presented in (72). Figure 4.2 shows the LSC and the linking algorithm for the clause *Goyo gave Lupe the hen* in (28a).

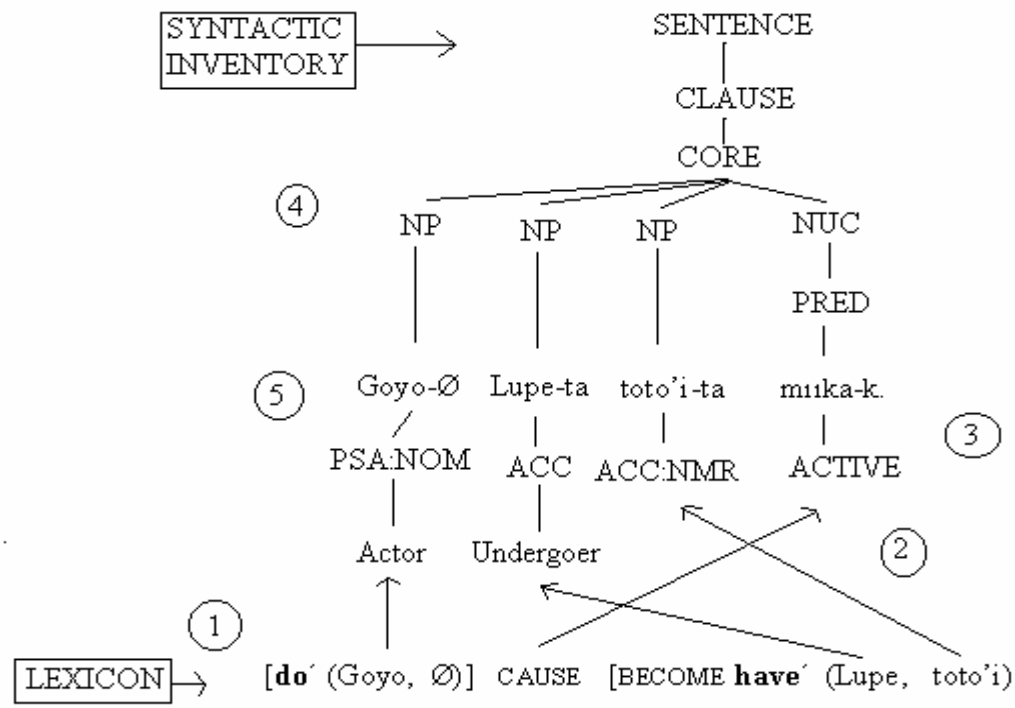

Figure 4.2: Semantics to syntax linking in double object constructions

The Yaqui passive construction is a good example of the interaction of the general principles of the voice constructions and language-specific properties. The specific features of the Yaqui passive are represented in the constructional template in Table 4.1. The distinction between passive and impersonal constructions in Yaqui is explained in the syntactic linking: the undergoer is not linked to the PSA, but it remains as direct core argument macrorole.

Table 4.1 Constructional template for Yaqui passives

CONSTRUCTION: Yaqui passive
SYNTAX: Template(s): (4b,2) PSA: (3a,c1) Linking: Actor ≠ PSA; obligatorily omitted Undergoer = PSA
MORPHOLOGY: Verb + *-wa*
SEMANTICS: PSA is not instigator of state of affairs
PRAGMATICS: Illocutionary force: Unspecified Focus structure: No restrictions; PSA = topic (default)

4.5 Summary

This chapter analyzed one-, two- and three-argument (lexical and derived) verbs in Yaqui. The status among the non-actor core arguments was established by exploring different morpho-syntactic properties. Among them, only the passive voice distinguishes between direct core arguments and oblique core arguments: only direct core arguments can serve as the passive-PSA. All direct core arguments are marked by accusative case in Yaqui; oblique core arguments are marked by postpositions. The Actor-Undergoer Hierarchy was revised in order to predict the mixed undergoer selection pattern in Yaqui. The following three chapters analyze in detail complex construction involving complement-taking predicates.

Chapter 5

THE NOTION OF CAUSATION

This chapter first introduces the layered structure of the clause for complex sentences, section 5.1, and it then initiates the analysis of complex constructions in Yaqui. The analysis begins with the morpho-syntactic properties of the closest semantic relationship: causation. § 5.2.1 analyzes non-verbal causatives, §5.2.2 deals with verbal causatives, §5.2.3 explores a 'special' type of jussive constructions. Section 5.3 establishes the functional and formal distinctions between the two major types of causative constructions and determines their juncture-nexus types. Section 5.4 summarizes this chapter.

5.1 The layered structure of the clause for complex sentences

For the study of complex constructions, RRG seeks to address two crucial questions:

i. What are the units involved in complex sentence constructions?
ii. What are the relationships among the units in the constructions?

Given RRG's approach to clause structure, it is not surprising that this theoretical perspective diverges from the standard analysis in answering both questions. To answer the first question, RRG claims that the units in complex constructions are those of the layered structure of the clause: nucleus, core and clause. The nuclear junctures are single cores containing more than one nucleus, and the multiple nuclei function as a single complex predicate, taking a single set of core arguments. In the core juncture, there is a single clause containing more than one core, each with its own set of core arguments, constituting two distinct cores. In a clausal juncture, whole clauses are joined and each clause may be fully independent of the others. The schematic representations of each juncture level are in (1).

(1) a. Nuclear juncture: [$_{CORE}$ ... [$_{NUC}$ ... PRED] ... + ... [$_{NUC}$ ... PRED]...]
b. Core juncture: [$_{CLAUSE}$... [$_{CORE}$ ...] ... + ... [$_{CORE}$ ...]...]
c. Clausal juncture: [$_{SENTENCE}$ ... [$_{CLAUSE}$...] ... + ... [$_{CLAUSE}$...]...]

To answer the second question, RRG proposes three nexus relations, which are distinguished on the basis of the structural dependency and operator dependency, as illustrated in Figure 5.1. They can first be divided into the categories of independent and dependent. The independent nexus relation is exhibited in coordination, in which the two units are conjoined in an equal-status relation, independent of one another. The dependent relations are further divided into structural-dependent and operator-dependent relations. The former is manifested in subordination and the latter in cosubordination. Subordination involves the embedding of one unit in another, and the embedded unit may not have the form of an independent main clause, i.e. it contains a subordinator marker. Here, one unit functions either as an argument (i.e., complementation) or as a modifier (i.e., adverbial clauses). Cosubordination shares some properties of coordination along with some properties of subordination; the co-existing elements obligatorily share an operator at the relevant level of juncture but are structurally independent of one another in the sense that the presence of one element does not entail the presence of the other element. This character of operator-dependency is distinct from that of coordination, in which each unit potentially has its own operator at the level of linkage.

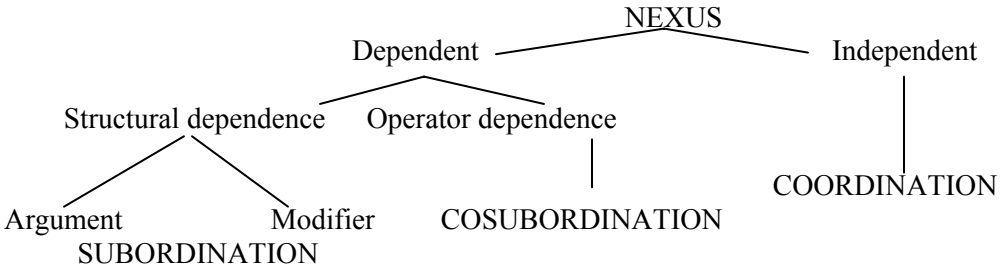

Figure 5.1: Nexus Relations

There are, then, three possible levels of juncture: clausal, core and nuclear; and there are three possible nexus relations among the units in the juncture: coordination, subordination, and cosubordination. All three types of nexus are possible in all three forms of juncture, meaning that there are nine possible juncture-nexus types. More recently, Van Valin (2005) included two more juncture-nexus types, which are unique in that for the level of juncture the full range of nexus types is not available. They involve the linking of whole sentences: sentential coordination and sentential subordination. In addition, two types of subordination are considered, one where the subordinate junct acts as an argument of a matrix predicate (daughter subordination) and one where the subordinate junct serves as an adjunct modifier (peripheral subordination).

A language does not need to have all eleven juncture-nexus combinations, and in fact most do not. It is important to keep in mind that these juncture-nexus types are abstract linkage relations, not grammatical constructions types; this means that each clause linkage type may be observed in more than one grammatical construction in a language. The juncture-nexus combinations are organized into a hierarchy ranked in terms of the tightness of syntactic link or bond between them, i.e. the Syntactic Relation Hierarchy. There is a basic principle governing these constructions in which the unmarked linkage involves units at the same level of juncture. This default may be referred to as 'symmetrical' linkage. The major exception for this principle is complementation, the use of clauses as core arguments. It results in a larger unit being linked to a smaller unit, i.e., a clause embedded in a core. Such a linkage will be termed 'asymmetrical'.

These syntactic combinations are used to express certain semantic relations between the units in the juncture, e.g. causation, perception, discourse, temporal sequence. The

theory of interclausal semantic relations establishes that the semantic relations themselves can be ranked in a continuum based on the degree of semantic cohesion between or among the units, i.e., the Semantic Relation Hierarchy. As first argued by Silverstein (1976) and Givón (1980), there is a fundamentally iconic relationship between the syntax and the semantics of clause linkage: the closer the semantic relationship between two propositions, the stronger the syntactic link joining them. Based on this form-function iconic principle, RRG juxtaposes the syntactic and the semantic hierarchies to create the Interclausal Relations Hierarchy (revised) illustrated in Figure 5.2.

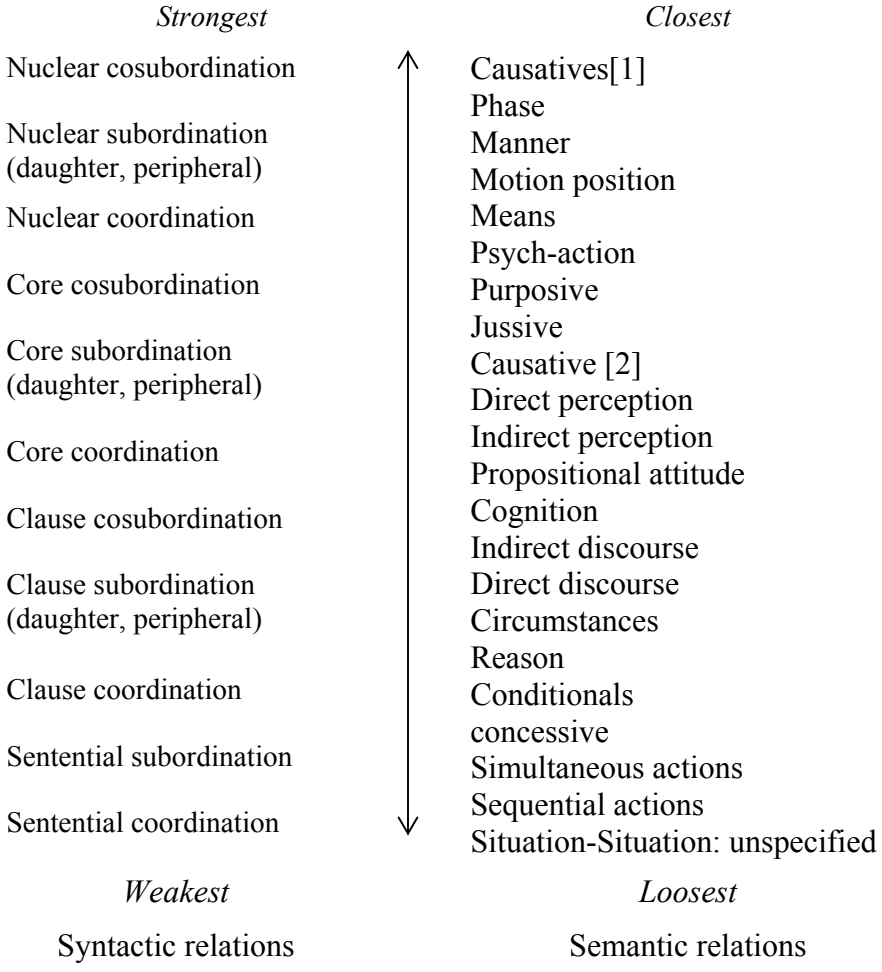

Figure 5.2: Interclausal Relation Hierarchy [IRH] (revised)

Syntactically, the eleven possible juncture-nexus types are ranked in terms of the tightness of the syntactic link or bond between them.[7] At the bottom are combinations of whole clauses constituting sentences; as one goes up the hierarchy, the linked units lose more and more features of an independent clause until they reduce it to a bare nucleus or predicate. The features lost include both operators and the coding of semantic arguments distinctly as core arguments of the predicate in the nucleus. In a clausal juncture, all operators are possible (depending upon the nexus type), and all arguments are coded morpho-syntactically as syntactic arguments of a specific core. In a non-subordinate core juncture, this is true of all arguments except the one shared between or among cores. In a nuclear juncture, the linked unit is a single nucleus, and there is no formal indication of which predicate contributed which argument to the constructions; the arguments are pooled and treated as if they were all arguments of a single predicate in a simple core.

Semantically, the eleven possible juncture-nexus types are ranked in a continuum based on the degree of semantic cohesion between or among the units in the linkages (see Ohori 2001). In causative and aspectual constructions, each predicate expresses a complex state of affairs. Lower in the hierarchy, there are two distinct states of affairs. For instance, in psych-action clauses, there is the mental disposition of the actor and the projected action; with purposive clauses, there is the initial action and the intended result or goal of the action; with jussive constructions, there is the expression of the command or request and the commanded action. The same two states of affairs are observed within constructions involving perception, propositional attitude, cognition, and discourse

[7] There are two causative semantic relations. Causative [1] encodes a direct causative situation (e.g. lexical causatives), and Causative [2] encodes the notion of bringing about of one state of affairs through a distinct action or event (e.g. a matrix LS and an embedded LS).

predicates. In all these cases, the interpretation of the linked proposition depends upon the semantics of the matrix proposition. At the lower end are states of affairs related, primarily, thorough their temporal relations only.

The relationship between the syntactic and semantic relations in clause linkage is very complex, i.e. it is not one-to-one. A given juncture-nexus type is normally used to express more than one interclausal semantic relation. It is also the case that a given semantic relation can be conveyed by more than one juncture-nexus type. The primary principle governing the interaction of the two hierarchies is: the closer the semantic relationship between two propositions, the stronger the syntactic link joining them. In other words, the semantic relations at the top end of the hierarchy should be realized by the linkage categories at the top as well, and vice versa, the relations at the bottom of the hierarchy should be realized by the linkage categories at the bottom of the syntactic side. Moreover, while there is often more than one syntactic realization of a particular semantic relation, e.g. causality, the tightest syntactic linkage realizing it should be tighter than the tightest syntactic linkage realizing looser semantic relations.

For the analysis of Yaqui complex constructions, I will follow the Semantic Relations Hierarchy, except for the notion of causative and jussive semantic relations which are analyzed in the same section. The study of complex constructions requires the exploration of a number of semantic and morpho-syntactic factors. Among the morpho-syntactic aspects that will be explored here are: i) argument sharing and case marking coding (obligatory or optional co-reference), ii) reflexivization, iii) passivization, iv) operator dependency, v) temporal integration, vi) semantic implication, vii) position of

the non-matrix unit within the sentence, viii) clause linkage markers. The rest of this chapter deals with the semantic relation at the top end of the IRH, the notion of causation.

5.2 The notion of causation

The study of causative meaning has resulted in an extensive body of research addressing different issues related to form, grammaticality and semantic aspects (Song 1996). Related to the form, traditional grammar classifies causative constructions as i) lexical (synthetic), ii) morphological, and iii) syntactic (analytic or periphrastic), although more recent studies propose a continuum among the three types (Givón 1980, Dixon 2000, Shibatani 2002). Several studies focus on the case marking of the causer and the causee, and the situations involving asymmetric objects, especially when the caused event is transitive (see Kozinsky and Polinsky 1993). Two main semantic aspects have been studied: first, the fact that causation involves two states of affairs, the causing event and the caused event; and second, the distinction between direct and indirect causation. A situation involving an agentive causer and a patientive causee is direct, while one involving two agentive participants is indirect (Shibatani and Pardeshi 2002: 89). The volition, control, and animacy properties of the causee represent another interesting aspect in the study of causation.

One of the most referred to definitions of causative constructions is Shibatani's (1976), in which he defines causative constructions as those that express a *causative situation* as follows:

Two events qualify as a causative situation if the following two conditions hold:

a. The relation between the two events is such that the speaker believes that the occurrence of one event, the 'caused' event, has been realized at t_2, which is after the t_1, the time of the 'causing' event.

b. The relation between the causing and the caused event is such that the speaker believes that the occurrence of the caused event is wholly dependent on the

> occurrence of the causing event; the dependency of the two events here must be such that it allows the speaker to entertain a counterfactual inference that the caused event would not have taken place at the particular time if the causing event had not taken place, provided that all else had remained the same.

That is, a causative situation involves two events, the causing event which most commonly expresses the way the event is initiated, and the caused event which designates either the resultant state or the performed action. In the most typical situation, the actor (causer) is a volitional participant and the undergoer (causee) is a non-volitional patient/ theme, such that the actor imposes a change in the undergoer, by verbal or non-verbal means. In Foley & Van Valin (1984), the semantics of causation is represented as in (2).

(2) Actor acts on Undergoer (by verbal or non-verbal means) ⟶ Undergoer performs an action or is involved in some process or change of state.

Verbs denoting states of affairs in which the actor acts on the undergoer by non-verbal means are usually called **causative** verbs, e.g. *make, force, cause*. Verbs denoting states of affairs in which the actor uses verbal means are called **jussive** verbs, e.g. *tell, order, persuade*. Among other differences, causatives require a semantic entailment relation between the causing event and the caused event, while jussives do not require such entailment. This is why the sentence **Goyo killed the hen, but the hen did not die* is ungrammatical, because the caused event in the causative verb *kill* in English is said to be entailed, whereas *Goyo ordered Ivan to leave, but he didn't leave* is perfectly fine.

Yaqui presents a wide spectrum of causative constructions, from lexical and highly lexicalized verbs, to morphologically derived and syntactic constructions with causative meaning. Beside several labile roots that can be used within intransitive and transitive construction, e.g. *pitta* 'flatten', *joboa* 'fill', *ta'aru* 'lose', most verbs distinguish valence by morphological means, mainly, suppletion, valence-endings, and verbs taking *–a, –ria*,

–te, -tua causative suffixes. Non-active and active intransitive, transitive, and even ditransitive verbs may be morphologically causativized by adding the suffix *–tua*. Most instances of direct causation are morphological, except for result state causatives. Two-verb constructions must involve jussive verbs, in which an explicit command verb occurs as an independent predicate. Considering the iconic correlation between form and function, Yaqui causative constructions may be arranged as in (3).

(3) Yaqui causative constructions

Causatives	Lexical	Suppletion Internal phonological changes Valence-ending
	Morphological	Noun and predicate based + *–te, -tua, -ria* Verb + *-tua* Result state-based + *yaa* 'make' Verb + *-sae* 'order' Verb + *su'utoja* 'allow'
Jussives	Periphrastic	*sawe* + complement 'order to' *su'utoja* + complement 'allow to' *tejwa* + complement 'tell to' *lisensia* + complement 'authorize, permit to' *ujbwana* + complement 'ask (polite) to'

5.2.1 Non-verbal causative constructions

5.2.1.1 Lexicalized causatives. In the most typical representation of lexical causatives, the argument functioning as the subject is a volitional actor while the argument acting as the object is a non-volitional undergoer. As a result, the actor imposes a change of state in the undergoer, generally through direct contact. In Yaqui, lexical causatives are those verbs in which the causing event and the caused event are morphologically un-analyzable or hardly analyzable, e.g. *me'a* 'kill', *etapo* 'open'. This subsection describes both lexical causatives distinguishable from non-causatives via suppletion and valency-endings, as well as highly lexicalized (non-productive) causatives which are derived from nouns and state-like predicates. Yaqui shows a small set of suppletive forms, the 'ideal' lexical type

according to Comrie (1989: 170). A list of suppletive verbs distinguishing number in the non-causative and causative versions is presented in (4).

(4) Yaqui suppletive verbs

	Singular		**Plural**	
	Non-causative	**Causative**	**Non-causative**	**Causative**
Die, kill	muuke	me'a	koko	sua
Fall, drop	weecha	watta	watte	watta
Enter, bring into	kibake	kibacha	kiimu	kiima
Sit, put	yejte	yecha	jo'ote	joa
Stand, put	kikte	kecha	japte	ja'abwa
Lay down, put	bo'ote	teeka	to'ote	to'a

The most common non-causative/causative distinction is due to transitivity valence-endings. As we saw in the analysis of verb classification (cf. chapter 3, §3.2), Yaqui presents a large number of verbs that morphologically distinguish between an intransitive version ending in *-e, -te, -ke* and a transitive version ending in *-a, -ta, -cha*. For simplicity, I will refer to the first group as the *-e* ending, and the second group as the *–a* ending.[8] These are cases of non-directed (equipollent) alternation where neither the intransitive nor the transitive version is derived from the other. Both are derived by means of different suffixes from the same stem which expresses the basic situation (Haspelmath 1993). When the basic stem encodes a telic (non-activity) situation as in (5a), the *–e/-a* verb pair refers to the inchoative/causative phenomenon; when the basic stem refers to an atelic (activity) situation as in (5b), the endings do not necessarily code an non-causative/ causative relation but more precisely an active/active accomplishment alternation. [9]

[8] There are also some active intransitive/transitive verbs distinguished by the use of suprasegmentals and other phonological distinctions, i.e. *'ea* 'to think' / *'eiyaa* 'to esteem', *ju'unea* 'know about X' / *ju'uneiyaa* 'to know X', *taáwa* 'to remain' / *tawáa* 'to leave, abandon', *uba* 'to take a bath' / *ubba* 'to bathe X'.

[9] The inchoative *–(t)e* and the causative *–(t)a* Yaqui alternation is exactly the inverse pattern in Cora, another Southern Uto-Aztecan language. According to Vazquez (2002), the suffix *–ta* indicates the non-induced predicate (i), while the suffix *–te* indicates the causative version of the same basic situation (ii).

(5) Non-directed (equipolent) derivation

a.

Non-causative	Causative	
bee-te	bee-ta	‘burn’
bwas-e	bwas-a	‘ripen, cook’
waa-ke	waa-cha	‘dry’
pej-te	pej-ta	‘explode’

b.

Active intransitive	Active transitive	
om-te	om-ta	‘get angry, hate’
kit-te	kit-ta	‘knead, mix’
kuak-te	kuak-ta	‘turn over’
weey-e	weey-a	‘move, carry’

That is, although plain transitive verbs may formally overlap with lexical causatives, they do not necessary imply a causative meaning. This is a clear mismatch between the morphological marking and the semantic category of Yaqui verbs: activity verbs marked by *–e/–a* do not encode a non-causative/causative alternation but an intransitive/transitive correlation.

Highly lexicalized causatives are at an intermediate level, between lexical causatives and morphological ones. On one hand, these forms do not count as lexically pure since they involve a more or less productive process in which causatives are derived from non-causatives by adding a causative suffix, e.g., *-te ,-ria, -tua*. That is, for most cases, the causatives may be predicted on the basis of statives. On the other hand, although morphologically marked, they show irregular forms when compared to other derived causatives and they are not fully productive. Before introducing the causative derivation mechanisms, let me briefly describe derived inchoative predicates.

(i) i či:mu Ø-wa-té-pu?-ta-ka?a.
the pig s3SG-COMPL-PERF-fat-INCHO-PAST
‘As for the pig, it got fat.’

(ii) i Alberto či:mu pu wa-té-puh-te.
the Alberto pig s3SG COMPL-PERF-fat-CAUSE
‘As for Alberto, he fattened the pig.’ (Vazquez 2002: 220)

Derived inchoative verbs. Nouns and state-like stems coding non-inherent physical and attributive properties may be derived into inchoative predicates by adding either the suffix *–tu* or the suffix *–te*. The former commonly glossed as 'to be', 'to become', or 'to be turned into', appears very productively with both nouns and adjectives (D&C 1999: 139) and, generally speaking, indicates a non-induced, spontaneous change of state.

(6) Inchoatives marked by *–tu*

Base form		Inchoative		Causative	
ona	'salt'	on-tu	'get salty'	on-tua	'put salt'
sa'awa	'sore'	sa'awa-tu	'get a sore'	sa'awa-nia	'hurt a sore'
seboa	'thorn'	seboa-tu	'be prickly'	seboa-tua	'prick (tra)'
wak-i	'thin'	wakil-tu	'get thin'	wakil-te	'make thin'
yo'o-	'growth'	yo'o-tu	'grow'	yo'o-tu-ria	'raise, care of'
nason-	'damage'	nason-tu	'get damaged'	nason-te	'damage (tra)'

The other suffix is *–(t)e*, which has at least four different functions. As we saw before, it marks numerous intransitives showing a transitive counterpart ending in *–(t)a*. It also indicates the inchoative version of locative/positional predicates, as illustrated in the first and second column in (7).

(7) Change of position verbs taking *-te*

		State	**Inchoative**	**Lexical causative**	**Derived causative**
Stand	Sg	weye-k	kik-te	kecha	kik-te-tua
	Pl	ja'abwe-k	jap-te	ja'abwa	jap-te-tua
Sit	Sg	kate-k	yej-te	yecha	yej-te-tua
	Pl	joo-ka	jo'o-te	joa	jo'o-te-tua
Lie	Sg	bo'o-ka	bo'o-te	te'eka	bo'o-te-tua
	Pl	to'o-ka	to'o-te	to'a	to'o-te-tua

Whereas in (8a-b) the situation is merely stative, when adding *–te* to the state predicate in (8c) the situation refers to an inchoative change of state, where the unique participant is self-inducing a change of position. State predicates marked by the perfective *–k ~ ka* may take either an inanimate and animate participant as a unique argument, but inchoative

change of position predicates take only animate, volitional participants. This is demonstrated by the ill-formedness of the clause in (8d).

(8) a. U ili uusi-Ø b'o-ka.
the little child-NOM lay down-PRFV
'The child is laying down.'

b. U soto'i-Ø ama bo'o-ka.
the pan-NOM there lie-PRFV
'The pan is lying over there.'

c. U ili uusi-Ø bo'o-te-k.
the little child-NOM lie-INCHO-PRFV
'The child laid down.'

d. * U soto'i-Ø bo'o-te-k.
'The pan was lying down.'

This suffix also seems to indicate some sort of middle or self-induced verbs in which the participant plays both semantic roles, acting as an actor but also as an affected entity:

(9) Self-induced predicates marked by *–(t)e*

beabocha-te	'put shoes on
tajjo'o-te	'get dressed'
koba-te	'get dressed from waist up'
chichik-e	'brush'
bua-te	'tie a cloth on the head'
so'i-te	'swing'

Notice that *–tu* and *–te* suffixes do not change the transitivity of the verb; while they do not add a new argument, they do change the logical structure of the verb. When added to positional state forms, for instance, the event is not a temporally unbounded static situation but a telic event expressing a spontaneous change.

The causative suffix *-te*. An additional function of *–te* is to derive a causative verb mainly from nouns, by introducing an agent having direct contact with the undergoer. When this suffix is added to a noun, the causer brings into existence the referent of the causativized noun; nothing can occur between the noun and the causative suffix *–te*. See

the examples below. Notice that in (10a), there is an adjective *bweere* 'big (pl)' modifying the incorporated noun *taj-* 'tortilla', which is part of the nucleus.

(10) a. Nim maala-Ø bweere taj-te-k.
1SG:GEN mother-NOM big:PL tortilla-CAUSE-PRFV
'My mother made big tortillas.'

b. Empo ta'abwikun jo'a-te-k.
2SG:NOM other place house-CAUSE-PRFV
'You made your home in another place (lit. you moved).'

c. Goyo-Ø juya-po kaba'i-ta wok-te-k.
Goyo-NOM wild-LOC horse-ACC foot-CAUSE-PRFV
'Goyo tracked the horse in the wild.'

d. Ivan-Ø supe-m-po koba-te-Ø.
Ivan-NOM dress-PL-LOC head-CAUSE-PRES
'Ivan is putting on a shirt.'

When attached to a state-like stem, the actor imposes a change of state on the undergoer, e.g. *bwalko* 'soft' > *bwalko-te* 'to soften', *bwe'u* 'big' > *bwe'u-te* 'to make big', *wiki-la* 'thin' > *wikil-te* 'to make thin', *tu'u* 'good' > *tu'u-te* 'to fix, make good'.

(11) a. Itom beea bwalko.
1PL:GEN skin soft
'Our skin is soft.'

b. Bwia-ta te bwalko-te seewa-m-betchi'ibo.
ground-ACC 1PL:NOM soft-CAUSE flower-PL-for
'We soften the ground for the flowers.'

The applicative suffix *-ria*. Although much less frequent than *–te* and *-tua*, the applicative suffix *–ria* may derive the causative sense of bringing about some change in the undergoer. The use of *–ria* as a causative suffix seems to be more productive with terms denoting adjectival properties rather than with nouns. Some examples are below.[10]

[10] This suffix appears in a few nouns, some of which have a related verbal version, e.g., *patta* 'close' > *patta-ria* 'cork, cap', *yoore* 'scar' > *yoore'e-ria* 'form a scar', but others do not, e.g., *peche'eria* 'groove', *baikuria* 'swirl'.

(12) Lexical causatives taking *-ria*

Base form	Inchoative	Causative	
bwichopia		bwichop-ria	'to blacken'
bali		bali-ria	'to cool'
yosi		yosi-ria /yosi-tua	'to heat'
suka	suka-e	suwa-ria	'to heat, warm'
awi	aw-e	awi-ria	'to fatten'

The examples in (13) show the use of *–ria* to derive a causative meaning from stative expressions by adding an actor-type argument. The most common and productive use of *–ria* is, however, when adding a non-actor direct core argument, i.e. applicative constructions in § 4.3.2.1.

(13) a. Marta-Ø soto'i-ta bwichop-ria-k.
Marta-NOM pot-ACC coal-APPL-PRFV
'Martha blackened the pot.'

b. Ne abena-ta suka-ria-k.
1SG:NOM oat-ACC hot-APPL-PRFV
'I warmed the oats.'

c. In achai-Ø kowi-m awi-ria-Ø.
1SG:GEN father-NOM pig-PL fat-APPL-PRES
'My father fattens the pigs.'

The causative suffix *-tua*. The most productive and versatile suffix is *–tua*, which can combine with any kind of predicate, including nouns, stative, intransitive, transitive and even ditransitive verbs. In this subsection, only noun and state-like based causatives are discussed. Similar to the English derived verbs *blacken, whiten,* and *widen*, the suffix *–tua* can derive a causative meaning from nouns (14a) and from state-like stems (14b).

(14) Lexical causatives taking *-tua*

Base form		Causative	
a. maatu	'charcoal'	maatu-tua	'to blacken'
maniam	'breaks'	mania-tua	'to hold, stop'
tapojtim	'metal, iron'	tapojti-tua	'to shoe (horse)'.
chichi	'saliva'	chichi-tua	'salivate/savor'
jiu	'sound'	jiu-tua	'turn on (make sound)'

b. alle'a 'be happy' alle'a-tua 'comfort'
beje'e 'cost (have value)' beje'e-tua 'pay (make value)'
elpea 'be good, healthy ' elpe-tua 'relieve'

This causative suffix is well attested in other Southern Uto-Aztecan languages such as *–t ⟩a* in Huichol and *–tia* in Nahuatl, directly related to the causative suffix *-tu-(y)a proposed for PUA (Langacker 1977: 146).[11] Some examples of *–tua* are shown below.

(15) a. Nim mala yo'owe-Ø bwam-ta o'-on-tua-Ø.
1SG:GEN mother old-NOM food-ACC REDP-salt-CAUSE-PRES
'My grandmother is salting the food.'

b. Jaibu kuus-tua-s-wa-k u teopo bemela-Ø.
Already cross-CAUSE-COMPL-PASS-PRFV the church new-NOM
'The new church has already added a cross.'

c. Peo-Ø kari-ta bepaa-tua-bae-Ø.
Pedro-NOM house-ACC roof-CAUSE-DESID-PRES
'Pedro wants to roof the house.'

There are a few non-causative/causative verb pairs involving *–te* and *–tua*. In (16a), the form taking *–te* expresses an inchoative reading where *Maria* is acting on herself, while in (16b), the form taking *–tua* expresses that the agent is acting on other participant.

(16) a. Maria-Ø chumti tajo'o-te-Ø.
Maria-NOM quickly cloth-INCH-PRES
'Maria becomes clothed quickly.'

b. Peo-Ø usi-ta toroko tajo'o-e tajo'o-tua-k.
Pedro-NOM child-ACC blue cloth-INST cloth-CAUSE-PRFV
'Pedro dressed the child with blue clothes.'

Therefore, similar to pure lexical causatives, noun and state-like based causatives reflect a direct (physical or manipulative) causative situation where the changes on the

[11] Langacker (1977:145) suggests that the first syllable of this proto-form is probably related to a verbalizing suffix meaning 'be' or 'become', while the second syllable probably relates at some remote stage to the *-na / *-ca causative, and possibly also to the active [transitive] *-a. If this is so, it may be the case that in Yaqui the occurrence of the ending *–a* in lexicalized causative verbs corresponds to this historical causative suffix, whereas the most general suffix *–tua* involves the combination of the inchoative *–tu* plus *–a*.

undergoer are brought about by the external force directly acting on it. For all these instances, the undergoer is an affected non-agentive argument. These lexical and highly lexicalized causative forms show the highest degree of fusion between the causing and the caused events since they have become grammaticalized as a simple predicate. The lexical representation of the state-derived accomplishment and causative accomplishment for the verb meaning 'heat' is provided in (17) below. According to the canonical linking pattern in Yaqui, the syntactic expression in (17c) would realize (17c′). The effector *nepo* '1sg' is the first argument of the **do′** predicate and thus is the highest-ranked argument in terms of the AUH; hence it is the actor. The theme *ba'am* 'water' is unique argument of the predicate BECOME **hot′** and thus is the lower (second highest) ranked argument; as a result, it is the undergoer.

(17) a. Ba'am suka. State
water:PL hot
'The water is hot.'

a′. **hot′** (ba'am$_U$)

b. Ba'am suka-e-Ø. Accomplishment
water:PL hot-INCH-PRES
'The water is getting hot.'

b′. BECOME **hot′** (ba'am$_U$)

c. Nepo ba'am suka-ria-Ø. Causative accomplishment
1SG:NOM water:PL hot-APPL-PRES
'I am heating the water.'

c′. [**do′** (1sg$_A$, Ø)] CAUSE [BECOME **hot′** (ba'am$_U$)]

5.2.1.2 Productive causatives. Yaqui also has two productive mechanisms to derive causative constructions. The first one involves the suffix *–tua* and the second one consists of a type of periphrastic result-state causative.

5.2.1.2.1 Morphological causatives. Morphological causative constructions consist of a highly productive process in which the causative version is derived from a non-causative by adding the suffix *–tua.* In contrast to *–te* and *–ria* discussed above, *-tua* does not have requirements about any specific state of affairs serving as the caused event. This role may be filled nouns and state-like predicates, the most lexicalized forms discussed above, as well as activity, non-activity, and causative predicates. The examples in (18a-b) show active clauses, while the clause in (18c) exemplifies a non-active causative clause.

(18) a. Ivan-Ø Flor-ta si osi tubukti-tua-k.
Ivan-NOM Flor-ACC a lot jump-CAUSE-PRFV
'Ivan made / let Flor jump a lot.'

a′. [**do′** (Ivan, Ø)] CAUSE [**do′** (Flor, [**jump′** (Flor)])]

b. Joan-Ø kaba'i-ta bwiti-tua-k.
Joan-NOM horse-ACC run-CAUSE-PRFV
'Juan made / let the horse run.'

b′. [**do′** (Joan, Ø)] CAUSE [**do′** (kaba'i, [**run′** (kaba'i)])]

c. U seeberia-Ø Juanito-ta kokoi wet-tua-k.
the cold-NOM Joan-ACC sick-(si) fell-CAUSE-PRFV
'The cold weather made Juanito fall sick.'

c′. [**do′** (seeberia, Ø)] CAUSE [BECOME **sick′** (Juanito)]

The typical situation is where the actor forces the undergoer to be involved in a process or change. When the causee is inanimate, the actor does not find any kind of resistance in bringing about the change in the undergoer; this is the simple case of direct causation expressed by the most lexicalized forms discussed before. But when the causee is animate, it may be difficult to decide if the situation involves a direct manipulation or a permissive causality, i.e. the actor can act directly on the undergoer or can let it realize

the event by itself. The simpler example of these two possibilities is observed when combined with motion and change of position verbs. When the causee is a human being, there are two options: the more lexicalized form (19a) means that the actor physically acts and affects the undergoer, while the derived verb (19b) is open to two interpretations, (i) the actor physically acts on the undergoer or (ii) the actor permits the undergoer to perform the change on its own. It suggests that the animacy property of the causee allows a causative situation derived by *–tua* to be interpreted as direct or permissive causality, something that is impossible for lexical and highly lexicalized causatives, which always express a direct manipulative causation.

(19) a. Maria-Ø ili usi-ta tebat-po te'eka-k.
Maria-NOM little child-ACC bed-LOC put-PRFV
'Maria put the child on the bed.'

b. Maria-Ø ili usi-ta tebat-po bo'o-te-tua-k.
Maria-NOM little child-ACC bed-LOC lie down-INCHO-CAUSE-PRFV
'Maria put / let the child lie down on the bed.'

c. Maria-Ø u-ka soto'i-ta mesa-po te'eka-k.
Maria-NOM the-ACC pot-ACC table-LOC put-PRFV
'Maria put the pot on the table.'

d. *Maria-Ø u-ka soto'i-ta mesa-po bo'o-te-tua-k.
'Maria put / let the pot lie down on the table.'

Although causative predicates are not common bases for derived causatives across languages (Dixon 2000), in Yaqui they are as seen in (20), where *–tua* can be even attached to ditransitive verbs. The ambiguity between direct manipulation and permissive causality is also present here.[12]

[12] Apparently, the *–tua* structure is also used to express the notion of 'forcing' and 'convincing' distinguished by the occurrence of specific adverbs; where to express the sense of 'to force someone', the adverbial *utte'apo* 'forced, obligated' is used (i); to express 'convince', the adverbial *jiba* 'always' is used (ii).

(20) a. Luis-Ø Ivan-ta teta-ta tubukta-tua-k.
Luis-NOM Ivan-ACC stone-ACC jump-CAUSE-PRFV
'Luis made/let Ivan jump (over) the stone.'

a′. [**do′** (Luis, Ø)] CAUSE [**do′** (Ivan, [**jump′** (Ivan, teta)])]

b. Aurelia-Ø enchi toto'i-m sua-tua-k.
Aurelia-NOM 2sg:ACC hen-PL kill-CAUSE-PRFV
'Aurelia made/let you kill the hens.'

b′. [**do′** (Aurelia, Ø)] CAUSE [[**do′** (2sg, Ø)] CAUSE [BECOME **dead′** (toto'i)]]

c. Goyo-Ø Peo-ta-u toto'i-ta Lupe-ta jinu-tua-k.
Goyo-NOM Pedro-ACC-DIR hen-ACC Lupe-ACC buy-CAUSE-PRFV
'Goyo made/let Lupe buy a hen from Pedro.'

c′. [**do′** (Goyo, ∅)] CAUSE [[**do′** (Lupe, Ø)] CAUSE [BECOME NOT **have′** (Peo, toto'i)]] & [BECOME **have′** (Lupe, toto'i)]]

d. U maejto-Ø usi-ta mansana-ta yoem-ta miik-tua-k.
the teacher-NOM child-ACC apple-ACC man-ACC give-CAUSE-PRFV
'The teacher made/let the child give the man the apple.'

d′. [**do′**(maejto,∅)] CAUSE [[**do′**(usi,Ø)] CAUSE [BECOME **have′** (yoem, mansana)]]

From a syntactic point of view, the analysis of these constructions is interesting because causativization increases the valence of the basic verb to a three- or a four-place predicate. In contrast to Korean or Romance languages where the case marking of the causee depends on the syntactic properties of the caused event, i.e. it is expressed by an accusative or dative NP depending on the syntactic valence of the basic verb, transitive- and ditransitive-based causatives in Yaqui result in multiple accusative arguments: the accusative causee, the accusative theme and, for some verbs, the accusative recipient.

(i) Peo-Ø utte'apo Goyo-ta ye'e-tua-k.
Pedro-NOM force Goyo-ACC dance-CAUSE-PRFV
'Pedro obligated Goyo to dance.'

(ii) Peo-Ø jiba Goyo-ta ye'e-tebo-k.
Pedro-NOM always Goyo-ACC dance-CAUSE-PRFV
'Pedro convinced Goyo to dance (= finally made him dance).'

5.2.1.2.2 Result-state causatives. The concept of 'making' or 'doing' in Yaqui is expressed by the main verbs *joa ~ yaa*, as illustrated in (21). These verbs express that the accusative theme comes into existence because of the action of the causer.

(21) a. Bempo banko-ta joa-Ø.
3PL:NOM bench-ACC make-PRES
'They are making the bench.'

b. Bempo banko-m yaa-k.
3PL:NOM bench-PL make-PRFV
'They made the chairs.'

Verbs denoting states and qualities of inanimate and animate entities such as taste, color, shape, size, may be derived into non-causatives when adding the main verb *au ~ aane ~ ayuu* 'have, become'[13] and into causatives when adding *yaa ~ joa* 'to make'. The state, inchoative accomplishment and causative accomplishment versions of the verb meaning 'to bleach' are exemplified below.

(22) a. Tajo'ori-m tosai-Ø.
cloth-PL white-PRES
'The clothes are white.'

a´. **white´** (tojo'orim)]

b. Tajo'ori-m tosai-si aayu-k loro-e.
cloth-PL white-si become-PRFV blancher-INST
'The clothes become white / whiten with the bleach.'

b´. BECOME **white´** (tajo'orim)]

c. Aurelia-Ø am tosai-si yaa-k.
Aurelia -NOM 3PL:ACC white-si make-PRFV
'Aurelia caused them to become white / whitened them'

c´. [**do´** (Aurelia, Ø)] CAUSE [BECOME **white´** (tajo'orim)]

[13] For D&C (p 63-64), the predicates *aa-ne* 'fut', *aayu-k/aau-kan* 'past' are some sort of 'be' verbs expressing existential, locative, and stative meanings, but they can be also show to have a processual usage as 'do'.

Notice that while the stative predicate (22a) is unmarked, the accomplishment (22b) carries the predicate *aayu* 'to become' preceded by the result state predicate, and the causative accomplishment (22c) shows the result state plus the main verb *yaa ~ joa* 'to make'. These constructions refer exactly to the same causation situation as the lexical (direct) causatives, but here the causing event and caused event are expressed by two separate units. Although the result state and the main verb tend to appear together, they allow the occurrence of the accusative theme between them, as illustrated in (23c).

(23) a. U-me tajkai-m namaka-Ø.
the-PL tortilla-PL hard-PRES
'The tortilla is hard (dried).'

b. U-me tajkai-m namaka-si aayu-k.
the-PL tortilla-PL hard-si become-PRFV
'The tortillas become hard (dried).'

c. U ta'a-Ø namaka-si am yaa-k
the sun-NOM hard-si 3PL:ACC make-PRFV
'The sun caused them to become hard (dried).'

According to D&C (p.152), the particle *si(a)* can appear by itself as an intensifier marker (24a); it may be added to adjectives to derive manner adverbs (24b); and it may be added to numerals indicating the number of times an action was repeated (24c).

(24) a. Si ne omti-pea-Ø.
si 1SG:NOM get mad-INTENT-PRES
'I really feel I am getting very mad.'

b. U kubai-Ø tui-si ji-jia-k.
the flute-NOM good-si RED-sound-PRFV
'The flute sounded very good'

c. Goyo-Ø danza-ta manmi-si yi'i-la.
Goyo-NOM dance-ACC five-si dance-COMPL
'Goyo has danced this dance five times.'

Beside its adverbial use, when *–si(a)* is attached to a stem, designating states and qualities such as shape, size, and colors, it functions as a result state predicate. That is, a PRED-*si* followed by the main verbs 'become' and 'make' derive an inchoative and a causative predicate, respectively, highlighting the effected event: the process in which the undergoer changes. More examples of result state causation are shown below.

(25) a. U aguacate-Ø chukui-si aayu-k.
the avocado-NOM black-si become-PRFV
'The avocado became black / blackened.'

b. U ta'a-Ø aguacate-ta chukui-si yaa-k.
the sun-NOM avocado-ACC black-si make-PRFV
'The sun blackened the avocado.'

c. Maria-Ø unna tapsiolai-si tajkai-m yaa-k.
Maria-NOM very thin-si tortilla-PL make-PRFV
'Maria thinned / made thinner the tortillas.'

d. Che'a ne bwe'u-si kora-ta yaa-k.
more 1SG:NOM big-si comal-ACC make-PRFV
'I enlarged the pan.'

A result state PRED-*si* is different from attributive adjectival phrases. When a noun takes an adjective, the adjective tends to appear unmarked or agrees in number or case with the head noun, as illustrated in the two examples in (26), but within a result state clause, this agreement pattern is neutralized; only the intensifier *–si* suffix is attached.

(26) a. In maala-Ø bwe'ere tajkai-m nee ya'a-tua-k.
1SG:GEN mother-NOM big:PL tortilla-PL 1SG:ACC make-CAUSE-PRFV
'My mother made me make big tortillas.'

b. A'apo u-ka bwe'u-k kari-ta yaa-k.
3SG:NOM the-ACC big-ACC house-ACC make-PRFV
'He made a big house.'

There are two highly lexicalized forms using PRED-*si*, they are *ko'oko-si aayu ~ yaa* '(get) hurt, sick' in (27), and *jaiti- aayu ~yaa* '(get) dirty, upset' in (28). Apparently, the particle *–si* is optional for 'getting hurt' and absolutely cannot occur for 'getting dirty'.

(27) a. Aapo ko'koe-Ø batwe-po uba-ka naatekai.
3SG:NOM sick-PRES river-LOC bathe-PRFV beginning
'He is sick since he took a bath in the river.'

b. Techom-po ne ko'oko-si aayu-k.
Elbow-LOC 1SG:NOM sick-si become-PRFV
'I hurt my elbow (lit. I become sick on my elbow) '

c. Ne enchi ko'oko(si) yaa-k
1SG:NOM 2SG:ACC sick-(si) make-PRFV
'I hurt you (lit. I made you to be sick).'

(28) a. Nim achai-Ø jaite-k.
1SG:GEN father-NOM angry-PRFV
'My father was annoyed, uncomfortable.'

b. U ili uusi-Ø jaiti aa-ne.
the little child-NOM angry become-EXPE
'The child will get into mischief (lit. will become uncomfortable, unpleased).'

c. U jaawa-Ø lente-m jaiti nee ya'a-ria-k.
the vapor-NOM lent-PL angry 1SG:ACC make-APPL-PRFV
'The vapor soiled my glasses (lit. made the glasses be dirty in my prejudice).'

The examples given in (29) show that, potentially, any result state marked by *-si* may be combined with other accomplishment predicates (i.e., this construction is not restricted to the verb *ya'a*), to focus on the change of state of the undergoer. What this last group of causatives show is that, whereas most causative verbs in Yaqui are expressed by a single core containing two nuclei unable to be analyzed, others may be expressed by a more complex morpho-syntactic representation keeping the same direct causative meaning.

(29) a. Goyo-Ø kari-ta chukui-si yoka-k.
Goyo-NOM house-ACC black-si paint-PRFV
'Goyo painted the house black.'

b. U jupa-Ø kari-ta juba-si ta'awa-k.
the zorilla-NOM house-ACC stink-si leave-PRFV
'The zorilla left the house stinking.'

c. Kapo-Ø ba'am mamtela-po winjuba-si seewa-Ø.
Capomo-NOM water store-LOC smell good-si bloom-PRES
'The Capomo flower blooms smelling nice where there is stock water.'

In sum, for most verbs, this language overtly distinguishes between a state indicated by *–i*, *-ia*, or *–ti*, a non-induced, spontaneous change of state marked by *–tu* or *–(t)e*, and an induced change of state indicated by *–ria, –te, -a*, or *-tua*. This three-verb classification is also manifested through periphrastic clauses taking a result state marked by *–si* preceding the verb meaning 'become' or 'make', for the inchoative and causative version, respectively. Active transitive verbs ending in *–a*, however, do not involve a causative meaning, but the *–(t)e* and *–(t)a* marking has been neutralized to distinguish between one-place activity verbs vs. two-place activity verbs, and/or active vs. active accomplishment verbs. Even in a language like Yaqui that makes a clear distinction between two types of causatives (transitive verbs with a causative meaning and derived causative forms), the productive suffix *-tua* is used to fill gaps in the lexical domain. As in many other languages, when the causee plays a patient role, then the causative situation is strongly lexicalized; when it may play an agent-role, then the causative situation tends to be morphologically derived. Accordingly, causative events based on nouns and predicates containing a state component are more likely to be lexicalized as a single predicate, whereas causatives derived from activity verbs strongly resist lexicalization in Yaqui, but they are systematically derived.

5.2.2 Verbal causative constructions

The previous section has shown that morphological causatives taking *–tua* may express either direct manipulative or permissive causality, depending on the lexical properties of

the basic verb and the animacy properties of the causee. In both interpretations, however, the causee is always under the causer's direct control. Yaqui presents other morpho-syntactic and periphrastic structures to express that the actor uses verbal means to cause the causee to perform an action or be involved in a process. Jussive verbs listed in (30) explicitly express the ways in which the action of the causer is carried out in order to produce the effected event: through using speech act verbs.

(30) Jussive verbs in Yaqui

a.	*sawe*	'order to'
b.	*su'utoja*	'allow to'
c.	*tejwa*	'tell to'
d.	*lisensia*	'authorize, permit to'
e.	*ujbwana*	'ask (polite request)'

There is another jussive verb, the suffix *–tebo* which encompasses both causative and imperative uses, where the most general pattern is for it to mean 'give orders to do X'. The main characteristic of *–tebo* is that the causee may not be expressed. Comparing the clauses (31a-b), it is clear that the causee need not to be overtly expressed, something that is completely impossible in a direct causation and even most instances of indirect causation. In (31a), for instance, *-tebo* is ambiguous as to whether the causer *Peo* directly addresses the causee or he gives orders to an intermediate participant to induce the caused action. In (31b), there is no causee. Thus, semantically *–tebo* refers to a verbal causative situation, but syntactically it appears in a tighter morpho-syntactic construction; *-tebo* does not exist as an independent verb.[14] Although the exact interpretation of *–tebo* is far from clear, it implies some sort of 'polite request' where the causer expresses that something needs to be done, but leaves open the option of who may be causee. This 'impersonal command' situation seems to be similar to the one expressed by the English

[14] It may be the case, however, that *–tebo* is a grammaticalized form derived from the causative/inchoative suffix *–te* plus the purposive plural suffix *–bo*, i.e., 'someone go to do something'.

clause *I gave permission for the child to leave* which implies directives given to someone other than the target person.

(31) a. Peo-Ø Goyo-ta ye'e-tebo-Ø.
Pedro-NOM Goyo-ACC dance-ORDER-PRES
'Pedro gives orders (for) Goyo to dance.'

b. Peo-Ø pueta-ta ya'a-tebo-k.
Pedro-NOM door-ACC make-ORDER-PRFV
'Pedro gave orders to make a door.'

Indirect causation expressed by jussive verbs implies that the causee acts independently and/or with resistance with respect to the actor's control. As a result, the event induced by a jussive verb is restricted to activity and causative LS predicates. Besides this semantic restriction, jussive constructions are fully productive in the language and, more interestingly, vary in the degree of synthesis or integration of the two events. The more difficulty it is to bring about the caused event, the more explicitly the causative meaning must be indicated, e.g. syntactic constructions.

5.2.2.1 Morphological and syntactic jussives. Yaqui presents a clear example where the boundaries between morphological and periphrastic constructions are often fuzzy. The jussive verbs *sawe* 'order, command to' and *su'utoja* 'allow' highlight the higher independency of the two events involved in the causative situation: one in which the causer induces an action and the other in which the action is performed by the causee. One of the most crucial properties of these predicates is that they allow equally common, formal representations: the morphological structure in (32b) and the syntactic-like complement in (32c) which takes the caused event as a complement clause (indicated by '[ ]' to facilitate reading). The undergoer of the main verb must be coreferent with the

PSA of the linked verb, i.e. the causee. The clause in (32a) illustrates the main use of the verb *ne-sawe* 'give orders to someone'.

(32) a. Nim jo'a-po nim abachi–Ø ne-sawe-Ø.
1SG:GEN house-LOC 1SG:GEN old brother-NOM someone-order-PRES
'In my home, my older brother gives the orders (to someone).

b. Empo Goyo-ta Aurelia-ta kape-ta u'ura-sae-k.
2SG:NOM Goyo-ACC Aurelia-ACC coffee-ACC take.away-ORDER-PRFV
'You ordered Goyo to deprive Aurelia (of) the coffee.'

c. Empo Goyo-ta$_i$ sawe-k [Aurelia-ta kape-ta a$_i$
2SG:NOM Goyo-ACC order-PRFV Aurelia-ACC coffee-ACC 3SG:ACC
u'ura-'u]
take.away-CLM
'You ordered Goyo to deprive Aurelia (of) the coffee.'

d. [**do´** (2sg, [**order´** (2sg, Goyo)])] CAUSE [**do´** (Goyo, Ø) CAUSE [BECOME NOT **have´** (Aurelia, kape)]]

In (32b), the jussive verb is attached to the caused event *u'ura*; when added to another verb, the reduced form *–sae* appears. The clause in (32c) exemplifies a syntactic-like complement where the matrix (causing) unit takes an embedded (caused) unit. Notice that the causee appears once in the morphological version but twice in the syntactic construction; in the latter, the full NP tends to occur as a direct core argument of the matrix predicate whereas the linked unit takes a coreferential accusative pronoun. Accordingly, the first construction type is an example of undergoer control, i.e., the undergoer of the matrix core is the controller of the missing syntactic argument (the pivot) in the linked core. The other construction type is an example of argument coreference (but not control), since the undergoer of the matrix core is co-indexed with the highest ranked argument of the embedded LS. It is well known in the Uto-Aztecan literature that the subject of non-main clauses may be marked by accusative or genitive

case (Langacker 1977).[15] The same pattern is observed for *su'utoja* (lit. release-leave). As a main verb in (33a), *su'utoja* highlights the interruption or lack of actor control over the undergoer. When functioning as a jussive predicate in (33b-c), rather than just initiating the event, the actor simply constructs no barriers to the causee's action (Talmy 1990).

(33) a. Maria-Ø eskuela-ta su'utoja-k.
Maria-NOM school-ACC abandon-PAST
'Maria abandoned the school.'

b. U tata paare-Ø ili uusi-ta teopo-ta tu'u-te-su'utoja-k.
the priest-NOM little child-ACC church-ACC good-CAUSE-ALLOW-PAST
'The priest allowed the child to clean the church.'

c. U tata paare-Ø ili uusi-ta$_i$ su'utoja-k [a$_i$ teopo-ta
the priest-NOM little child-ACC allow-PAST 3SG:ACC church-ACC

tu'u-te-ne-'u]
good-CAUSE-EXPE-CLM
'The priest allowed the child to clean the church.'

d. [**do´** (tata paare, [**allow´** (tata paare, uusi)])] CAUSE [[**do´** (uusi, Ø)] CAUSE
[BECOME **clean´** (teopo)]]

The first characteristic in defining this syntactic construction is that the causing and the caused event are two independent predicates, where the complement unit serves as a semantic argument of the matrix core. The linked complement hardly occupies the typical 'object' position in the main clause (i.e., embedded). The most common (unmarked) situation is when the linked unit appears extraposed to the right, rather than to the left, an unexpected characteristic considering Yaqui is a verb-final language (Dryer 1992). In this case, the linked unit appears in the post-core slot, outside the core but inside the clause. Furthermore, the linked unit has undergone several morpho-syntactic adjustments. For

[15] Recall that the accusative and genitive pronominal marking is overtly distinguished for 1st and 2nd person singular, and 3rd person plural; the other persons share pronominal forms (cf. Table 2.1, §2.1).

instance, the caused event is formally marked by one of the Clause Linkage Markers (CLM), the suffix *–'u* 'that', the most frequent, or the locative postposition *–po* 'about', clearly related to the directional and locative postpositions, respectively. The linked verb is extremely restricted with respect to tense-aspect-modal operators and, most importantly, the actor of this core acquires accusative case marking. When the non-matrix PSA is nominal, it is systematically marked by the accusative suffix *–ta*. When pronominal, it tends to be marked by accusative pronouns.

(34) a. Empo u-ka jamut-ta$_i$ sawe-k [tajo'ori-m a$_i$ baksia-ne-'u]
2SG:NOM the-ACC woman-ACC order-PAST cloth-PL 3SG:ACC wash-EXPE-CLM
'You ordered the woman to wash the clothes.'

b. Em achai enchi$_i$ su'utoja-k [enchi$_i$ uusi-ta bekta-po]?
2SG:GEN father 2SG:ACC allow-PRFV 2SG:ACC child-ACC cut hair-CLM
'Did your father allow you to cut the child's hair off?

Furthermore, there exist fully syntactic causative constructions which highlight both the force-dynamics of the two events and the causee's volition separate from the actor. These syntactic structures are expressed by the jussive verbs *tejwa* 'tell to do' in (35a), *ujbwana* 'ask (polite request)' in (35b), and *lisensia* 'authorize to do' (Spanish loan from *licenciado*) in (35c).

(35) a. Inepo Sara-ta$_i$ tejwa-Ø [Kajeme-u a$_i$ bwit-ne-'u][16]
1SG:NOM Sara-ACC tell-PRES Cajeme-DIR 3SG:ACC run-EXPE-CLM
'I am telling Sara to go to Cajeme.'

a´. **do´** (1sg, [**say´** (1sg, Sara)] CAUSE [**do´** (Sara, [**go´** (Kajeme, Sara)])]

b. Bempo e-u$_i$ ujbwana-Ø [enchi$_i$ sim-ne-'u]
3PL:NOM 2SG-DIR ask-PRES 2SG:ACC go-EXPE-CLM
'They ask you to leave.'

[16] The complement of *tejwa* 'tell' can also be introduced by the general purposive postposition *–betchi'ibo* 'for'. Below, the purposive clause lacks the co-referential pronoun of the actor of 'leave'.
Inepo Sara-ta tejwa-Ø [Kajeme-u bwite-betchibo]
1SG:NOM Sara-ACC tell-PRES Cajeme-DIR run(SG)-FOR
'I am going to tell Sara to leave for Cajeme.'

b′. **do′** (1pl, [**ask′** (1pl, 2sg)]) CAUSE [**do′** (2sg, [**go′** (2sg)])]

c. [Nim joa-po Joan-ta$_i$ taawa-‘u] ne kaa
1SG:GEN house-LOC Joan-ACC stay-CLM 1SG:NOM NEG

a$_i$ lisensia-k.
3SG:ACC authorize-PRFV
‘I did not authorize Joan to stay in my home.’

c′. **do′** (1sg, [**authorize′** (1pl, Joan)]) CAUSE [BECOME **be-at′** (nim joa-, Joan)]

Although the linked unit may appear clause-initially in (35c), extra-position to the left is extremely rare and it conveys pragmatic values, e.g., topicalization. Notice also that whereas the main cores *tejwa* and *lisensia* take an accusative NP (causee) as a direct core argument, the verb *ujbwana* ‘ask’ takes a postpositional argument marked by the directional *–u*, like most Yaqui speech act verbs. Within the linked unit, however, the causee is systematically coded by an accusative coreferential pronoun. As the examples presented above, the linked unit shows some degree of ‘nominalization’: (i) it takes either *–‘u* or *–po* CLM, (ii) the embedded PSA is marked as accusative, and (iii) the verb must be unmarked for TAM operators (36a) or be restricted to an unrealized, expected event taking *–ne* (36b-c).

(36) a. Lili, e-u ne ujbwana-Ø [koyota-m enchi ne-u nu’upa-‘u
Lili, 2SG-DIR 1SG:NOM ask-PRES coyota-PL 2SG:ACC 1SG-DIR bring-CLM

nim waala-betchi’ibo].
1SG:GEN mother-for
‘Lili, I am asking you to bring me some coyotas for my mother.’

b. Empo itom tejwa-kan [Joan-ta-u itom kaba’i-ta nenki-ne-po]
2SG:NOM 1PL:ACC tell-PASTC Joan-ACC-DIR 1PL:ACC horse-ACC sell-EXPE-CLM
‘You were telling us to sell the horse to Joan.’

c. Tuuka, u maejto-Ø ili uusi-m$_i$ lisensia-k [libro-m
Yesterday the teacher-NOM little child-PL authorize-PRFV book-PL

am$_i$ bit-ne-po ketun eksamen-Ø nim ya'a-ri]
3PL:ACC see-EXPE-CLM before exam-NOM there make-PASS:PAST
'Yesterday, the teacher authorized the children to see the books before the exam is done.'

There is one more extremely common structure expressing the notion of verbal causation: a syntactic construction in which a jussive predicate takes a linked unit marked by the jussive verb *–sae* 'order' or the propositional attitude verb *–'ii'aa* 'want', followed by the complementizer *–kai*. This construction was also noticed by Lindenfeld and D&C. Lindenfeld claims that Yaqui commands "can appear as either taking a sentential complement clearly marked as dependent clause when taking *–sae-kai* or *-'ii'aa-kai* when the matrix jussive verb is present, or as a seemingly independent clause marked (only) by *–sae* or *–'ii'aa* when the matrix verb is not expressed [derived clauses]" (Lindenfeld 1973: 114). Indeed, she argues that only the first alternative consists of a complex construction because there is an overt matrix predicate. The example in (37a) is from Lindenfeld and the ones in (37b-c) from D&C. Besides the co-occurrence of the matrix predicate and the jussive, and propositional attitude 'epistemic' markers, nothing else is said about this construction type.

(37) a. U-ka ili uusi-ta$_i$ ne tejwa-k [aman a$_i$ wee-sae-kai]
the-ACC little child-ACC 1SG:ACC tell-PRFV there 3SG:ACC walk-ORDER-CLM
'I told the little child to walk there.' (Lindenfeld 1973)

b. Nee enchi$_i$ tejwa-kan [kaa enchi$_i$ siim-sae-kai]
1SG:NOM 2SG:ACC tell-PASTC NEG 2SG:ACC go-ORDER-CLM
'I told you not to go.'

c. [Ili jaiki ta'a-po ama = a$_i$ ta'awa-sae-ka] a-u$_i$ 'ujbwana-k.
few amount day-LOC there = 3SG:ACC stay- ORDER-CLM 3SG-DIR ask-PRFV
'They begged him to stay there for a few days.'

5.3. The nexus-juncture relations for causative constructions

In this final section, I will first summarize the formal and functional properties of the causative and jussive constructions described thus far, and explore how these constructions behave with respect to some semantic and morpho-syntactic properties. Based on these results, I will later establish the nexus-juncture relationships among these constructions.

5.3.1 Morpho-syntactic tests. We have seen that Yaqui codes non-verbal causative situations through (i) lexical and highly lexicalized forms, (ii) some sort of periphrastic result-state, and (iii) productive morphological causatives taking *–tua*, whereas a jussive situation is expressed by (iv) morphological constructions taking *-sae* and *–su'utoja* verbal suffixes, (v) syntactic constructions involving the main verbs *sawe* 'order', *su'utoja* 'allow', *tejwa* 'tell', *ujbwana* 'ask', and *lisensia* 'authorize' taking either a complement marked by *–'u, -po*, or the sequences *–sae-kai* and *–'ii'aa-kai*.

Causative and jussives involve two events, a causing event and a caused event. The lexical representation is relatively the same for lexical, morphological and syntactic-like complements where the first component may be an activity and the second component may be any predicate.[17] Which predicate occupies the second component is what distinguishes the most lexicalized forms from the most syntactic ones. Among the causatives, the most grammaticalized forms are derived from nouns or state-like predicates. Jussives restrict this position to active or other causative predicates. Morphological causatives taking *–tua* are the most flexible since the second component can be either a noun, a state-like predicate, an activity or non-activity verb, or even a causative predicate. These two semantic relations behave slightly differently with respect

[17] Indirect and direct causality will be represented by 'CAUSE' in the lexical representation system, whereas permissive causality will be represented by 'LET' in the LS (VV&LP 1997).

to certain semantic and morpho-syntactic properties including (i) argument sharing vs. coreferential arguments, (ii) reflexivization, (iii) passive voice, (iv) operator dependency, (v) the use of temporal adverbs, and (vi) semantic implication of the caused event.

Argument sharing vs. coreferential arguments. The matrix predicate and the linked verb in a construction coding causation share a semantic argument: the causee. For instance, in an English jussive clause such as *Mary ordered Lupe to wash the dishes*, there is a syntactic argument missing from the linked unit which must be interpreted as being the same as one of the syntactic arguments of the matrix core. Here, the controller of the missing argument is the undergoer of the main core, *Lupe*. Because of this, causative and jussive constructions in English have been analyzed as involving undergoer-control. In Yaqui, the same undergoer-control pattern is observed in the morphological structure. In (38a), *Tibu* plays two semantic roles: it is the actor of the caused event *reuwa* 'to lend' and it is the undergoer of the causative predicate *–tua*, but it is expressed only once in the construction, meaning that there is a missing syntactic argument. What it is not possible for a morphological construction is to show coreferential arguments, as shown in (38a´). In contrast, syntactic constructions where the jussive verb takes a linked unit marked by *–'u* or *–po* do not show a control relation since there is not a missing syntactic argument in the complement.[18] Instead, this construction type has two coreferential arguments. As illustrated in (38b), the lexical NP used to appear as a direct core argument of the matrix predicate, while the embedded clause shows a coreferential pronoun. What it is not possible for this complement type is to have a missing argument; this explains the ungrammaticality of the last two examples.

[18] The only apparent exception is when the linked unit is marked by *–betchi'ibo*; see example in fn. 10.

(38) a. Peo-Ø Tibu-ta yoi-ta kaba'i-ta reuwa-tua-k.
Pedro-NOM Tibu-ACC foreigner-ACC horse-ACC lend-CAUSE-PRFV
'Pedro made Tibu lend the horse [to] the foreigner.'

a′.*Peo-Ø Tibu-ta$_i$ yoi-ta kaba'i-ta a$_i$ reuwa-tua-k.

b. Empo Goyo-ta$_i$ sawe-k [Aurelia-ta kape-ta a$_i$ u'ura-'u]
2SG:NOM Goyo-ACC order-PRFV Aurelia-ACC coffee-ACC 3SG:ACC take-CLM
'You ordered Goyo that he deprive Aurelia (of) the coffee.'

b′ .*Empo Goyo-ta$_i$ sawe-k [Aurelia-ta kape-ta Ø u'ura-'u]
b′′.*Empo Ø sawe-k [Aurelia-ta kape-ta a$_i$ u'ura-'u]

The constructions where the complement unit is marked by the sequence *–saekai* or *–'ii'aakai*, also take coreferential arguments. In (39a), the causee appears twice: the lexical NP *Jorge* occurs as a core argument of the matrix predicate while the linked unit contains a pronominal NP *a* co-indexed to it. Interestingly, this construction type also requires argument sharing. Although there are two causative predicates, *lisensia* 'authorize' and the verbal suffix *–sae*, the causer is expressed only once, as a core argument of the matrix predicate. Any other combination turns out ungrammatical.

(39) a. Goyo-Ø Jorge-ta$_i$ lisensia-k [a$_i$ siim-sae-kai]
Goyo-NOM Jorge-ACC authorize-PRFV 3SG:ACC go-ORDER-CLM
'Goyo authorized Jorge to leave.'

a′.* Goyo-Ø Ø lisensia-k [Jorge-ta siim-sae-kai]
a′′.*Goyo-Ø Jorge-ta$_i$ lisensia-k [Goyo/aapo/a a$_i$ siim-sae-kai]

Reflexivization. The crucial thing about reflexivization in many languages is that the antecedent and the reflexive pronoun are co-semantic arguments of the same predicate in the LS (cf. Bach and Partee 1980). This seems to be the case for Yaqui since the actor of the non-matrix (caused) core is the semantic controller of a reflexive pronoun within that core when transitive. Consider the following examples in which the reflexive may be

expressed by one particular reflexive pronoun, by the general form *omo ~ emo* 'self', or by a nominate pronoun followed by the reflexive.

(40) a. Joan-Ø aapo emo me'a-k.
Joan-NOM 3SG 3SG:REFL kill-PRFV
'Juan killed himself.'

b. Peo-Ø Joan-ta emo me'e-tua-k.
Pedro-NOM Joan-ACC 3SG:SELF kill-CAUSE-PRFV
'Pedro made Joan$_i$ kill himself$_i$'

c. Bempo enchi omo bekta-tua-k.
3PL:NOM 2SG:NOM SELF shave-CAUSE-PRFV
'They made you shave yourself / *themselves.

The same pattern is also true for jussive predicates expressed by a morphological construction as in (41a-b) and by a syntactic-like complement as in (41c). Due to the obligatory co-indexed causee in the linked core, the controller and the reflexive are syntactically and semantically co-arguments in the same core. The reflexive does not have access to the causer because they are not semantic co-arguments and are not in the same core.

(41) a. Em achai-Ø enchi omo bekta-su'utoja-k.
2SG:GEN father-NOM 2SG:ACC REFL shave-ALLOW-PRFV
'Your father allowed you to shave yourself / *himself.'

b. Im maala-Ø kaa nee ino bepa-sae-k.
1POSS mother-NOM NEG 1SG:ACC 1SG:REFL hit-ORDER-PRFV
'My mother ordered me not to hit myself / *herself.'

c. Min-Ø enchi su'u-toja-k [enchi omo bekta-ne-po]
Fermin-NOM 2SG:ACC allow-PRFV 2SG:ACC REFL shave-EXPE-CLM
'Fermín allowed you to shave yourself / *himself.'

Passivization. Regardless of whether or not the causative situation is verbal, and of whether it is expressed by a morphological, periphrastic or syntactic construction, the causee is the only direct core argument that can function as the passive PSA. This is

particularly true for highly lexicalized (42a), morphologically derived (42b), and result state causative constructions (42c).

(42) a. Nepo ba'am suka-ria-Ø. (=(17c))
1SG:NOM water:PL hot-APPL-PRES
'I am heating the water.'

a′. Ba'am suka-ria-wa-Ø.
water:PL hot-APPL-PASS-PRES
'The water is heated.'

b. Ivan-Ø Flor-ta si osi tubukti-tua-k. (=(18a))
Ivan-NOM Flor-ACC a lot jump-CAUSE-PRFV
'Ivan made / let Flor jump a lot.'

b′. Flor-ta si osi tubukti-tua-wa-k.
Flor-ACC a lot jump-CAUSE-PASS-PRFV
'Flor was made to jump a lot.'

c. U ta'a-Ø aguacate-ta chukui-si yaa-k. (=(24b))
the sun-NOM avocado-ACC black-si make-PRFV
'The sun blackened the avocado.'

c′. Aguacate-Ø chukui-si yaa-wa-k.
avocado-NOM black-si make-PASS-PRFV
'The avocado was blackened.'

Less commonly, *-wa* can also be added directly to the caused event resulting in some sort of 'impersonal' causative situation. The two possible passive versions for the morphological clause in (38a) are illustrated below. In (43b), *-wa* is added to the causative verbal form expressing that 'Tibu was made to lend the horse to the *yori* (foreigner)'. In (43b), *-wa* appears between the causing and the caused event *reuwa* 'lend' expressing that *Tibu* is the causer and is forcing someone else to perform the action expressed by the caused event.

(43) a. Tibu-Ø yoi-ta kaba'i-ta reuwa-tua-wa-k. (=(38a))
Tibu-NOM foreigner-ACC horse-ACC lend-CAUSE-PASS-PRFV
'Tibu was made to lend the horse [to] the foreigner.'

b. Tibu-Ø yoi-ta kaba'i-ta reu-wa-tua-k.
Tibu-NOM foreigner-ACC horse-ACC lend-PASS-CAUSE-PRFV
'Tibu made (someone) lend the horse [to] the foreigner.'

It is also the causee that acts as the passive PSA for morphological jussive constructions. The examples below are the passive version of the active clauses in (32b), repeated below. Any other argument acting as the passive-PSA will be ungrammatical.

(44) a. Empo Goyo-ta Aurelia-ta kape-ta u'ura-sae-k.
2SG:NOM Goyo-ACC Aurelia-ACC coffee-ACC take.away-ORDER-PRFV
'You ordered Goyo to deprive Aurelia (of) the coffee.'

a′. Goyo-Ø Aurelia-ta kafe-ta u'ura-sae-wa-k.
Goyo-NOM Aurelia-ACC coffee-ACC take.away-ORDER-PASS-PRFV
'Goyo was ordered to deprive Aurelia [of] the coffee.'

Given that the causee is overtly expressed as a direct core argument of the jussive predicate within a complement marked by *–'u* or *-po*, this is the argument that functions as the passive-PSA. Compare the active clause in (38b) and its passive version in (45a) below. However, when the complement is marked by the sequence *–saekai* as seen in (39), the matrix predicate cannot be passivized. The ungrammatical clauses in (45b-c) show this restriction.

(45) a. Goyo-Ø$_i$ sawe-wa-k [Aurelia-ta kape-ta a$_i$ u'ura-'u]
Goyo-NOM order-PASS-PRFV Aurelia-ACC coffee-ACC 3SG:ACC take-CLM
'Goyo was ordered to deprive Aurelia (of) the coffee.'

b. * Jorge-Ø$_i$ lisensia-wa-k [a$_i$ siim-sae-kai]
'Jorge was authorized to leave.'

c. * Jorge-ta$_i$ lisensia-wa-k [a$_i$ siim-sae-kai]
'(Someone) authorized Jorge to leave.'

Operator dependency. As we said before, Yaqui shows little indication of pure tense suffixes, except for the past continuative. Also, the same lexical forms can function as either deontic/epistemic modal markers as well as main and matrix predicates, meaning

that there are no pure modal operators either. Instead, the usual situation is to display a range of meanings that include tempo-aspectual suffixes such as the perfective *–ka* and the expected/potential *–ne*. Obligatory operator sharing is a relevant test to establish the nexus type between two events, especially for non-subordinate ones. When two verbs expressing non-verbal causation are attached together, the operators must be added at the end of the complex nuclei. Among the relevant operators at the nuclear level, it is the completive (aspectual) suffix *–la*, focusing on the temporal duration and completion of the process or state. This suffix must be shared by the two units in highly lexicalized (46a), morphological structures derived by *–tua* (46b), and result-state clauses (46c). Any other operator arrangement turns out ungrammatical as shown by the (a′, b′, c′) examples.

(46) a. Nim maala-Ø bwere taj-te-la.
1SG:GEN mother-NOM big tortilla-CAUSE-CMPL
'My mother has made big tortillas.'

a′. *Nim maala-Ø bwere taj-la-te.
'*My mother made the tortilla to have become bigger.'

b. U yoeme-Ø tu'u-si kari-ta joa-la.
the man-NOM good-si house-ACC make-CMPL
'The man has nicely done the house.'

b′. *U yoeme tu'u-si-la kari-ta yaa-k.
'*The man built the house having been pretty.'

c. Tibu-Ø Beti-ta kom wet-tua-la.
Tibu-NOM Bety-ACC down fall-CAUSE-CMPL
'Tibu has made Maria fall (she is still on the floor).'

c′. *Tibu-Ø Beti-ta kom wet-la-tua.
*'Tibu makes Bety to have fallen down.'

Since this aspectual operator must be shared by the causing and caused events within these causative types, this suggests a case of co-subordination at the nuclear level.

Morphological jussive constructions seem to be relatively more flexible with respect to aspectual operators.

(47) a. Peo-Ø Goyo-ta mamni-sia ye'e-sae-la.
Pedro-NOM Goyo-ACC five-times dance-ORDER-COMPL
'Pedro has ordered Goyo to dance five times.'

b. Peo-Ø Goyo-ta mamni-sia ye'e-la-sae.
Pedro-NOM Goyo-ACC five-times dance-COMPL-ORDER
'Pedro orders Goyo to dance five times.'

Furthermore, the causing and the caused events in jussives may be independently modified by the expected suffix *-ne*, but must share the perfective *-k*. In the examples in (48), we can see that the core operator *–ne* coding an unrealized but expected event can modify either the causing (a) or the caused (b) predicate. A predicate combination as in (c) is rejected because it contradicts one of the two conditions of a causative situation: the caused event must be realized after the time of the causing event. The clause in (d-e) demonstrates that, although structurally similar, the two events in a *–tua* construction cannot take independent core operators as the unexpected *–ne* suffix. Also, the perfective suffix must mark the causative verb and never the caused verb, as shown in (f).

(48) a. Peo-Ø Goyo-ta toto'i-m sua-sae-ne.
Pedro-NOM Goyo-ACC hen-PL kill-ORDER-EXPE
'Pedro will order Goyo to kill the hens.'

b. Peo-Ø Goyo-ta toto'i-m sua-ne-sae-k
Pedro-NOM Goyo-ACC hen-PL kill-EXPE-ORDER-PRFV
'Pedro ordered Goyo to kill the hens (tomorrow).'

c. * Peo-Ø Goyo-ta toto'i-m sua-ka-sae-ne.
'*Peter will order Goyo he killed the hens'

d. Peo-Ø Goyo-ta toto'i-m sua-tua-ne.
Pedro-NOM Goyo-ACC hen-PL kill-ORDER-EXPE
'Pedro will make Goyo to kill the hens.'

e. * Peo-Ø Goyo-ta toto'i-m sua-ne-tua.
'*Pedro makes Goyo he would kill the hens'

f. * Peo-Ø Goyo-ta toto'i-m sua-k(a)-tua-k.
'*Pedro made Goyo have killed the hens'

The matrix core within syntactic-like complements marked by *–'u* or *–po* also restricts the operators in the linked unit: the non-matrix (caused) core must be unmarked or marked by *–ne* as in (49a). The reason for this restriction is, of course, that the ordering necessarily follows the act coded in the complement. Any other clausal operator, especially the perfective one, is completely avoided (b). If the linked complement of *tejwa* is finite and is marked by the CLM *–'u* as (c), the clause does not have a jussive sense, but rather an indirect discourse interpretation. Here, the accusative pronoun within the linked unit need not be coreferential with the addressee of the main core, something impossible when the verb functions as a jussive predicate.

(49) a. Bempo a_i tejwa-k [kaa a_i kaba'i-ta jinu-(ne)-'u]
3PL:NOM 3SG:ACC tell-PRFV NEG 3SG:ACC horse-ACC buy-(EXPE)-CLM
'They told him/her not to buy the horse.'

b. *Bempo a tejwa-k [kaa a kaba'i-ta jinu-ka-'u]
'*They told him/her did not buy the horse.'

c. Bempo a tejwa-k [kaa a kaba'i-ta jinu-ka-'u]
3PL:NOM 3SG:ACC tell-PRFV NEG 3SG:ACC horse-ACC buy-PRFV-CLM
'They told him/her$_i$ that he/she$_j$ didn't leave. '

In contrast, when the syntactic-like complement is marked by *–sae-kai*, both the basic verb and the causative verbal suffix must be a bare form. The examples in (50b-d) turn out ungrammatical since one or two of the verbs in the complement are marked by *–ne*.

(50) a. Aurelia-Ø Goyo-ta_i sawe-k [a_i siim-'ii'aa-kai]
Aurelia-NOM Goyo-ACC order-PRFV 3SG:ACC go-WANT-CLM
'Aurelia le ordenó a Goyo [queriendo] que se fuera.'

b.* Aurelia-Ø Goyo-ta$_i$ sawe-k [a$_i$ siim-'ii'aa-ne-kai]
c.* Aurelia-Ø Goyo-ta$_i$ sawe-k [a$_i$ siim-ne-'ii'aa-kai]
d.* Aurelia-Ø Goyo-ta$_i$ sawe-k [a$_i$ siim-ne-'ii'aa-ne-kai]

Co-temporality. Causatives involve a stronger temporal and spatial contiguity between the causing and caused events than jussives; i.e., they are experientially and conceptually tightly connected, meaning that the two must be co-temporal. This closer spatial contiguity is particularly true for direct causation where the actor physically imposes a change in the undergoer, but not for jussives where the actor acts on the undergoer by verbal means. Consider the examples in (51). The clause in (a) is unacceptable because the causing event already took place, i.e., it is marked by *-k*. However, the caused event is being modified by the adverbial *chukula* which specifies that the action will be realized sometime later. The clause in (b) is also ungrammatical since the temporal adverb *ian lautia* 'early today' cannot modify the caused event within a *–tua* construction fully marked by the past tense.

(51) a. * Jabe tajo'o-ta chukula tosai-si yaa-k.
Who cloth-ACC in a while white-si make-PRFV
'Who caused the clothes to become white later on?'

b.* Tuuka Aurelia-Ø enchi uba-tua-k ian lau-lauti.
yesterday Aurelia-NOM 2SG:ACC bath-CAUSE-PRFV today RED-early
'Yesterday Aurelia made you take a bath early today'

Jussives do not need to be co-temporal, since temporal adverbials can independently modify either the caused event in (52a-b) or the causing event in (52c). However, if the complement is marked by *–saekai* or *–'ii'aakai*, the linked unit cannot be independently modified by temporal adverbs. This explains the ungrammaticality of (52d).

(52) a. Tuuka Aurelia-Ø enchi uba-sae-k ian lau-lauti.
yesterday Aurelia-NOM 2SG:ACC bath-ORDER-PRFV today RED-early
'Yesterday Aurelia ordered you to take a bath early today.'

b. U tata paare-Ø temajti-ta sawe-k [kampani-m a ian
the priest-NOM sacristan-ACC order-PA STP bell-PL 3SG:ACC today

lautia po-pon-sae-ne-'u]
early RED-sound-ORDER-EXPE-CLM
'The priest ordered the sacristan to sound the bells early today.'

c. U tata paare-Ø chu'ukula temajti-ta kampani-m po-pon-sae-ne.
the priest-NOM later sacristan-ACC bell-PL RED-sound-ORDER-EXPE
'Later on, the priest will order the sacristan to sound the bells'

d. *U tata paare-Ø temajti-ta$_i$ sawe-k [kampani-m a$_i$ ian
the priest-NOM sacristan-ACC order-PRFV bell-PL 3SG:ACC today

lautia po-pon-'ii'aa-kai]
early RED-play-WANT-CLM
'The priest ordered the sacristan to play the bells early today.'

Semantic implication. Causatives demand a semantic entailment relation between the causing and the caused event. They are implicative in the sense that the truth of the caused event holds whenever the causing event is true. This is clear in (53a-b) where denying the result state expressed by the caused event results in ungrammaticality. Because jussives do not imply the completion of the caused event, the caused event can be negated, as demonstrated in (54a-b).

(53) a. * Lupe-Ø toto'i-ta me'a-k bweta u toto'i-Ø kaa muukia.
Lupe-NOM hen-ACC kill-PRFV but the hen-NOM NEG death
'Lupe killed the hen but the hen is not dead.'

b.* U ta'a-Ø aguacate-ta chukui-si yaa-k
the sun-NOM avocado-ACC black-si make-PRFV

bweta aguacate-Ø ketun siari.
but avocado-NOM yet green
'The sun blackened the avocado but the avocado is still green.'

c.* Ne uusi-ta kot-tua-k bweta ka a kocho-k
1SG:NOM child-ACC sleep-CAUSE-PRFV but NEG 3SG:ACC sleep-PRFV
'I forced the child to sleep but he didn't sleep.'

(54) a. Aapo enchi$_i$ uba-sae-k empo$_i$ into
3SG:NOM 2SG:ACC bath-ORDER-PRFV 3SG:NOM and

kaa a yaa-bae-Ø
NEG 3SG:ACC make-DESID-PRES
'She ordered you to take a bath, but you do not want to do it.'

b. Beti-Ø Toño-ta tekil-ta su'u-toi-sae-k
Bety-NOM Toño-ACC work-ACC abandon-ORDER-PRFV

aapo into e'e tia-k.
3SG:NOM and NEG say-PRFV
'Bety ordered (that) Toño abandon his work but he said no.'

5.3.2 The nexus-juncture relations. The isomorphism between the syntax and semantics of complementation involves two parallel dimensions, event integration and clause integration, and predicts that the stronger the semantic bond between the two events, the more extensive will be the syntactic integration of the two clauses into a single thought complex clause. The fact that the causing and caused events are highly integrated is compatible with this semantic-syntactic iconicity principle. RRG predicts that, given the inventory of syntactic clause-linkage categories in a language, it is always the case that the strongest semantic relation is expressed in the most tightly linked syntactic configuration found in that language, whereas the weaker relation is expressed in the less tightly linked construction. More recently, the RRG theory has pointed out that the Semantic Relations Hierarchy is the result of combining a number of more basic semantic notions including, but not limited to, temporal, spatial, causal, and mental disposition hierarchies (Van Valin, 2005). The essential idea is that the semantic cohesion between units expressed on the semantic side in the IRH in Figure 5.1 follows from the interaction of a number of factors, each of which is expressed in the following hierarchies.

(55) a. Temporal hierarchy:
phase of a single event > simultaneous events > sequential events > unspecified

b. Causal hierarchy:
physical > verbal > underspecified [non-defeasible] > inferred [defeasible]

c. Participant's mental disposition:
intention > perception > belief > knowledge

d. Necessarily shared participant [NSP]: Yes > No

Although causation is at the top end of the IRH, we have seen that not all causative situations are the same. The interaction of these hierarchies distinguishes between non-verbal and verbal causatives. Non-verbal causation means that the causing and caused events show the closest temporal relationship because the two events are treated as phases of a single event (temporal hierarchy). The participants involved in this causative situation are in some kind of physical contact with one another (causal hierarchy), meaning that the actor directly and physically imposes the change on the undergoer. Verbal causation is not as close as non-verbal causation in terms of temporal and spatial contiguity. First of all, the two events are treated as different tightly sequential events, i.e., the causer first gives an order, and then the causee either performs or does not perform the order. Because the actor acts on the causee by means of speech, the causal relation is not physical but verbal. Hence, verbal causation expressed through jussive predicates is lower in the semantic relations hierarchy.

We have seen that non-verbal causation in Yaqui is expressed by the tightest morpho-syntactic construction: lexical and highly lexicalized verbs, and derived verbs taking *–tua*. Result-state causative structures, on the other hand, involve two independent units, the causing event expressed by *joa* ~ *yaa* 'make' and the result (caused) event expressed by a state-like predicate marked by *–si*. Although the two events occur as independent verbs, they also build a tightly syntactic construction since only the undergoer can appear

between the two nuclei. Besides this structural difference, the two grammatical construction types necessarily involve direct, physical contact between the actor and the undergoer so that the undergoer is always under the actor's control. Moreover, lexicalized and result-state causatives behave exactly the same for the purpose of major grammatical functions. The units involved in highly lexicalized, result-state and intransitive-based morphological constructions taking *–tua* consist on two nuclei, taking a single set of core arguments. Transitive and di-transitive-based morphological constructions taking *–tua* involve two core units, i.e. each core takes their on set of core arguments but they share one, the causee. The two nuclei must share the operators at the nuclear level, whereas the two cores must share all the operators at the core level (i.e., they can be independently modified by the completive suffix *–la*). Moreover, the two units cannot be independently modified by temporal adverbs, meaning that they are considered phases of a single event, and they are semantically implicative in the sense that if the causing event is true, then the caused event is also true. When the matrix predicate is passivized, the accusative causee acts as the passive-PSA. According to these properties, subordination is ruled out since the content of the caused event does not function as a syntactic argument of the matrix predicate. The operator dependency among the two units indicates co-subordination, rather than coordination (where each nuclei or core may take independent operators at the relevant level). All these properties yield to the strongest syntactic relation: nuclear co-subordination, when the basic predicate is intransitive, and core co-subordination, when the basic verb is transitive. The fact that the strongest semantic relation has been grammaticalized from a tightly bound syntactic construction (i.e., nuclear co-subordination), to an even more tightly bound and grammaticalized structure

expressing most instances of direct causation, represents a natural extension of the form-meaning iconic relation. The simplified representation in Figure 5.3 corresponds to the direct causative construction *Carlos made Ivan jump the stone* in (56). Notice that the two core units, the causing and the caused events, are linked to a core node; notice also that the causee *Ivanta* is directly linked to the matrix core.

(56) Kajlos-Ø Ivan-ta teta-ta tubukta-tua-k.
Carlos-NOM Ivan-ACC stone-ACC jump-CAUSE-PRFV
'Carlos made Ivan to jump the stone.'

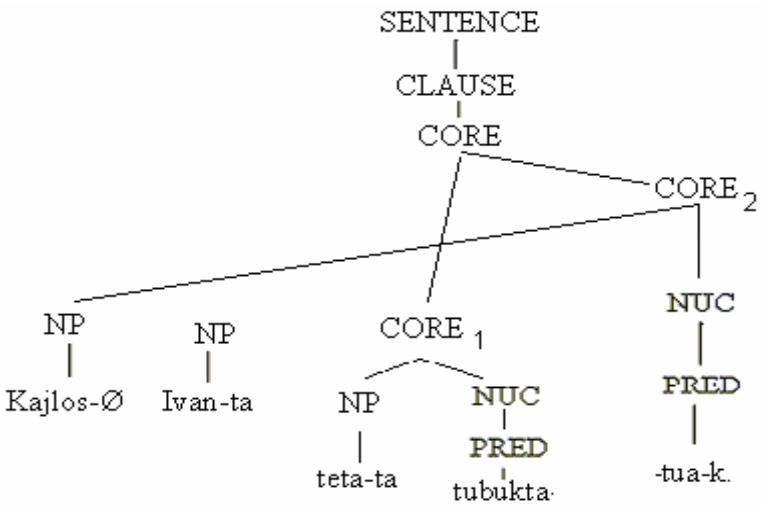

Figure 5.3: Direct causation expressed by core co-subordination.

Verbal causation, on the other hand, is manifested in different structural ways. Although structurally similar to the *–tua* constructions, morphological jussives show a somewhat lower degree of grammatical integration. First of all, the content of the 'command' does not function as a syntactic argument of the matrix predicate; this rules out subordination. Instead, the two cores obligatorily share a semantic argument, the undergoer, which serves as the PSA when the construction is passivized. Moreover, the causing and the caused events in a morphological structure involving *–sae* 'order to' and *–su'utoja* 'allow to' do permit the linked verb to be marked by the expected suffix *-ne*,

but not by the perfective. In addition, the linked unit can be independently modified by temporal adverbs. Operator independency rules out co-subordination, meaning that morphological jussive construction are coded by a core coordinate linkage type. This operator independency is expected since, in contrast to direct causation, the causing and caused events in a verbal causative situation are temporally sequential events. Accordingly, the core units involved in morphological jussive constructions establish a core coordinated combination. The simplified representation in Figure 5.4 corresponds to the morphological jussive construction in (57a). Notice that both cores are linked directly to the clausal node; although each of them takes their own set of core arguments, they share one argument, the causee.

(57) a. Empo Goyo-ta Aurelia-ta kape-ta u'ura-sae-k.
2SG:NOM Goyo-ACC Aurelia-ACC coffee-ACC take.away-ORDER-PRFV
'You ordered Goyo to deprive Aurelia (of) the coffee.'

b. Empo Goyo-ta$_i$ sawe-k [Aurelia-ta kape-ta a$_i$
2SG:NOM Goyo-ACC order-PRFV Aurelia-ACC coffee-ACC 3SG:ACC

u'ura-'u]
take.away-CLM
'You ordered Goyo to deprive Aurelia (of) the coffee.'

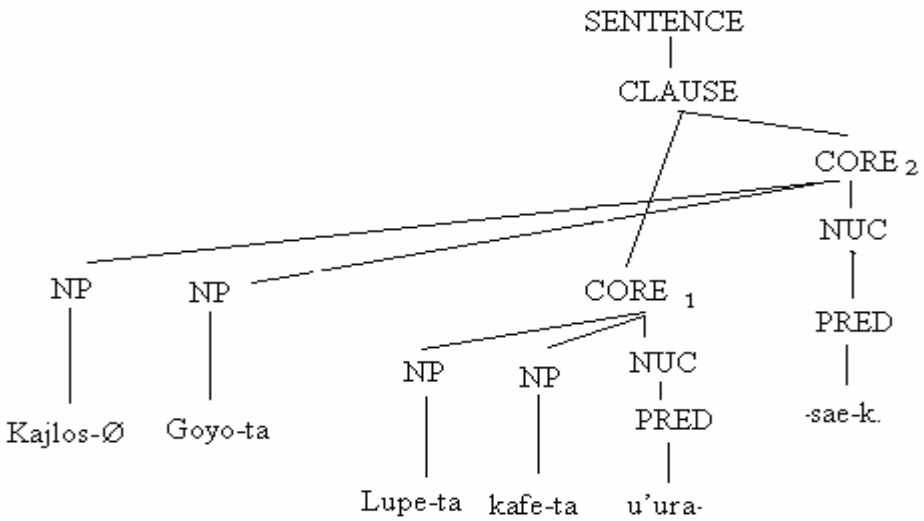

Figure 5.4: Jussive constructions expressed by core coordination

The nexus relationship is different when jussive predicates take a syntactic-like complement. On one hand, the linked unit has been nominalized to some extent as it is formally marked by *–'u* and *–po* CLM and its PSA must be marked by accusative case. The linked verb can be unmarked or marked only by the suffix *–ne*, but not by tense markers as the past continuative *–(ka)n*, meaning that the units involved in jussive constructions are two cores rather than two clauses. Because of these properties, the linked unit cannot occur by itself as an independent clause. Furthermore, the occurrence of the syntactic-like complement is obligatory, otherwise the clause is ungrammatical. That is, the syntactic-like complement in a jussive construction serves as a core argument of the matrix core, thus the two units establish a structural dependency. Most commonly, the complement appears in the post-core slot –there is no a pause between the matrix predicate and the linked complement, nor a resumptive pronoun within the matrix core-, meaning that the complement is linked directly to the clause node, rather than the core. Accordingly, a jussive predicates and its syntactic-like complement yields a clausal subordinate combination. The representation of the syntactic jussive construction in (57b) is illustrated in Figure 5.5.

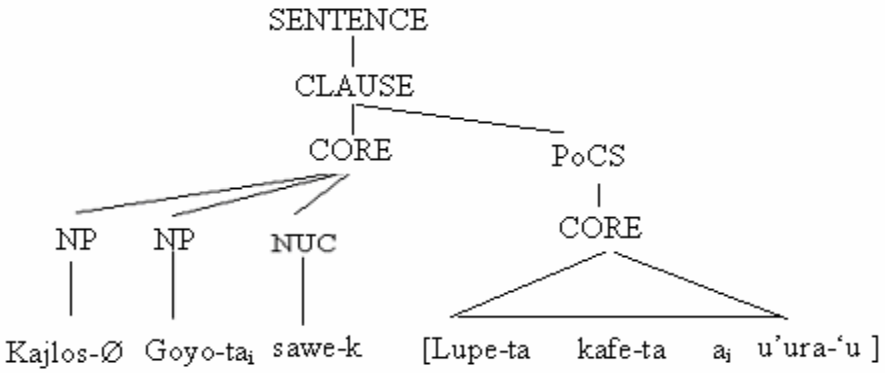

Figure 5.5: Jussive constructions expressed by clausal subordination

The participant's mental disposition hierarchy in (55c) attempts to capture how involved a particular participant is in the event in question. And this semantic hierarchy is crucial to determine the differences among the three morpho-syntactic constructions expressing verbal causation focusing on the agentive control: the degree of control, intention, choice or independence ceded by the actor (causer) of the main core and the actor (causee) of the non-main core. In particular, in a causative situation this hierarchy will refer to both the causer's intention for the caused event to be realized and whether the causee is acting on his own accord or not. Within a morphological structure taking a jussive morpheme as in (57a), the causee can hardly resist the actor's command; in other words, although the undergoer may refuse to perform the event in question, it would be better if he does it. In a syntactic structure as in (57b), the causee is acting according to his own intentions, as he can not obey the actor's order. Although more data are necessary, I will assume that both of these structures involve verbal causality, the former reflecting a more coercive situation compared to the fully syntactic constructions involving a main core, where the causee is less compelled to perform the induced action. That is, Yaqui allows the speaker to choose between these causative constructions to express different degrees of the actor's and causee's control.

Finally, the analysis showed that the 'truly' causative complex construction in terms of Lindenfeld, where the linked complement is marked by *–sae-kai* or *–'ii'aa-kai*, behave differently. The first question that arises here is why the complement unit is marked by *–kai* rather than the regular *–'u* or *–po* CLMs. In her study, Lindenfeld claims that the inclusion of *–kai* is obligatory in "all the cases of command dependent clauses which function as the direct object of an expressed verb of command" (p. 104). To this respect,

D&C argue that *–kai* "reinforce[s] the notion of anteriority to the present speech situation of the situation designated by the subordinate clause of complex sentences" (p. 315). However, besides this temporal-aspectual function, they never mention the following defining properties: (i) *–kai* must take a TAM unmarked verb (i.e., a bare form); (ii) the two events establish a relation of simultaneity since the linked unit cannot be independently modified by temporal adverbs; (iii) a *–kai* clause must lack a syntactic argument: the actor of the *–sae* and *–'ii'aa* verbal suffixes, and (iv) the controller of this missing syntactic argument must be the PSA of the matrix core; (v) in contrast to other constructions involving subordination, the matrix predicate cannot be passivized. That is, it seems that *-kai* is restricted to a situation where the PSA of the matrix core is also the PSA of the non-matrix core, and were the two units do not involve a subordinated relationship. A sentence taking two PSAs as in (58b-c) is ungrammatical regardless of whether the two PSAs are coreferential (b) or not (c). The ungrammaticality of (d) occurs since the general CLM *–'u* cannot replace *–kai*. The clause in (e) is ruled out since *-kai* cannot appear within a morphological structure.

(58) a. Aurelia-Ø Jorge-ta$_i$ sawe-k [a$_i$ siim-'ii'aa-kai].
Aurelia-NOM Jorge-ACC order-PRFV 3SG:ACC go-WANT-CLM
'Aurelia ordered Jorge wanting him to leave.'

b.* Aurelia-Ø Jorge-ta$_i$ sawe-k [Aurelia a$_i$ siim-'ii'aa-kai]
'*Aurelia ordered Jorge Aurelia wanting him to leave.'

c. *Aurelia-Ø Jorge-ta$_i$ sawe-k [Ivan-ta a$_i$ siim-'ii'aa-kai]
'*Aurelia ordered Jorge Ivan wants him to leave.'

d. *Aurelia-Ø Jorge-ta$_i$ sawe-k [Aurelia-ta / Ivan-ta a$_i$ siim-'ii'aa-'u]
'*Aurelia ordered Jorge that Aurelia/Ivan wants him to leave.'

e. *Aurelia-Ø Jorge-ta$_i$ sim-sae-kai
'Aurelia ordered Jorge to leave.'

The properties of *–kai* closely resemble switch-reference tracking. Commonly found in verb-final languages, a reference-tracking device takes the form of a morpheme at the end of a clause signaling whether the subject of the next clause is the same referent as the subject of that clause (VV&LP: 287). The function of the *–kai* in the examples above indicate that the syntactic missing argument within the linked unit (the embedded PSA), must be co-indexed with the nominal causer in the matrix core. This possibility opens another explanation for this construction type: rather than a special type of jussive construction, these constructions express simultaneous events sharing the PSA. Evidence for this analysis comes from the following temporal clauses.[19] In the first two examples in (59), the main clause is modified by a temporal clause meaning 'when/while'. In (a), the PSA of the main verb and the PSA of embedded verb are different, and the linked unit is marked by the CLM *–o*. In (b), the PSAs of the two cores are the same, and hence the linked unit marked by *–kai* is missing a syntactic core argument, its PSA. Any other arrangement is ruled out.

(59) a. Nim achai yo'owe-Ø muuku-k [unison-po ne estudiaroa-o].
1SG:GEN father old-NOM die-PRFV Unison-LOC 1SG:ACC learn-WHEN
'My grandfather died while I was studying at the Unison.'

a′.* Nim achai yo'owe-Ø muuku-k [unison-po ne estudiaroa-kai].
'My grandfather died while I was studying at the Unison.'

b. Nim amigo-Ø muuku-k [unison-po estudiaroa-ka(i)].
1SG:GEN friend-NOM die(SG)-PRFV Unison-LOC learn-CLM

[19] Langacker (1977: 189-192) comments that some Uto-Aztecan languages distinguish among same-subject (SS) and different-subject (DS) only within temporal subordinate clauses, i.e. simultaneous and sequential events. Accordingly, Shoshoni shows the suffix *–ku* to indicate DS sequential events and *–ka* for SS simultaneous events. Tubatulabal uses *–ksa* and *–kan* for SS and DS 'interruptive' clauses, respectively. S. Paite uses *–kai* for SS simultaneous events. When theh clauses involve different subjects, most of these languages use other devices to indicate subordination, e.g. other CLMs, relative clauses, yuxtaposition; in all these instances, the embedded PSA is always accusative. The interesting aspect in Yaqui is that *–kai* not only marks SS temporally related clauses like those in (58), but it also appears in verb-governed constructions marking the complement of verbs like 'hope', 'dream', and some instances remembering and forgetting.

‘My friend died while studying at the Unison.’

b′.* Nim amigo-Ø muuku-k [unison-po estudiaroa-o].
‘My friend died while studying at the Unison.’

That is, regardless of the semantics of the matrix verb, the CLM *-kai* appears when the two cores share the PSA participant, and this is true even when the linked verb is passivized as the clause in (60a) shows. The fact that the matrix predicate is a speech act verb in the constructions in (59) below and (60c) above, does not necessarily mean that they convey a jussive sense; in (60b) there is a verb of saying without a causee participant since this is not a jussive construction but two temporally-related actions involving one and the same participant.

(60) a. Luisa-Ø si alle’ea-k [mantel-im miik-wa-kai].
Luisa-NOM a lot happy-PRFV tablecloth-PL give-PASS-CLM
‘Luisa was really happy when (she) was given the tablecloth.’

b. Juan-Ø nokichia-ta teuwa-k [nu’u-ka teuwa-kai]
Juan-NOM lie-ACC say-PRFV that-ACC say-CLM
‘Juan said a lie while saying that.’

c. Goyo-Ø Jorge-ta$_i$ lisensia-k [a$_i$ siim-sae-kai].
Goyo-NOM Jorge-ACC authorize-PRFV 3SG:ACC go-ORDER-CLM
‘Goyo authorized Jorge while ordering him to leave.’

For the purpose of this analysis, then, we will consider that the relationship among the matrix core and the unit marked by *–kai* in (59) and (60c) is an instance of two simultaneous events sharing the PSA. That is, the first clause involves a speech act verb taking two direct core arguments, the nominative PSA (actor) and the addressee (undergoer), e.g., *Goyo authorized Jorge*. The linked unit itself consists of a morphological jussive structure expressing *Goyo ordering him to leave*. This morphologically complex construction, as a whole, expresses a simultaneous action with respect to the action coded by the main clause. Because the two actions, the authorization

and the ordering are performed by the same participant, hence the linked unit is marked by *–kai*. The simplified representation for the construction *Goyo authorized Jorge while ordering him to leave* in (60c) is illustrated in Figure 5.6. Notice that this construction involves two core co-subordinated combinations.

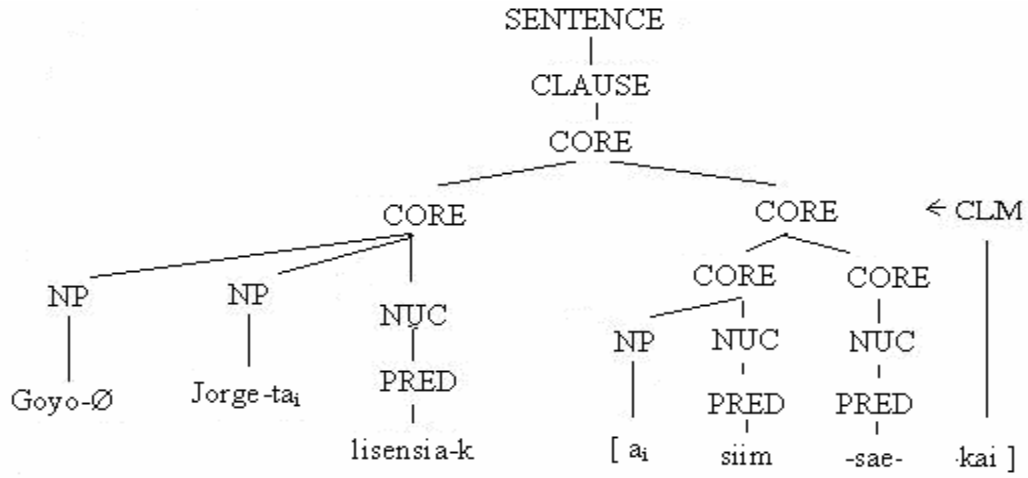

Figure 5.6: Core co-subordination for the construction *Goyo authorized Jorge while ordering him to leave* in (60c)

5.4 Summary

This chapter analyzed the diverse strategies that Yaqui uses to express the notion of causation. On the one hand, direct causation can be encoded not only by lexical and highly lexicalized verbal units but, most frequently, by a morphological construction taking *–tua* which can be added to intransitive, transitive and ditransitive verbs. There is also a construction involving two independent nuclei coding a result state causative situation. The relationship between the causing and caused event for direct causation reflects the semantic-syntactic iconic relation: the tightest syntactic linkage, nuclear and core co-subordination depending on the syntactic valence of the basic verb, correlates with the closest semantic relations, i.e., phases of a single event, physical contact between the participants, strong intention and control of the causer on the causee, and obligatorily argument sharing. On the other hand, verbal or indirect causation is expressed by

morphological and syntactic-like constructions. The former corresponds to core coordination, a tighter syntactic linkage, whereas the latter one consists of a clausal subordination, a less tight linkage. Compared to direct causation, both constructions express a looser semantic relation since the two events coded sequential events, there is no a physical but verbal causal relation, and they do not share a participant. That is, the core coordinate combination coding verbal causation is less tight than the construction coding physical causation but tighter than the other jussive construction.

Chapter 6

PHASE, PSYCH-ACTION AND PURPOSE

In this chapter, section 6.1 analyzes predicates expressing the internal facets of an event, e.g. *begin, start, finish, stop*; section 6.2 examines mental disposition to act on the part of the speaker, e.g. *want, hope, promise, know how to do*; section 6.3 explores purposive clauses referring to an action that is done with the intent of realizing another state of affairs. Consider some English examples.

(1) a. These people began to study Portuguese.
b. Yolanda tried to open the door.
c. German promised his mother he would go to the school.
d. Alexia went to the park to play with her brother.

Whereas psych-action predicates express a mental disposition on the part of the speaker toward an action involving her/himself, purposive clauses convey an intention to realize some event by means of a previous action. Traditionally, clauses like those in (1) have been characterized as *equi-deletion* constructions since the actor of the matrix core and the actor of the complement are co-referential and hence the embedded actor tends to be deleted. In Yaqui, some of these semantic relations are expressed by morphological means, while others are encoded by syntactic structures where a matrix predicate takes a complement unit. The 'equi-deletion' device depends on the complement type.

6.1 Phase predicates

The term *aspect* has been defined in various ways. For instance, Comrie (1976: 3) states that aspect refers to "different ways of viewing the internal temporal constituency of a situation", whereas for Chung and Timberlake (1985: 213) "[a]spect characterizes the relationship of a predicate to the time interval over which it occurs". RRG recognizes two functions related to aspect. First, aspect is about the internal temporal structure of the

event itself; in essence, aspectual operators refer to the notions of perfective vs. imperfective and progressive vs. non-progressive. Second, aspect operators include morphemes that indicate a particular phase of an event, such as the inceptive phase, the mid-point phase, or the end phase of an event. These morphemes are called *phase* verbs (cf. Coseriu 1976). The second function of aspect, termed *phase*, is considered here.

Phase verbs consist of a separate verb describing a facet of the temporal develop of such a states of affairs, specifically their onset, continuation, or termination. In English, these predicates are a well-studied group taking *to*- or *ing*-complements (Freed 1979; Wierzbicka 1988; Pustejovsky 1995; Adams 1999). The general claim is that they focus on some part or facet of another event, and place certain constraints on their verb complement, typically a prohibition against states and events which denote a culmination, although the constraints are not identical for each phase verb (Adams 1999:13). All phase verbs in Yaqui fit common Uto-Aztecan patterns of forming aspectual complexes from verb-verb compounds (Langacker 1977). The most common Yaqui verbs that fall into this category are listed in (2).

(2) Yaqui phase verbs

Onset of the event	**Conclusion of the event**	**Interruption of the event**
naate 'begin, commence'	*chupa* 'finish'	*su'utoja* 'abandon, suspend'
-taite 'begin, start'	*ansu* ~ *-su* 'finish, complete'	*-yaate* 'stop, interrupt'
-japte 'stand up (pl)'		*kikte* 'stand up (sg)'

These verbs exhibit some asymmetric characteristics. First, not all of them may appear as an independent verb; whereas *naate* 'begin', *ansu* 'finish', *su'utoja* 'suspend' and *kikte* 'stop' can appear as free or bound forms, *–taite* 'begin' *–su* 'complete' and *–yaate* 'stop' are always bounded, and *chupa* 'finish' occurs only as a main verb. Second, all phase verbs take the unmarked form as a complement; that is, the combination of a

fully tensed suppletive form plus a phase verb as in (3b) is completely avoided. Third, although most of them maintain their main sense when entering into the compound predicate (i.e., *naate* means 'begin' as a phase verb and as an independent form), some may alter their meaning. This is particularly true for the suppletive forms *japte* (pl) and *kikte* (sg) both meaning 'stand up (inchoative)', but when functioning as a phase verb the former means 'begin' and the latter 'stop'. Finally, the transitive versions of these suppletive forms are never used as phase verbs (3e).

(3) a. Ne kari-u we-taite-k.
1SG:NOM house-DIR walk(SG)-BEGIN-PRFV
'I started walking toward the house.'

b.* Ne kari-u weye-taite-k.
'I started walking to the house.'

c. Maria-Ø wakabak-ta joo-kikte-k.
Maria-NOM wakabaki-ACC make-STOP-PRFV
'Maria stopped cooking the wakabaki.'

d. U-me Jurasi-m teopo-po yeu-japte-k.
the-PL jews-PL church-LOC play-BEGIN-PRFV
'The Jews began to play in the church.' (D&C 1999: 322)

e. * Maria-Ø wakabak-ta joo-kecha-k.
'Maria stopped cooking the wakabaki.'

The beginning verbs express the onset of an event. The onset is itself an event that does not imply a culmination or conclusion of another event (Freed 1979). This semantic notion is expressed in Yaqui by adding one of the following: the main verb *naate* 'start, commence' in (4a), the bounded form *–taite* 'begin' occurring with singular and plural NPs in (4b) and, less common, verb *japte* 'to stand up (pl)' in (4c) which is restricted to plural NPs acting as the PSA.

(4) a. Lupe-Ø wakabak-ta joo-naate-k.
Lupe-NOM wakabaki-ACC make-START-PRFV

'Lupe started to cook the wakabaki.'

b. Aurelia-Ø tosa koari-m joo-taite-k.
Aurelia-NOM white skirt-PL make-BEGIN-PRFV
'Aurelia began making the white skirts.'

c. U-me yoem-leepeo-m nee bino-ji'i-tua-japte-k
the-PL man-trash-PL 1SG:NOM wine-drink-CAUSE-BEGIN(PL)-PRFV

ne-mak naaj = kat-japte-k.
1SG-INST around = go(PL)-BEGIN(PL)-PRFV
'Those Yaqui "low-firers" began to make me drink liquor; they began to go around with me.' (D&C 1999: 322)

As a main verb, *naate* can be used intransitively (5a-b) and transitively (5c). The PSA of *naate* may be an effector (a) or a theme (b); the former answers the question '*did you finish writing it*?' As in English, the clause in (5c) has two readings, one where Aurelia started eating the oatmeal (telic) and the other where she started preparing the oatmeal (agentive).

(5) a. E'e, ka ne naate-k.
NEG NEG 1SG:NOM start-PRFV
'No, I have not started.'

b. U nobeena-Ø yooko naate-bae.
the novenario-NOM tomorrow start-DESID
'The novenario (nine days' prayers) starts tomorrow.'

c. Aurelia-Ø abena-ta naate-k.
Aurelia-NOM oatmeal-ACC begin-PRFV
'Aurelia started the oatmeal.'

Although the two refer to the starting point of the event, *naate* and *–taite* seem to be semantically restricted. Whereas both forms can be used when the unique argument is an animate participant as in (6a), with inanimate arguments only *–taite* is used.

(6) a. U ili uusi yejte-naate-Ø / yejte-taite-Ø.
the little child-NOM sit-BEGIN-PRES sit-BEGIN-PRES
'The child begins to sit down.'

b. U-me awa-m choobikukte-taite-k.
the-PL horn-PL twist-BEGIN-PRFV
'The horns started twisting.'

c.* U-me awa-m choobikukte-naate-k.
'The horns began twisting.'

Yaqui *beginning* verbs seem to constrain the second member of the complex predicate. Both verbal forms can be freely attached to activity and active accomplishment verbs selecting the onset part of the action, as in (4) above. The combination state-begin seems to be more restricted. Whereas it is acceptable in (7a), since *alle'a-taite* expresses the starting point of Juan's mood change and in (7b) since *sebe-taite* focuses on the initiation of the cooling, the combination in (7c) is less felicitous since there is not any change involved. This pattern is technically known as coercion.

(7) a. Joan-Ø alle'e-taite-Ø.
Juan-NOM be happy-BEGIN-PRES
'Juan began to be happy.'

b. U kape-Ø sebe-taite-Ø.
the coffee-NOM be cold-BEGIN-PRES
'The coffee begins to become cold.'

c.* Maria-Ø lio-nok-ta ta'a-taite-k.
'Maria started knowing the Lord's prayer.'

Semelfactives and achievements are also compatible, but only when the interpretation of the entire clause is iterative (8a). When combined with *pejte* 'burst' in (8b), the plural NP *kuetem* allows a reading in which the process of setting off fireworks takes place several times; a clause such as (8c) with a singular NP sounds odd, since achievements refer to a punctual or instantaneous event where it is hard to highlight the starting point.

(8) a. U ili jamut-Ø si ousi taase-taite-k.
the little woman-NOM a lot cough-BEGIN-PRFV
'The girl started coughing a lot.'

b. U-me o'ow-im kuete-m pejta-taite-k.
the-PL man-PL firework-PL burst-BEGIN-PRFV
'The men began setting off the fireworks.'

c.* U-me o'ow-im bwepul kuete-ta pejta-taite-k.
'The men began setting off one firework.'

When added to accomplishments, the beginning verbs nullify telicity. In a clause like *Aurelia began boiling the wakabaki* in (9a), both the start and the boiling the wakabaki events are asserted to take place at the same time, but the meaning of *begin* does not ensure that the point of culmination of the accomplishment is reached, meaning that the truth of the result state is not necessarily implied, as illustrated in (9b).

(9) a. Aurelia-Ø wakabaki-ta pojta-taite-k.
Aurelia-NOM wakabaki-ACC boil-BEGIN-PRFV
'Aurelia began boiling the wakabaki.'

b. Min-Ø kafe-ta sak-taite-k bweta
Min-NOM coffee-ACC toast-BEGIN-PRFV but

aapo ka a chupa-k.
3SG:NOM NEG 3SG:ACC finish-PRFV
'Fermin began toasting the coffee but he did not finish it.'

Finishing and completing verbs are those phase verbs denoting the final part of an action or the culmination of a process coded in the non-matrix verb. Yaqui presents at least two main verbs denoting the completion of a nominal object: the main verb *chupa* 'finish', which has a morphologically-related intransitive pair in (10b), and *ansu* 'complete', which can be used as either intransitive (10c-d) or transitive (10e). Only *ansu* can occur as a phase verb taking a verbal complement.

(10) a. Nim sai-Ø u-ka kari-ta chupa-k.
1SG:GEN brother-NOM the-ACC house-ACC finish-PRFV
'My brother finished the house.'

b. U kari-Ø chupe-k.
the house-NOM finish-PRFV

'The house is finished.'

c. U kokoa-Ø ansu-k.
the illness-NOM finish-PRFV
'The illness is over.'

d. Ne ansu-k.
1SG:NOM finish-PRFV
'I have finished.'

e. Min-Ø bepparia-ta ansu-k.
Fermín-NOM roof-ACC finish-PRFV
'Fermin finished the roof.'

When added to a basic stem, *ansu* tends to occur as a short form *–su*; it can be added either to singular or plural, animate or inanimate nominative arguments. This phase suffix conveys a completive reading where the event does not extend beyond a certain point because it had run its full course, strongly implying the ending of an action or the culmination of a process.

(11) a. U-me jamuch-im waj-po tekipanoa-ansu-k.
the-PL woman-PL field-LOC work-FINISH-PRFV
'The women finished working in the field.'

b. Joan-Ø e'tejo-ri-ta e'tejo-su-ne.
Joan-NOM tell-PASS-ACC tell-FINISH-EXPE
'Joan will finish telling the story.'

c. Ivan-Ø jaibu inim notti-su-k.
Ivan-NOM already here return-FINISH-PRFV
'Ivan already returned here.'

The examples above illustrate the activity-finish combination. Although highly limited, the combination of stative-finish is still possible. In (12a), the interpretation of the entire clause is that the participant was happy some time before but not now. The examples in (12b-c), however, are unacceptable.

(12) a. Jai-sa empo alle'a-su-k?
Why-WH 2SG:NOM happy-FINISH-PRFV

‘Why did you stop being happy?’

b.* U kafe-Ø sebe-su-Ø.
‘The coffee finished being cold.’

c.* Maria-Ø lio-nok-ta ta’a-su-k.
‘Maria finished knowing the Lord’s prayer.’

Unless the undergoer is plural and the whole clause is interpreted as an iterative event (13a), semelfactives and achievements are incompatible with the finishing verbal suffix. When combined with accomplishments, as in (13b), *-su* highlights the inherent end point, and the new result state denoted by the non-matrix event is true.

(13) a. U-me kuete-m pejti-su-k.
the-PL firework-PL burst-FINISH-PRFV
‘The fireworks setting off.’

a′. *Bwepul kuete-Ø pejti-su-k.
‘One firework finished setting off.’

b. Nim achai yo’owe-Ø jaibu muuk-su-k.
1SG:GEN father old-NOM already die-FINISH-PRFV
‘My grandfather is already dead.’

Finally, the cessative verbs also focus on the termination of the event denoted by the non-matrix verb, but they exclude the culmination by emphasizing the interruption of that event (Freed 1979). They express the end of the non-matrix event prior to its conclusion, as in the English verbs *cease, stop, quit,* and *suspend*. In Yaqui, this notion is expressed by *su’utoja* ‘abandon, suspend’, *kikte* ‘stand up (sg)’, and the bound verb *–yaate* ‘stop’. The first two may occur either as a main verb or within a verb-verb compound. While (14a) expresses that Jorge quit his work without finishing it, (14b) means that Jorge already finished working.

(14) a. Jorge-Ø tekipanoa-su’utoja-k.
Jorge-NOM work-STOP-PRFV
‘Jorge stopped /quit working.’

b. Jorge-Ø tekipanoa-su-k.
Jorge-NOM work-FINISH-PRFV
'Jorge finished working.'

Cessative verbs suggest, roughly speaking, an ongoing event and a sudden and unpredictable change, meaning that the action or process coded by the basic verb is not necessarily expected to continue. Accordingly, activities are compatible with cessative verbs, as the examples below show.

(15) a. U ili uusi-Ø bwaan-yaate-k.
the little child-NOM cry-STOP-PRFV
'The child stopped crying.'

b. Min-Ø wee-kikte-k.
Fermin-NOM walk-STOP-PRFV
'Fermin stopped walking (= handicap)'

The stative-stop combination in (16), however, seems to be avoided in Yaqui. Adams (1999: 164) explains this semantic restriction: since cessation verbs entail that the denoted event does not hold after the asserted time, states cannot entail their own failure to persist before or after the time value they are associated with.

(16) a. * Joan-Ø alle'a-kikte-k / alle'a-su'u-toja-k.
'Juan stopped being happy.'

b. * U-me soto'i-m bwia-po jo'oka-yaate-k.
'The pots ceased sitting on the floor.'

Since the denoted event must have been holding before the interruption, cessative verbs tend to be associated with a durative time value, meaning that verbs describing punctual events will be excluded, unless are interpreted iteratively, as in (17).

(17) a. U ili jamut-Ø si ousi taase-yaate-k.
the little woman-NOM a lot cough-STOP-PRFV
'The girl stopped coughing a lot.'

b. U-me o'ow-im kuete-m pejta-yaate-k.
the-PL man-PL firework-PL burst-STOP-PRFV

'The men ceased setting off the fireworks.'

While the combination of cessative and non-causative accomplishments tends to be avoided (18a), the combination of cessative and causative accomplishments emphasizes that the process has been suspended and, consequently, that the result state is not implied.

(18) a.* Nim achai yo'owe-Ø muuku-yaate-k.
'My grandfather ceased dying.'

b. Aurelia-Ø tajkai-m joa-yaate-k into muuni-m gisaroa-taite-k.
Aurelia-NOM tortilla-PL make-STOP-PRFV and bean-PL fry-BEGIN-PRFV
'Aurelia ceased making tortillas and began frying the beans.'

c. Jorge-Ø kari-ta ya'a-yaate-k.
Jorge-NOM house-ACC make-STOP-PRFV
'Jorge ceased building the house (= it is not done).'

When expressing the internal stages of another state of affairs (i.e., phases of a single event), the two linked units behave as a single clause for the purpose of linking. That is, there is a single event made up of two nuclei taking a single set of core arguments. The actor corresponds to the nominative NP, the argument serving as the active PSA, and the undergoer, when present, corresponds to the accusative NP. One piece of evidence for this single set of core arguments comes from the use of passive voice. As shown below, the suffix *–wa* is always attached to the final nucleus, resulting in an impersonal reading; *-wa* cannot be added to the linked verb, as illustrated in (19c).

(19) a. Aurelia-Ø tosa koari-m joo-taite-k. (=(4a))
Aurelia-NOM white skirt-PL make-BEGIN-PRFV
'Aurelia began making the white skirts.'

b. U-me tosa koarim joo-taite-wa-k.
the-PL white skirt-PL make-BEGIN-PASS-PRFV
'(Someone) began to make the white skirts.'

c.* Aurelia-Ø tosa koari-m joo-wa-taite-k.
'*Aurelia began (someone) to make the white skirts.'

The two predicates must share the operators at the level of nucleus. The examples in (20a) shows that the completive suffix *–la* must be attached at the end of the complex predicate, otherwise the clause is ungrammatical (20b). When *-la* is added to a clause coding the phase of an event, it expresses an episodic reading.

(20) a. Aurelia-Ø abena-ta joo-taite-la.
Aurelia-NOM oatmeal-ACC make-START-CMPL
'Aurelia has started making the oatmeal.'

b.* Aurelia-Ø abena-ta joo-la-taite.
'*Aurelia starts having made the oatmeal.'

The fact that constructions coding phases of a single event are morphologically expressed in Yaqui is not surprising, since they code a closer semantic relation. Each of these units expresses a phase of a single state of affairs and, by definition, actions treated as phases of a single event are going to be closer to each other semantically than actions treated as distinct events. They also involve a closer temporal relationship between the two events (i.e., the temporal hierarchy), as well as a stronger actor's intention to begin, finish or stop doing another event (i.e., the participants' mental disposition hierarchy). The morphologically derived structure is, then, an extension of this closer semantic cohesion. Since the two units take a single set of core arguments and must share operators at the level of nucleus, we are dealing with nuclear co-subordination.

6.2 Psych-action predicates

The next group of predicates showing a close semantic relationship is psych-action. The verbs included in this group encode a mental disposition regarding a possible action on the part of the participant. English verbs included in this class are: *want, try, promise, hope, be afraid, forget,* and *remember*. Some of these predicates take a *to*-complement

(21a), some take an *ing*-complement (21b) and some may take a *to*- and a *that*-complement.

(21) a. He wanted to dance / * He wanted dancing.
b.* He imagined to be blind / He imagined being blind.
c. He promised to do it / He promised that he would do it / *He promised doing it.

Although examining the semantic difference between these complement types has been the goal of several studies (Bolinger 1968; Dixon 1984b, 1995; Wierzbicka 1988; Van Valin and Wilkins 1993; VV&LP: 469-477), the exact difference in meaning between *to*- and *ing*- complements, on the one hand, and *that*-complement, on the other, has not yet been stated exactly. For instance, Dixon (1995: 188) comments that verbs like *want, wish, decide,* and *hope* have a modal interpretation when the subject of the main verb becomes involved in either the activity or state referred to by the complement or to the possibility of such involvement. Because of this interpretation, these verbs may take a *to*-complement referring to something attainable, that is, the speaker can do something to achieve, e.g., *I hope to attend the concert this evening*, or to a *that*-complement relating to something over which he/she has less control, e.g., *I hope that I do live to draw my pension*. Likewise focusing on the meaning of the complementizer, Wierzbicka (1988) proposes a semantic representation where, roughly speaking, the *to*-complement can be paraphrased by 'X thought this: I want this: I will do this', whereas the *ing*-complement is not always compatible with this structure. She predicts that, given this semantic representation, most verbs of volition and intention, as well as some speech act verbs like *promise*, tend to prefer a 'subjectless' *to*-complement in English.

Besides the meaning distinction between complement units, all instances of psych-action predicates are characterized by having an experiencer participant as the PSA

expressing an emotional, volitional, intentional disposition for the complement event to take place. When two participants are involved, the verb turns into a propositional attitude predicate. The English clauses in (a, b, c) below express two distinct events performed by the same participant; the complement expresses the intended event and, in addition, the non-matrix PSA is obligatorily omitted. The clauses in (a′, b′, c′) refer to two events performed by different participants, and the complement expresses a proposition.

(22) a. Francisco wants to eat enchiladas.
a′. Francisco wants Amparo to eat enchiladas.

b. Rosa tried to open the birdcage.
b′. Rosa persuaded him to open the birdcage.

c. Maria hopes to leave.
c′. Maria hopes for Jorge to leave.

This section analyzes Yaqui psych-action predicates. For purpose of the analysis, the data is organized into five subgroups: i) *want*-predicate, ii) *promise*-predicate, iii) *know how to*-predicate, iv) *hope*-predicate, and v) other mental state predicates such as *dream, be afraid, remember* and *forget*, which may convey both, a mental disposition on the part of the speaker as well as some sort of knowledge.

6.2.1 *Want*-predicates. Although a variety of other categories are briefly mentioned, the principal category discussed here is that of desideratives. The concept of wanting something or someone is expressed by the main verb *waata* 'want, love' in (23a-b), which has a morphologically-related pair *waate* 'miss' taking an oblique core argument in (23c). Neither of these verbs is used to express a desiderative situation involving another event.

(23) a. Aurelia-Ø mansana-ta waata-Ø.
Aurelia-NOM apple-ACC want-PRES
'Aurelia wants an apple.'

b. Aurelia-Ø enchi waata-Ø.
Aurelia-NOM 2SG:ACC want-PRES
'Aurelia loves you.'

c. Aurelia-Ø e-u waate-Ø.
Aurelia-NOM 2SG-DIR want-PRES
'Aurelia needs / misses you.'

'Want' is an interesting verb in that many languages employ different grammatical strategies depending on whether the subject of the complement verb is the same as or different from the subject of 'want' (Dixon 1995: 215). English is unusual in having the same construction in each instance, e.g. *I want to stay* vs. *I want you to stay*. Yaqui has two lexical forms, one for the psych-action interpretation, and the other for the propositional attitude sense.[20] The self-oriented sense is coded by the verbal suffixes *–bae* or *–pea*, whereas the other-oriented interpretation is expressed by *–'ii'aa* 'want'. Compare the following clauses.

(24) a. Ne kaa polisia-ta tomi-ta mak-bae-Ø.
1SG:NOM NEG police-ACC money-ACC give-DESID-PRES
'I don't want to give the police the money.'

a′.* Ne kaa polisia-ta tomi-ta mak-'ii'aa-Ø.
'I don't want to give the police the money.'

[20] Other Uto-Aztecan languages use the same lexical form to express both the self-oriented intention and the speaker's propositional attitude with respect to other events. Tohono O'odham is a good example of this; the examples are from Langacker (1977).

(i) Tačču a = ñ [m = a = n= t o ñ-hii]
want BASE = I SUBOR=BASE=I=PRFV FUT REFL-shear
'I want to cut my hair.'

(ii) H\g o tačču [m = a = n= t s wo čipk]
that BASE want SUBOR=BASE=I=PERF QUOT FUT work:PRFV
'He wants me to work.'

b. Ne kaa Goyo-ta polisia-ta tomi-ta mak-'ii'aa-Ø.
1SG:NOM NEG Goyo-ACC police-ACC money-ACC give-WANT-PRES
'I don't want Goyo to give the police the money.'

b′.* Ne kaa Goyo-ta polisia-ta tomi-ta mak-bae-Ø.
'I don't want Goyo to give the police the money.'

Situations where the actor expresses her volition and intention regarding a state of affairs is encoded by the desiderative suffixes -*bae* and –*pea,* usually glossed as 'want, desire'. As illustrated in (25), the difference between the two morphemes is that –*pea* indicates an emotional desire on the part of the speaker that is stronger than the desire that the speaker feels when he/she uses -*bae*. Because of this, -*pea* is restricted to human participants.[21] A related form appears in other Uto-Aztecan languages, such as –*iv* in Serrano, -*ba* in Hopi, and -*vichu* in Cupeño.

(25) a. Inepo si kot-bae-Ø.
1SG:NOM a lot sleep-DESID-PRES
'I want to sleep a lot.'

b. Inepo si kot-pea-Ø.
1SG:NOM a lot sleep-INTENT-PRES
'I really feel sleepy.'

c. Goyo-Ø serbesa-ta ji'i-bae-Ø.
Goyo-NOM beer-ACC drink-DESID-PRES
'Goyo wants to drink a beer.'

d. U jamut-Ø kaa yi'i-pea-Ø.
the woman-NOM NEG dance-INTENT-PRES
'This woman does not want to dance.'

In all these instances, the actor is considering the possibility of being involved (or not) in the action in question. Although D&C (p. 296) argue that –*bae* can still be used as a main verb (26a), I found few examples of it, and most of them involve some sort of

[21] It is possible, of course, to derive a propositional attitude clause by using the causative–*tua* plus –*pea*:
Aurelia-Ø enchi siim-tua-pea-n.
Aurelia-NOM 2SG:ACC go-CAUSE-INTENT-PASTC
'Aurelia wanted very much for you to leave / Aurelia wanted to make you leave.'

noun incorporation (26b) or the inchoative suffix *–tu* 'be' (26c-d). When an inanimate NP serves as the PSA (26d), the reading is an expected event, i.e. 'X is going to happen'.

(26) a. Bae-ka juni'i ne kaa baa-bae-k.
wish-CLM even 1SG:NOM NEG wish-DESID-PRFV
'Even though I wanted to, I didn't want to want to.' (D&C 1999)

b. Im maala-Ø ainam tajkai-bae-Ø.
1SG:ACC mother-NOM flour tortilla-DESID-PRES
'My mother wants to make flour tortillas.'

c. Ian wasuktia-t in sai-Ø chapayeka-tu-bae.
today year-LOC 1SG:GEN brother-NOM chapayeka-BE-DESID
'My brother will be a chapayeka this year (a religious dancer).'

d. U jinko'ola-wa-me yooko-tu-bae.
the competition-PASS-CLM tomorrow-BE-DESID
'The competition will be tomorrow.'

Whereas *–pae* highlights the participant's mental disposition for the event to happen, the use of *-bae* has been grammaticalized to such a point that it may be used to indicate a simple potential or planned event. This is similar to the English verb 'will' which historically meant 'want'. In fact, whenever the context is appropriate, *-bae* and *–ne* can alternate keeping the same future-oriented meaning. In contrast to Lindenfeld's claim, the combination of *–pea+ ne / -bae + ne* is not possible according to my data.

(27) a. Yooko Ivan-Ø kaba'i-ta jinu-bae.
tomorrow Ivan-NOM horse-ACC buy-DESID
'Ivan wants / will/ is going to buy a horse tomorrow.'

b. Yooko Ivan-Ø kaba'i-ta jinu-ne.
tomorrow Ivan-NOM horse-ACC buy-EXPE
'Ivan will go to buy a horse tomorrow.'

c.* Yooko Ivan-Ø kaba'i-ta jinu-bae-ne / jinu-pea-ne.
'Ivan will want to buy a horse tomorrow.'

d. Aapo bwi-bwik-pea-ne.
3SG:NOM RED-sing-INTENT-EXPE
'He will often feel like singing.' (Lindenfeld 1973: 26).

It does not mean, however, that the future-oriented reading of *–bae* should be unmarked for tense. With animate participants, *-bae* and *–pea* may be followed by the perfective *–k* or past continuative *–n*, expressing an expected situation in the past. The expected suffix *–ne*, however, never occurs with past suffixes as demonstrated in (28c).

(28) a. Empo kaa em achai a'-ania-bae-k.
2SG:NOM NEG 2SG:GEN father RED-help-DESID-PRFV
'You did not want to help your father (= and you didn't do it).'

b. U ili uusi-Ø bwaana-pea-n.
the little child-NOM cry-DESID-PASTC
'The child felt like wanting to cry (= but he didn't).'

c. * U ili uusi-Ø bwaana-ne-k.
'*The child will cried'

That is, when expressing the participant's intention, the desiderative verbal suffixes are not confined to a simple future context, but they involve an intentional and planned, although not necessarily achieved, situation. This intention can be positive in (29a) or negative in (29b). It can also be an action, a state, or an event.

(29) a. Armado-Ø Quinto-u we-pea bweta si osi yuuku-Ø.
Armando-NOM Quinto-DIR go-INTENT but a lot rain-PRES
'Armando really wants to go to El Quinto but it is raining a lot.'

b. Goyo-Ø kaa muk-pea.
Goyo-NOM NEG die-INTENT
'Goyo does not feel like dying / does not want to die.'

Although more data would be necessary, it seems that passive/impersonal (i.e. unspecified) volitional sentences are avoided in Yaqui, unless the inchoative suffix *–tu* 'to be, become, be turned into' is added to the basic predicate.

(30) a. ? Quinto-u we-pea-wa. (cf. (29a))
Quinto-DIR go-INTENT-PASS
'(Someone) wants to go to El Quinto.'/ 'It is desirable to go to El Quinto.'

b. Aurelia-Ø ka ki'i-tu-wa-pea.
Aurelia-NOM NEG bite-INCHO-PASS-INTENT
'Aurelia does not want to be bitten (by the dog).'

Yaqui does not have a lexical form to encode the 'attempting' notion of English verbs such as *try, attempt,* and *fail*. Instead, a reduplicated form of *–bae* is used in order to express both the speaker's intention and the effort aimed at the desired outcome.[22]

(31) a. Ne lauti sim-babae ta-ne kaa siika.
1SG:NOM early go(SG)-RED:DESID but-1SG:NOM NEG go:PRFV
'I tried to leave early but I didn't go.'

b. Empo u-ka maska-ta tu'u-te-babae-k ene-po
2SG:NOM the-ACC mask-ACC good-CAUSE-RED:DESID-PRFV January-LOC

bweituk e kaa a ya'a-k.
but 2SG:NOM NEG 3SG:ACC make-PRFV
'You tried to fix the mask in January, but you didn't do it'.

The same reduplicated form attached to the main verb *ya'a* 'make' is used to express the meaning 'decide', as exemplified in (32).

(32) Luisa-Ø poso'i-m ya'a-babae-k.
Luisa-NOM pozole-PL make-RED:DESID-PRFV
'Luisa decided to cook the pozole (=she has not started yet)'

The fact that it is the same verbal suffix that is used to encode both volitional and attempting meanings, corroborates the property of *–bae* and *–pea* as general forms denoting the speaker's volition of the event's occurrence. These suffixes presuppose not only that the speaker is considering the possibility of doing the action, but also the presence of a thought about wanting that action. Accordingly, the lexical representation

[22] The notion of 'persuade somebody to do something' is expressed by a similar construction taking the causative suffix *–tua*. See the following example.
Ne pajko-u am saka-tua-babae-k bweta
1SG:NOM party-DIR 3PL:ACC go(PL)-CAUSE-RED:DESID-PRFV but

bempo ka aman noite-k
3PL:NOM NEG there return-PRFV
'I persuaded them to go to the party but they didn't go'

for the clause in (27a) repeated below, will be as follows. Although the event coded by the basic verb is semantically an argument of **want´**, syntactically it does not behave as a core argument. For the purpose of linking, a V-*bae* complex nucleus behaves as a single unit taking one set of core arguments. The highest-ranked argument, the actor, is assigned nominative case and hence functions as the PSA in an active clause; the second-highest ranked argument, when present, will be assigned accusative case.

(33) a. Yooko Ivan-Ø kaba'i-ta jinu-bae. (= (27a))
tomorrow Ivan-NOM horse-ACC buy-DESID
'Ivan wants / will go to buy a horse tomorrow.'

b. **yooko´** [**want´** (Ivan, [**do´** [Ivan, Ø] CAUSE [BECOME **have´** (Ivan, kaba'i)])]

6.2.2 ***Promise*-predicate.** Whereas *–bae* and *–pea* express the speaker's mental disposition regarding some state or event that may be realized, *-roka* expresses that this intention was made clear verbally. It can be added to one, two and even three place predicates. This quotative suffix does not occur as a main verb.

(34) a. Bempo lauti ko-kot-roka-n.
3PL:NOM early RED-sleep-PROMISE-PASTC
'They promised to sleep early.'

b. Empo Joan-ta kaba'i-ta etbwa-ria-roka-n.
2SG:NOM Juan-ACC horse-ACC steal-APPL-PROMISE-PASTC
'You promised to steal the coffee [from] Juan.'

This verbal suffix refers to a strong commitment to a certain action, rarely a state (35a). Although the speaker refers to a planned but not necessarily achieved event (35b), the two nuclei must share all the TAM operators in order for the sentence to be grammatical. This restriction includes the occurrence of suppletive past forms (35d).

(35) a.* Maria-Ø Lio-nok-ta ta'a-roka-n.
'Maria promised to know the Lord's prayer.'

b. Goyo-Ø yooko pajko-po yi'i-roka-n.
Goyo-NOM tomorrow party-LOC dance-PROMISE-PASTC
'Goyo promised to dance in the party tomorrow.'

c. Aapo siim-roka-Ø.
3SG:NOM go-PROMISE-PRES
'(S)he promises to go.'

d.* Aapo siika-roka-n.
'(S)he promised having left.'

Although *–roka*'s morphological structure closely resembles the direct causation expressed by *–tua*, they are crucially different in terms of semantic control. For the causative *–tua,* the undergoer of the main (causing) event refers to the actor of the non-main (caused) event (i.e., undergoer control); it is this accusative NP which acts as the passive-PSA when the nominative actor is omitted. For psych-action *-roka*, the actor of the main event is also the actor of the non-matrix event (i.e., actor control); hence the actor is overtly expressed once in the clause. Because the controller is the syntactic argument in the matrix core which also functions as a semantic argument in the linked core, the controller must be a core argument in the matrix core (VV&LP: 545). In causative constructions, the undergoer (causee) functions as the passive-PSA, and since it is a core argument, it continues to function as controller and the resulting passive sentence is fine. With *promise*, the actor is completely omitted and the accusative NP cannot serve as the passive-PSA. When the suffix *–wa* is added to a *–roka* clause, the accusative NP must keep its status of a non-PSA core argument resulting in an impersonal, rather than passive construction (36b-c).

(36) a. Empo Joan-ta et-po ania-roka-n.
2SG:NOM Joan-ACC sown field-LOC help-PROMISE-PASTC
'You promised to help Joan in the sown field.'

b. Joan-ta et-po ania-roka-wa-n.
Joan-ACC sown field-LOC help-PROMISE-PASS-PASTC
'(Someone) promised Joan to help (him) in the sown field.'

c. * Joan-Ø et-po ania-roka-wa-n.
'*Juan was promised to be helped in the sown field.'

These two notions also differ in their LSs, whereas causatives and jussives have a CAUSE operator, the promise predicate does not; it only refers to something like 'I say I will do something'. The lexical representation for the clause in (36a) above is as follows.

(37) **say´** (2sg, [**do´** (2sg, [**be-in´** (et, [**help´** (2sg, Joan)]

Regardless of whether or not the thought was or was not expressed verbally, the fact that a personal desire and intention of being involved in a future-oriented event is represented by a morphological structure is very common cross-linguistically (Noonan 1985:124). In terms of juncture-nexus relations, the *promise* construction type is expressed by core co-subordination. There are two core units sharing an argument, the actor. Subordination is ruled out since the content of the desire does not serve as a core argument for the matrix predicate. The fact that both core units must share all the TAM operators rules out coordination. That tightly linked structure is expected since the two events show a close semantic relationship, especially in terms of the participant's mental dispositional hierarchy.

6.2.3 *Know how to*-predicate. In some other Uto-Aztecan languages, the ability of the speaker to perform an action is also expressed by adding a modal suffix to the basic verb, e.g. *–cham-ŋoorax-vota* 'able to run' in Luiseño, *s-m ̓l-dag* 'be able to run' in Papago. In Yaqui, however, this notion is expressed by the modal verb *aawe ~ aa* 'be able to do X' which precedes the basic verb. Consider the following examples. The

clause in (38a) illustrates the use of *aawe* as a main verb. In (38b), the full form *aawe* takes a linked unit marked by *–po*; in (38c), the reduced form takes an unmarked unit.

(38) a. Empo bisikleeta-t aawe-Ø.
2SG:NOM bike-LOC KNOW-PRES
'You know how to ride a bicycle (Lit. You know about bikes)'

b. Aurelia-Ø tajo'o-ta awe baksia-po.
Aurelia-NOM cloth-ACC KNOW HOW TO wash-LOC
'Aurelia knows how to wash the clothes (Lit. knows about washing).'

c. Aurelia-Ø tajo'o-ta aa baksia-Ø.
Aurelia-NOM cloth-ACC ABLE wash-PRES
'Aurelia is able to wash the clothes.'

Any other combination or CLM occurrence will result in an ungrammatical construction, as shown below. When the argument acting as the PSA is animate (39d), there is no doubt about the notion of the participant's mental disposition with respect to the state of affairs. However, when the NP is inanimate as in (39e), the whole clause refers to a potential state of affairs.

(39) a. * Aurelia-Ø tajo'ota awe baksia.
b. * Aurelia-Ø tajo'o-ta aa baksia-po.
c. * Aurelia-Ø tajo'o-ta aa baksia-'u.

d. Empo aa bachi-tus-ta bwa'e?
2SG:NOM ABLE corn-grind-ACC eat
'Are you able to eat 'pinole'?

e. U abaso-Ø aa beete.
the poplar-NOM ABLE fire
'The poplar may catch fire.'

In my data, *aa* + basic verb structure occurs with either animate or inanimate participants, whereas *aawe* + verb-*po* seems to be restricted to animates. Because of this, the former structure is much more productive and occurs with higher frequency. The

examples below show that, except for a pronominal accusative direct core argument, no elements can occur between the two verbal units (40b′, c′).

(40) a. Kaa ne aa a tejwa a'abo enchi wee-ne-betchi'ibo.
NEG 1SG:NOM ABLE 3SG:ACC tell here 3SG:ACC go-EXPE-FOR
'I cannot say it, that you come here (= I am unable to order you)'

b. Maria-Ø tua banko-m aa joa-n.
Maria-NOM really bench-PL ABLE make-PASTC
'Maria really knew how to build benches (but she forgot it).'

b′.* Maria-Ø aa tua banko-m joa-n.
'Maria really knew how to build benches'

c. In apala ousi aa tekipanoa.
1SG:GEN grandson a lot ABLE work
'My grandson is able to work a lot.'

c′.* In apala aa ousi tekipanoa.
'My grandson is able to work a lot.'

At present, there is little one can say about this type of construction, except that *aa* is highly grammaticalized in that it does not take any of the verbal suffixes, i.e., all TAM operators are marked on the final verb. This would suggest nuclear co-subordination. D&C has suggested that "the peculiarities of this auxiliary may point to an original status as an adverbial meaning "well" in a typological parallel to Cora and even Tohono O'odham" (p. 365).

6.2.4. *Hope*-predicate. One more verb that is compatible with the idea of volition on the part of the speaker is *hope*. This predicate is characterized by having an experiencer participant expressing the expectation for a state of affairs to happen, e.g., *Sabrina hopes to attend the conference this year, Rob hoped for his wife to stay longer in India*. In Yaqui, this notion is coded by the main verb *bo'o-bicha* (lit. road-see). The examples below show its use as a main verb meaning 'wait, hope'.

(41) a. Treen-ta = te bo'obicha-n.
train-ACC 1PL:NOM wait-PRES
'We were waiting for the train'

b. Aapo Vikam-po nee bo'obicha-Ø.
3SG:NOM Vicam-LOC 1SG:ACC wait-PRES
'He is waiting for me in Vicam.'

When acting as a complement-taking predicate, *bo'obicha* is semantically similar to the English verb *hope* and *expect*, expressing an emotional attitude toward an event 'whose status is, for whatever reason, unknown, but which could turn out to be true' (Noonan 1985: 121-2). This mental disposition is expressed through different syntactic structures depending on whether or not the PSAs of the two cores are the same. *Bo'obicha* requires the linked unit to appear in the post-core slot.

(42) a. Maria-Ø bo'obicha-Ø [sim-betchi'ibo]
Maria-NOM hope-PRES go-FOR
'Maria hopes for leaving.'

b. Maria-Ø bo'obicha-Ø [sim-bae-kai]
Maria-NOM hope-PRES go-DESID-CLM
'Maria hopes to leave.'

c. Maria-Ø Ivan-ta sim-bo'obicha-Ø.
Maria-NOM Ivan-ACC go-hope-PRES
'Maria is hoping for Ivan to leave.'

d. Maria-$Ø_i$ bo'obicha-Ø [$a_{j/*i}$ sim-ne-'u]
Maria-NOM hope-PRES 3SG:ACC go-EXPE-CLM
'Maria hopes that he would leave.'

When the two cores do share the PSA, the linked unit must be marked by the general purposive postposition *–betchi'ibo* (42a) or the desiderative sequence *–bae-kai* (42b). When they do not share their PSA, the psych-action predicate may be directly adjacent to the basic verb (42c) or it may take a linked unit marked by *–'u* (42d), but the linked verb expresses all its syntactic arguments. Notice that the linked unit is missing a syntactic

argument, its PSA, which is the same as the PSA of the matrix core, i.e. actor control construction. If the linked verb expresses its PSA, the construction is ungrammatical, as shown below.

(43) a. Aurelia-Ø bo'obicha-Ø [wakabak-ta joa-betchi'ibo]
Aurelia-NOM hope-PRES wakabaki-ACC cook-for
'Aurelia hopes to cook the wakabaki.'

a′.*Aurelia-$Ø_i$ bo'obicha-Ø [a omo_i / au_i wakabak-ta joa-betchi'ibo]
Aurelia hopes for she/herself to cook the wakabaki.'

b. Aurelia-Ø bo'obicha-Ø [wakabak-ta joa-bae-kai]
Aurelia-NOM hope-PRES wakabaki-ACC cook-DESID-CLM
'Aurelia hopes to cook the wakabaki.'

b′. *Aurelia-$Ø_i$ bo'obicha-Ø [a omo_i / au_i wakabak-ta joa-bae-kai]
'Aurelia hopes for she/herself to cook the wakabaki.'

Although the two grammatical constructions in (43) encode the participant's intention for a state of affairs to happen, it seems there is a functional difference between the two. The sequence *–bae-kai* seems to be preferred over the one marked by *–betchi'ibo*; furthermore, *betchi'ibo*-complements closely resemble purposive clause in which the actor does some action or is involved in a process in order for another state of affairs happen. For instance, in (43a) *Aurelia* knows that she will cook the meal but she may be waiting for the ingredients in order to prepare it. The complement marked by *–bae-kai* seems to focus on the participant's personal desire for the event in question to occur. Suppose a group of people is organizing a ceremony and the chief of the group assigns everybody to perform a particular task. In (43b), *Aurelia* is willing to cook the wakabaki and, because it is something that she really wants to do, she hopes that the chief will ask her to do it. More data would be needed here to be sure of the semantic distinction involved.

Because the basic semantic function of the linked unit is to encode the expectation of an unrealized event on the part of the speaker, in Yaqui the dependent unit must be a bare form. In other words, the TAM information coded on the matrix core has scope over the dependent core. This operator dependency is demonstrated by the ungrammaticality of (44a′). Nor can the linked unit take the modal operator *–maachi* 'should'; in order to be grammatically correct, this operator must be added to the main verb as seen in the pair clause of (44b-b′). What is possible for the linked core is to take on an independent temporal adverb (44c).

(44) a. Goyo-Ø bo'obicha-ka [ye'e-bae-kai]
Goyo-NOM hope-PRFV dance-DESID-CLM
'Goyo hoped to dance.'

a′. *Goyo-Ø bo'obicha-ka [ye'e-ka-bae-kai]
'Goyo hoped to have danced.'

b. Goyo-Ø bo'obicha-maachi [ye'e-bae-kai]
Goyo-NOM hope-SHOULD dance-DESID-CLM
'Goyo should expect to dance.'

b′.* Goyo-Ø bo'obicha-Ø [ye'e-maachi-bae-kai]
'Goyo hopes [that he] should go.'

c. Goyo-Ø bo'obicha-Ø [ketgo ye'e-bae-kai]
Goyo-NOM hope-PRES early dance-DESID-CLM
'Goyo expects to dance early tomorrow.'

These complements cannot appear by themselves as an independent clause, since there is no overt reference to the actor and the linked verb cannot carry operator information. For these constructions types, passivization is very restricted. In the appropriate circumstances, only the matrix event can be passivized resulting in an impersonal clause. For instance, in a situation where the *wakabaki* is required for a ceremony, the passive version of (45a) expresses that what is expected is that someone

cooks the wakabaki so that it would be done on time. Notice, however, that the impersonal clause seems to be acceptable only when the linked unit is marked by *–betchi'ibo* (45b) and not with *–bae-kai* (45b´-c).

(45) a. Aurelia-Ø bo'obicha-Ø [wakabak-ta joa-betchi'ibo].
Aurelia-NOM hope-PRES wakabaki-ACC cook-for
'Aurelia hopes to cook the wakabaki.'

b. Bo'obicha-wa-Ø [wakabak-ta joa-betchi'ibo].
hope-PASS-PRES wakabaki-ACC cook-CLM
'(Someone) hopes to cook the wakabaki (for the party).'

b´.?? Bo'obicha-wa-Ø [wakabak-ta joa-bae-kai].
hope-PASS-PRES wakabaki-ACC cook-DESID-CLM
'(Someone) hopes to cook the wakabaki.'

c. Maria-Ø bo'obicha-Ø [sim-bae-kai].
Maria-NOM hope-PRES go-DESID-CLM
'Maria hopes to leave.'

c´.* Bo'obicha-wa-Ø [sim-bae-kai].
'(Someone) hopes to leave.'

The fact that the passive version of a clause like *Maria hopes to leave* in (45c´) sounds odd suggests that impersonal volition clauses involving *bo'obicha* may be tied to cultural situations where the event in question is expected by the general population or a known group of people. That is, by choosing an impersonal and non-emotional clause as in (45b), the speaker makes it clear that she is not expressing her own volition; rather, she is referring to what 'would be good' and to what 'should be done'.

The *–bae-kai* complement type demands that the two cores share a semantic argument, the PSA, which is the controller of the missing syntactic argument in the linked unit. This is the crucial feature for a non-subordinate core combination. The fact that the linked unit does not strictly behave as a core argument, since passivization of the matrix core is restricted, provides another piece of evidence to support the claim that the complement does not hold a structural dependency with respect to *bo'obicha*. Instead, the two units

show operator dependency at the core level, a property that is observed in co-subordination but not in coordination. All these properties together suggest co-subordination at the level of core. The lexical representation for the clause 'Goyo hopes to dance in the party' is illustrated below. Because the *bo'obicha* construction codes both the expression of hope and the speaker's volition to be involved in a state of affairs, the LS contains a main predicate **hope´** taking as a second argument the linked unit **want´** (Goyo, ...). The complement occupies the second argument position of the predicate **want´**. This is an example of a syntactic-semantic mismatch because the logical structure of the complement event *to dance at the party* is a semantic argument of the verb in the matrix core at the semantic level, but it does not serve as a core argument in the syntax.

(46) a. Goyo-Ø bo'obicha-Ø [pajko-po ye'e-bae-kai]
Goyo-NOM hope-PRES party-LOC dance-DESID-CLM
'Goyo hopes to dance at the party.'

b. **hope´** [Goyo, [**want´** (Goyo, [**do´** (Goyo, [**dance´** (pajko, Goyo)])])]]

When the two PSAs are different, the syntactic relation between the two cores also differs. First, the matrix verb can be morphologically added to the basic verb (47a), or it can take a linked unit marked by *–'u* or *–po*. Second, the embedded-PSA is obligatorily expressed in the linked core, which is marked as accusative. Third, the linked unit may be unmarked or marked by the expected suffix *–ne*. In addition, non-coreferential PSA clauses can be easily passivized deriving an impersonal construction, as shown in (47c).

(47) a. Ne enchi yi'i-bo'obicha-n.
1SG:NOM 2SG:ACC dance-hope-PASTC
'I was expecting you to dance (=you did not)'

b. Ne bo'obicha-Ø [enchi yi'i-ne-'u].
1SG:NOM hope-PRES 2SG:ACC dance-EXPE-CLM
'I expect that you would dance.'

c. Bo'obicha-wa-Ø [enchi yi'i-ne-'u].
hope-PASS-PRES 2SG:ACC dance-EXPE-CLM
'It is expected that you would dance.'

That is, in contrast to the self-oriented psych-action interpretation, when *bo'obicha* takes a non-coreferential PSA linked unit marked by *–'u* and *–po*, the whole sentence refers to the speaker's attitude toward another state of affairs in which she is not directly involved. The clauses in (47) convey a propositional attitude interpretation on the part of the speaker with respect to the content of the complement unit. The complement unit is both, a semantic and a syntactic core argument; when the matrix core is passivized, the complement unit serves as a non-PSA direct core argument, i.e., clausal subordination.

6.2.5. Other psych-action predicates. There are other semantic notions that may encode both the speaker's intention, volition, and desire of the event in question to take place or not, or the knowledge on the part of the speaker regarding a state of affairs in which she may be involved or not. Some of these predicates will be briefly mentioned here. Verbs like *dread, dream* and *imagine* also imply some sort of intentional emotion regarding a potential event. Some authors may consider *dream* as a cognitive predicate (Noonan 1985: 118) where the source of knowledge is not the real world (in most cultural contexts). The main verb *teenku* 'dream' encodes this semantic notion in Yaqui. When the PSA of the main core and the PSA of the linked core are the same, the complement is marked by *–kai* (48a-c) and hence the referent in the complement is omitted. When the two PSAs are non-coreferential, the complement is expressed as a nominalized unit marked by the CLM *–(e)m* followed by the accusative suffix *-ta* (48d), which tends to appear embedded in the main clause.[23]

[23] For a detailed discussion on nominalized complements and relative clauses, see chapter 7, § 7.1.

(48) a. Ne [loteria-ta yo'o-ka] teenku-k.
1SG:NOM lottery-ACC win-CLM dream-PRFV
'I dreamed of wining the lottery.'

b. Ne teenku-k [kaba'i-ta etbwa-ria-wa-kai].
1SG:NOM dream-PRFV horse-ACC steal-APPL-PASS-CLM
'I dreamed that (I) had my horse stolen.'

c. Tuuka beako Lupe-Ø teenku-k [Peo-ta kuna-kai].
yesterday night Lupe-NOM dream-PRFV Peo-ACC marry-CLM
'Last night, Lupe dreamed of (herself) marrying Pedro.'

d. Nepo [Peo-ta enchi kuna-ka-m-ta] teenku-k.
1SG:NOM Peo-ACC 2SG:ACC marry-PRFV-CLM-ACC dream-PRFV
'I dreamed of Pedro marrying you!'

These are all core junctures; either a core argument is obligatorily shared, resulting in a non-subordinate nexus in (48a-c), or the nominalized clause serves as a core argument of the matrix predicate *teenku* in (48d); since the nominalized complement is embedded in the main clause, it results in a core subordinate combination. Since the linked verb in a syntactic-like complement marked by *–kai* must be a bare form, it depends on the matrix core for TAM operators. Here, the linked verb must lack a syntactic argument (its PSA). These properties yield core co-subordination. This is another example of the actor control construction, given that the PSA of the matrix core is the controller of the missing argument in the linked core marked by *–kai*.

Predicates of fearing such as *be afraid, be worried,* or *be loathed* imply not only that the person spoken of didn't want to do the action coded in the complement, but also that there is a reaction to the hypothetical intention of performing that action (Wierzbicka 1988: 33). Whereas languages like English may distinguish between co-referential (49a) and non-coreferential (49b) PSAs by means of different complements, Yaqui uses the same construction type. The notion of being afraid about a potential event may be expressed by the stative verb *majae* 'be scared'; when acting as a complement-taking

predicate, *majae* takes a syntactic-like complement marked by *–'u* or *–po* in the post-core slot. The PSAs in the clauses in (49c) and (49e) are co-referential, but not in (49d). Notice that although the two PSAs are coreferential, the non-matrix core must express all its core arguments (i.e., no equi-deletion), and the complement as a whole serves as a core argument of the matrix verb. This is corroborated by the fact that the matrix core cannot take any other accusative NP or resumptive pronoun, as shown by the ungrammaticality in (49f). However, for the purpose of passive voice, any of these complement types serves as the passive-PSA. When the passive suffix is added to the active clause in (49e), the complement remains without change and the construction is understood as an impersonal; this is illustrated in (49e´).

(49) a. The security adviser was afraid to turn in the report.

b. The president was afraid that the security adviser turns in the report.

c. Bempo$_i$ si majae-n [am$_i$ koko-ne-'u].
3PL:NOM a lot be scare-PASTC 3PL:ACC die-EXPE-CLM
'They are afraid to die.'

d. Aurelia-Ø$_i$ si majae-n [ka a$_i$ loteria-ta yo'o-ne-po].
Aurelia-NOM a lot be scare-PASTC NEG 3SG:ACC lottery-ACC win-EXPE-CLM
'Aurelia was afraid she would not win the lottery.'

e. Aurelia-Ø si majae-n [ka enchi loteria-ta yo'o-ne-po].
Aurelia-NOM a lot be scare-PASTC NEG 2SG:ACC lottery-ACC win-EXPE-CLM
'Aurelia was afraid that you would not win the lottery.'

e´. Si majae-wa-n [ka enchi loteria-ta yo'o-ne-po].
a lot be scare-PASS-PASTC NEG 2SG:ACC lottery-ACC win-EXPE-CLM
'(Someone) was afraid that you would not win the lottery.'

f. * Bempo$_i$ a$_j$ si majae-n [am$_i$ koko-ne-'u]$_j$
'They are afraid of it, that they will die.'

Regardless of whether the two PSAs are co-referential or not, the linked unit expresses all its syntactic core arguments. Considering that the complement unit

expresses an attitude of fear or concern that the complement event will be or has been realized, the linked verb may be unmarked or be limited to the expected suffix *–ne*, but never by the tense suffix *–(ka)n*, meaning that the units involved in these constructions are cores rather than clauses. Since the complement clause is not embedded in the matrix core but rather it is placed outside, in the post-core slot, the matrix core and the dependent core establish a clausal subordinated combination.

Verbs like *forget* and *remember*, on the other hand, may be interpreted in two senses: as a mental disposition to act on the part of the speaker, i.e. psych-action predicate, and as a mental state coding the knowledge or beliefs that a person has in their mind from before, i.e. cognition or propositional attitude predicate (Van Valin and Wilkins 1993). These two interpretations are coded in English by different complement types: the volitional and self-oriented is expressed by a 'subjectless' *to*-complement (50a), whereas the cognition interpretation tends to be represented by a *that*-complement (50b). In Yaqui, however, both interpretations are encoded by the same syntactic-like complement marked by *–'u*.

(50) a. Pedro remembered/forgot to lock the door.

b. Pedro remembered/forgot that Maria did not lock the door.

c. Empo au$_i$ wawaate-k [u-me jiosia sewa-m enchi
2SG:NOM 3SG-DIR remember-PRFV the-PL paper flower-PL 2SG:ACC

ya'a-ne-'u]$_i$
make-EXPE-CLM
'You remembered to do the paper flower.'

d. Flor-Ø au$_i$ wawaate-k [u-me jiosia sewa-m enchi
Flor-NOM 3SG:DIR remember-PRFV the-PL paper flower-PL 3SG:ACC
ya'a-ka-'u]$_i$
make-PRFV-CLM
'Flor remembered that you did the paper flower.'

In English, the two semantic interpretations are coded by two different juncture-nexus relation. Roughly speaking, the psych-action interpretation in (50a) is characterized by the

following morpho-syntactic properties: (i) the two events share a core argument and so the linked unit is missing a syntactic core argument, and (ii) the linked unit is dependent upon the matrix predicate for the expression of the relevant operator at the core level. That is, the linked unit is a core, rather than a clause. These properties together yield a core co-subordination juncture-nexus type which in English is represented by the *to*-infinitive construction. The cognitive interpretation in (50b) involves the embedding of the entire finite clause as a core argument; hence this clause is marked by the CLM *that*, can be independently modified by operators, and obligatorily expresses all its core arguments. That is, the linked unit is a clause. This yields asymmetrical core subordination because a smaller unit (the core) takes a larger unit as a core argument. This syntactic relation is coded by a *that*-clause in English.

In Yaqui, both semantic interpretations are coded by the same type of complement which is characterized by the following defining properties: (i) regardless of whether the two PSAs are the same or not, the non-matrix core obligatorily expresses all its syntactic core arguments; (ii) the complement is marked by *–'u;* (iii) the complement appears extraposed to the right but, in contrast to the examples discussed so far, there is a pause between the main core and the linked unit, i.e. right-detached position; and (iv) the matrix core takes a resumptive pronoun as a core argument co-indexed to the linked unit. The two complements differ, however, in terms of operator dependency: the psych-action sense requires the non-matrix verb to be unmarked or be marked by the expected suffix *–ne* (50c), whereas the cognitive interpretation allows the non-matrix verb to be marked by any TAM operator (50d). Because this complement type is the one that encodes the content of a

proposition related to mental predicates, this construction type will be discussed in detail in the next chapter.

6.2.6. Juncture-nexus relations for psych-action predicates. When the actor expresses her volition and intention regarding a state of affair, it is encoded by the desiderative suffixes *-bae* and *–pea*. Although the event coded by the basic verb is semantically an argument of **want´**, it does not behave as a syntactic core argument. Instead, the two nuclei join together in a nuclear co-subordinate combination. For the *promise*-type of predicate, the actor of the main event is also the actor of the non-matrix event; because the actor is overtly expressed once in the clause, we are dealing with an actor control construction. In contrast to the causative and jussive predicates, when the suffix *-wa* is added to a *-roka* clause, the accusative NP must keep its status of a non-PSA core argument resulting in an impersonal, rather than a passive, construction. As VV&LP (p. 545) point out, the fact that 'subject'-controlled constructions cannot be passivized is due because the actor functions as an oblique peripheral constituent, not a core argument, in a language like English, e.g. **Sandy was promised (by Robin) to help with the party*, and consequently there is no core argument controller in the matrix core. This is know in the literature as the 'Visser's generalization'. In Yaqui, desiderative and promise predicates are all actor-control constructions, since they encode a future-oriented event in which the speaker is necessarily involved. Although the passive suffix *–wa* may be added to these predicates and, consequently, the actor of the two events is omitted, the resulting construction must be impersonal and never passive, i.e. none of the remaining accusative core arguments can serve as the passive-PSA. The fact that the two units must share all

operators at the core level indicates that *–roka*'s constructions are expressed by the core co-subordinated linkage type.

The notion of *hope* or *expect* is expressed by different linkage types depending on whether or not the PSA of the matrix core is the same as the PSA of the linked core. When the two cores do share the PSA, the linked unit must be marked by the general purposive postposition *–betchi'ibo* or the desiderative sequence *–bae-kai*; the linked core must be unmarked for operators and must lack a syntactic core argument, its PSA. This actor control construction is realized by core co-subordination. When they do not share the PSA, the psych-action predicate may take a linked unit marked by *–'u*; because the complement unit is outside the core, it establishes a clausal subordinate relation with its matrix predicate. The same linkage type is observed for *majae* 'be afraid'.

To express the notion of *dream*, the language structurally distinguishes when the two cores share a syntactic argument, the PSA, in which case the complement is marked by *–kai,* from non-coreferential-PSAs, where the complement consists of a nominalized unit expressing all its syntactic arguments. These constructions are all core junctures; either a core argument is obligatorily shared resulting in a co-subordinate nexus, or the nominalized clause serves as an argument of the matrix core yielding core subordination. A simplified representation for *Lupe dreamed of (herself) marrying Pedro* (48c) is given in Figure 6.1. The representation for *I dreamed of Pedro marrying you* (48d) is shown in Figure 6.2.

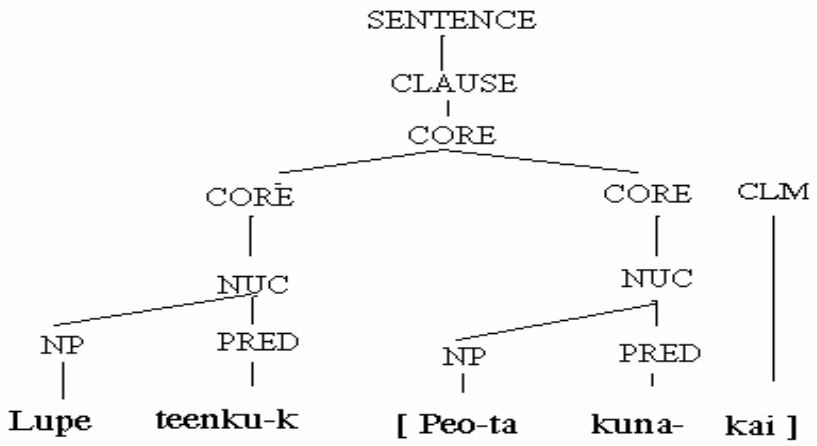

Figure 6.1: Core co-subordination for the clause
Lupe dreamed of (herself) marrying Pedro in (48c)

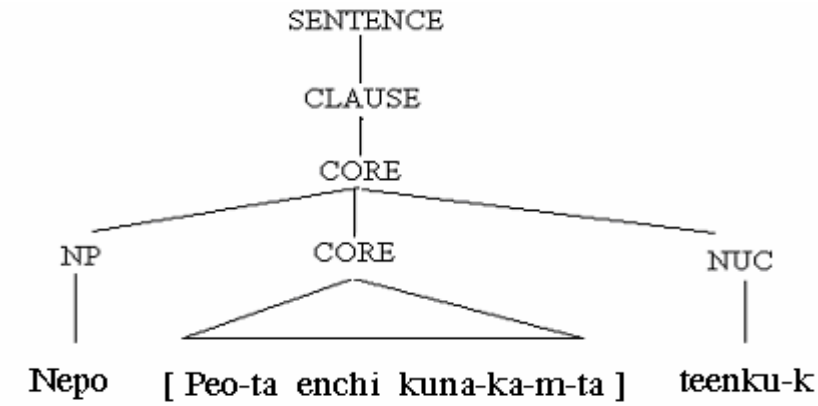

Figure 6.2: (Symmetrical) core subordination for the clause
I dreamed of Pedro marrying you in (48d)

6.3 Purpose clauses

The last section of this chapter analyzes purpose clauses, a semantic situation that has been traditionally analyzed as adverbial subordination. Much like reason constructions, purpose clauses tend to provide explanations for the occurrence of a given state or action; the two construction types differ in that purpose clauses express a motivating event which must be unrealized at the time of the main event, while reason clauses express a motivating event which may be realized at the time of the main clause event (Thompson and Longacre 1985: 185). This semantic distinction is overtly marked in Yaqui. Whereas reason clauses uses the particle *bweituk* 'because' conjoining two independent clauses

(51a), purpose clauses are similar to volitional predicates in that they are marked by either *–bae-kai* or *–(ne)-betchi'ibo*.

(51) a. Peo-Ø Vicam-meu siika bweituk aapo kaba'i-ta jinu-n.
Peo-NOM Vicam-PL:DIR go:PRFV because 3SG:NOM horse-ACC buy-PASTC
'He went to Vicam because he bought a horse.'

b. Peo-Ø Vicam-meu siika [kaba'i-ta jinu-bae-kai]
Peo-NOM Vicam-PL:DIR go:PRFV horse-ACC buy-DESID-CLM
'He went to Vicam to buy a horse (= wanting to).'

c. Peo-Ø Vicam-meu siika [kaba'i-ta jinu-ne-betchi'ibo]
Peo-NOM Vicam-PL:DIR go:PRFV horse-ACC buy-EXPE-FOR
'He went to Vicam to buy a horse.'

The main differences between the two constructions is, first, that the verb in a purpose clause is a basic form lacking any TAM marker (except for *–ne* when followed by *–betchi'ibo*), while the verb in a reason clause is a finite verb form. Second, whereas the reason clause contains a nominative NP serving as the PSA, the purpose clause lacks this syntactic argument when coreferential with the matrix PSA.

6.3.1 Co-referential PSA purpose clauses. Many languages have distinct syntax for purpose clauses whose subject is the same as the main clause as opposed to those whose subject is different (Thompson and Longacre 1985: 187), and Yaqui is an example of such a language. First at all, the most common strategy to express a co-referential PSA purposive construction uses the purposive suffixes *–se* /*-bo*. D&C (p. 295-296) suggest that the pair of Yaqui purposive suffixes *-se* (sg) and *–bo* (pl) is probably related to both the singular form of the suppletive intransitive verb *siime* 'to go' and the word *bo'o* 'road', which may be the nominalization of an older plural form of the verb 'to go', c.f. Cora *–hu'u* 'to go (pl)'. When attached to a basic (unmarked) verb form, *-se* and *-po* indicate that the implied motion is undertaken for the purpose of carrying out the action

indicated by the basis verb, similar to the English clauses *go close the door* and *come see me soon*. See the following examples.

(52) a. Joan-Ø sinto-ta aabo joo-se-Ø.
Joan-NOM belt-ACC here make-PURP(SG)-PRES
'Juan comes here to make a belt.'

b. U-me o'ow-im sinto-ta aabo joo-bo-Ø.
the-PL man-PL belt-ACC here make-PURP(PL)-PRES
'The men come here to make a belt.'

In the examples in (52), there are two nuclei elements taking a single set of core arguments. The two nuclei must share all TAM operators, which are added at the end of the complex predicate. Interestingly, when a clause involving either of these purpose suffixes takes the perfective *–k,* it does not refer to a realized event undertaken in the past, but to a bounded whole event. In order to express a past event, the past continuative suffix *–kan* must be added. See the examples below.

(53) a. Ne enchi bachi-ta nu'u-se-k.
1SG:NOM 2SG:ACC corn-ACC take-PURP(SG)-PRFV
'I am going to bring you corn.' /*I went to bring you corn.

b. Ne enchi bachi-ta nu'u-se-kan.
1SG:NOM 2SG:ACC corn-ACC take-PURP(SG)-PASTC
'I went to bring you corn.'

In this purposive construction type, there are two nuclei and each of these units expresses a stage of a single state of affairs, e.g., the implied motion and the intended event. As a kind of phase predicates, actions treated as stages of a single event are going to be closer to each other semantically than actions treated as distinct events. They also involve a closer temporal relationship between the two events (i.e., the temporal hierarchy), as well as a stronger actor's intention to carry of carrying out the action indicated by the basis verb (i.e., the participants' mental disposition hierarchy). The

morphologically derived structure is, then, an extension of this closer semantic cohesion. Since the two units take a single set of core arguments and must share operators at the level of nucleus, we are dealing with nuclear co-subordination.

Furthermore, the language shows another very productive syntactic construction to express purpose clauses. Compare the following pair of clauses. In the example in (54a) the two cores share the PSA; in (54b) the two cores show non-coreferential PSAs.

(54) a. U o'ou-Ø bwite-k [maso-ta me'e-bae-kai]
the man-NOM run-PRFV deer-ACC kill-DESID-CLM
'The man ran to kill the deer (=wanting to).'

a′. U o'ou-Ø bwite-k [maso-ta me'a-betchi'ibo]
the man-NOM run-PRFV deer-ACC kill-CLM
'The man ran to kill the deer.'

b. U maso-Ø bwite-k [u-ka o'ou-ta ka me'e-ne-betchi'ibo]
the deer-NOM run-PRFV the-ACC man-ACC NEG kill-EXPE-CLM
'The deer ran so the man wouldn't kill it.'

b′. * U maso-Ø bwite-k [u-ka o'ou-ta ka me'e-bae-kai]
'The deer ran so the man wouldn't kill it (= not wanting to be killed).'

In (54a), *u o'ou* 'the man' is the PSA of both the matrix core *bwite* 'run' and the non-matrix core *me'e* 'kill'; this shared argument must be syntactically absent within the linked unit marked by *–bae-kai*, i.e. actor control. In (54b), *u maso* 'the deer' is the PSA of *bwite* 'run' but the undergoer of *me'e* 'kill', in which case the accusative NP *uka o'outa* 'the man' acts as the actor of the linked core meaning 'kill'; because the PSAs are non-coreferential, the clause is marked by *–(ne-)betchi'ibo*. Although coreferential-PSAs may be indicated by *–betchi'ibo* yielding a general purposive clause (54a′), non-coreferential PSAs cannot be indicated by *–bae-kai* as demonstrated by the ill-formed clause in (54b′). Let's first analyze coreferential-PSA purpose clauses.

Any activity predicate can occur with a purposive adjunct to indicate that the verb action of the main clause is performed in order to ensure that the event or state of the

purpose unit comes into being. Among the expected patterns for coreferential-PSA purpose clauses is an infinitive verb form if the language has one (e.g., English, Spanish, and Kinyarwanda); otherwise a verb in a special mood or aspect is used. The last pattern is observed in Yaqui. When the PSA of the matrix core and the PSA of the linked unit are the same, the linked unit is systematically marked by the desiderative sequence *–bae-kai*. Compare the following self-oriented *wanting*-pattern.

(55) a. Ne kaba'i-ta jinu-bae-Ø.
1SG:NOM horse-ACC buy-DESID-PRES
'I want to buy a horse.'

b. Ne bo'obicha-Ø [kaba'i-ta jinu-bae-kai]
1SG:NOM hope-PRES horse-ACC buy-DESID-CLM
'I hope to buy a horse (=wanting to).'

c. Ne Vicam-meu siika [kaba'i-ta jinu-bae-kai]
1SG:NOM Vicam-DIR go:PRFV horse-ACC buy-DESID-CLM
'He went to Vicam to buy a horse (=wanting to).'

All these instances express a participant's intentions: the PSA does some action or is involved in a process with the intention of being involved in another state of affairs. In contrast to the mental disposition toward *buying a horse* in (55a, b), the purpose clause in (55c) expresses the participant's intention to realize the intended event by means of an antecedent action, e.g., *going to Vicam with a specific purpose in mind.* In other words, the content of the linked unit signals the purpose of the actor for acting as they did in the event coded by the main clause. Because this semantic relation implies personal volition and intention, it is restricted to human participants. When an inanimate entity serves as a PSA, the clause must be expressed by the general purposive postposition *–betchi'ibo* as in (56b). That is, *-bae-kai* not only requires coreferential-PSAs but also animate entities. Notice that purpose constructions in Yaqui usually appear in the post-core slot.

(56) a. Lili-Ø wikia-ta jaiwa-Ø [kaba'i-ta suma-bae-kai]
Lili-NOM rope-ACC look-PRES horse-ACC tie-DESID-CLM
'Lili is looking (for) a rope to tie the horse (=wanting to).'

b.* Ij wikia-Ø tui-ne [kaba'i-ta suma-bae-kai]
'This rope will be good to tie the horse.'

c. Ij wikia-Ø tui-ne [kaba'i-ta suma-betchi'ibo]
this rope-NOM good-EXPE horse-ACC tie-for
'This rope will be good in order to tie the horse.'

When the two PSAs are the same, they are mentioned once and appear as a direct core argument of the matrix core; hence the linked core lacks a syntactic argument. That is, *Lili* is semantically an argument of both cores in (57a), while the other arguments are coded as arguments of particular nuclei, e.g. *Vicammeu* 'to Vicam' is a syntactic and semantic argument of *yepsa* 'arrive' only, whereas *ringo-nok-ta* 'English (lit. gringo's word)' and *ne* 'me' are arguments of *majta* 'teach' only. The second mention of the PSA is avoided, even as a pronominal form (57b).

(57) a. Lili-Ø Suichi-u yepsa-Ø [ringo-nok-ta ne majta-bae-kai]
Lili-NOM Vicam-DIR arrive-PRES gringo-word-ACC 1SG:ACC teach-DESID-CLM
'Lili comes to Vicam to teach me English.'

b.* Lili-$Ø_i$ Suichi-u yepsa-Ø [a_i / au omo_i ringo-nok-ta ne majta-bae-kai]
'Lili comes to Vicam in order for her to teach me English.'

Similar to the complement-taking predicate *bo'obicha*, the purpose clause refers to a potential, future-oriented event. One would expect, therefore, that this non-matrix predicate would be coded as an unrealized predicate suggesting that they depend on the information marked in the matrix core. That is, both predicates must have the same tense markers, as indicated on the first verb of the sequence. It does not mean, however, that the matrix and non-matrix core cannot be independently modified by temporal adverbs.

In the clause in (58c), for instance, the adverb *yooko* 'tomorrow' modifies only the event coded by the linked core, e.g., *Goyo wanted to paint the masks tomorrow'*.

(58) a. Te saja-kan [ka yi'i-bae-kai].
1PL:NOM go:PASTC NEG dance-DESID-CLM
'We were leaving not wanting to dance.'

b. Aurelia-Ø yejti-ne [Iban-ta bit-bae-kai].
Aurelia-NOM stand-EXPE Ivan-ACC see-DESID-CLM
'Aurelia will wake up to see Ivan.'

c. U-me o'owim juya-u saja-k [mas-ta me'e-bae-kai].
the-PL man-PL wood-DIR go-PRFV deer-ACC kill-DESID-CLM
'The men went into the wood to kill a deer.'

b. Goyo-Ø brocha-m waata-Ø [yooko maska-m yooka-bae-kai].
Goyo-NOM brush-PL want-PRES tomorrow mask-PL paint-DESID-CLM
'Goyo wants some brushes to paint the mask tomorrow.'

6.3.2 Not-necessarily co-referential-PSA purpose clauses. When the PSA of the main core and the PSA of the linked units are non-coreferential, the general postposition *-betchi'ibo* is used. This construction type indicates that the matrix PSA performs an action or is involved in a process such as some other participant, or the actor and some other participant together, may realize the intended state of affairs. In the examples above, the complement marked by *-betchi'ibo* indicates that the nominative NP *Lili* and *Tibu*, respectively, functions as a non-actor within the linked core. Because the whole clause refers to an intended event, the linked verb is usually marked by *–ne*.

(59) a. Lili-Ø Suichi-u yepsa-Ø [Jiak-nok-ta ne
Lili-NOM Vicam-DIR arrive-PRES Yaqui-word-ACC 1SG:ACC

a majta-ne-betchi'ibo]
3sg:ACC teach-EXPE-CLM
'Lili comes to Vicam in order that I teach her Yaqui.'

b. Tibu-Ø Fermin-ta bicha-k [beemela tractor-ta jinu-ne-betchi'ibo]
Tibu-NOM Fermin-ACC see-PRFV new tractor-ACC buy-EXPE-for
'Tibu saw Fermin in order to (Fermín) buy a new tractor (= to go together).'

In addition, a *betchi'ibo* clause is used to express a situation where an object is good for some other event, as the regular purposive phrase 'X is good for Y'. In this context, the purpose phrase systematically follows the object, unless it is a heavy clause in which case it appears at the end as in (60d). Interestingly, the modal operator *–ne* is completely disallowed in this context.

(60) a. U aaki-Ø bakot jujaria-ta-betchi'ibo tu'i-Ø.
the pitaya-NOM snake bite-ACC-for good-PRES
'Pitahaya plant is good for a snake's bite.'

b. Ini'i abali-Ø noji-betchi'ibo tu'i-Ø.
this tender corn-NOM tamal-for good-PRES
'This tender corn is good for the tamales.'

c.* Ini'i abali-Ø noji-ne-betchi'ibo tu'i-Ø.
'This tender corn would be good for the tamales.'

d. I-me tepua-m tu'i-Ø [bwe'ere into ilichia juya-m chukta-betchi'ibo].
this-PL axe-PL good-PRES big:PL and little tree-PL cut-CLM
'These axes are good to cut big and little trees.'

6.3.3 Juncture-nexus relations for purpose clauses. To summarize, any activity predicate can occur with a purposive suffix or purposive adjunct to indicate that the verb action of the main clause is performed in order to ensure that the event or state of the purpose unit comes into being. The two purpose clauses correlate with an unrealized situation since the verb in the linked unit is in a non-finite form, meaning that it depends on the operator information coded in the matrix core. When the two events share the PSA, the linked units closely parallel that of the actor control relation observed with the psych-action predicate *bo'obicha* 'hope'; in both situations the PSA is involved in a mental disposition or an action *wishing* that the event coded by the linked clause would take place. This is a core juncture because there is an obligatory shared core argument (the PSA); the difference between plain purposive clauses and *bo'obicha* is that the latter but not the former is

necessary a complement-taking predicate such that the purposive complement cannot be replaced by a pronominal argument, but it is in the case of *bo'obicha*, e.g., *I expected to leave early ~ I expected it*. When the two events do not share the PSAs, the linked core overtly codes its PSA and is marked as accusative.

In Yaqui, purpose clauses tend to avoid passivization. The passive suffix may be added to the main core of a non-coreferential-PSA purpose clause only when referring to ceremonies or cultural events where the actor's reference is well known or easily predictable. Compare the resulting impersonal clauses in (61a′) and (61b′).

(61) a. Goyo-Ø wakas-ta me'e-bae-Ø [wakabak-ta ya'a-betchi'ibo
Goyo- NOM cow-ACC kill-DESID-PRES wakabaki-ACC make-CLM

lutu-pajko-betchi'ibo]
mourning-party-for
'Goyo will kill the cow in order to cook wakabaki for the mourning party.'

a′. Bwepul wakas-Ø me'e-ba-wa-Ø [wakabak-ta ya'a-betchi'ibo
one cow-NOM kill-DESID-PASS-PRES wakabaki-ACC make-CLM

lutu-pajko-betchi'ibo]
mourning-party-for
'A cow will be killed in order to cook wakabaki for the mourning party.'

b. Peo-Ø tractor-ta jinu-k [ne a tekipanoa-ne-betchi'ibo]
Peo-NOM tractor-ACC buy-PRFV 1SG:ACC 3SG:ACC work-EXPE-for
'Pedro bought a tractor in order for me to work with it.'

b′. ?Tractor-ta jinu-wa-k [ne a tekipanoa-ne-betchi'ibo]
tractor-ACC buy-PASS-PRFV 1SG:ACC 3SG:ACC work-EXPE-for
'It was bought a tractor in order for me to work with it.'

b′.? Tractor-Ø jinu-wa-k [ne a tekipanoa-ne-betchi'ibo]
tractor-ACC buy-PASS-PRFV 1SG:ACC 3SG:ACC work-EXPE-for
'The tractor was bought in order for me to work with it.'

The passive voice sounds odd when added to a coreferential-PSA clause, as illustrated below. It suggests that, although both refer to the participant's mental disposition

for the intended event to be realized, a *–bae-kai* construction requires the expression of the participant who will perform the event in question

(62) a. Goyo-Ø brocha-m wata-Ø [maska-m yooka-bae-kai]
Goyo-NOM brush-PL want-PRES mask-PL paint-DESID-CLM
'Goyo wants some brushes to paint the mask.'

a′.* Brocha-m wata-wa-Ø [maska-m yooka-bae-kai]
'(Someone) wants brushes to paint the mask.'

None of these constructions are semantically or successfully implicative; that is, the occurrence of the main event does not necessarily entail the state of affairs coded in the linked event. This is demonstrated because the linked core can later be negated without altering the core notion of the participant's intention. In (63), *Tibu* and *Fermín* saw each other wanting to buy a tractor, but for one reason or another, they could not buy them.

(63) a. Tibu-Ø Min-ta bicha-k [beeme'e tractor-m jinu-bae-kai]
Tibu- NOM Fermin-ACC see-PRFV new tractor-PL buy-DESID-CLM

bweta Tibu-Ø kaa am aa jinu-k.
but Tibu-NOM NEG 3PL:ACC ABLE buy-PRFV
'Tibu met Fermín wanting to buy new tractors, but Tibu was not able to buy them.'

b. Tibu-Ø Min-ta$_i$ bicha-k [beeme'e tractor-m a$_i$
Tibu- NOM Fermin-ACC see-PRFV new tractor-PL 3SG:ACC

jinu-ne-betchi'ibo] bweta Min-Ø kaa am aa jinu-k.
buy-EXPE-CLM but Fermin-NOM NEG 3PL:ACC ABLE buy-PRFV
'Tibu met Fermín$_i$ in order for him$_i$ to buy new tractors, but Fermín was not able to buy them.'

That the main core and the linked unit may be independently modified by temporal adverbs corroborates the claim that purpose clauses are lower in the temporal hierarchy that defines the interclausal semantic relations. Here, there is a sequential temporal relationship between the two cores: the participant's intention to realize some state of affairs by means of an antecedent action. Also, the two constructions refer to the

speaker's intention for the event in question to be realized, the higher status within the participant's mental disposition hierarchy. The difference between the two may be established, presumably, in terms of agentivity control: for coreferential-PSA purpose clauses, the two events are under the actor's control because it is the same, whereas for non-coreferential-PSA clauses, only the event expressed by the main core is under the actor's control. In other words, whereas coreferential-PSA clauses expressed the speaker's own intention to realize or be involved in another state of affairs, non-coreferential-PSA clauses expressed a situation where the speaker is not involved. Evidence for a non-subordinate nexus type for this kind of constructions comes from operator dependency. In (63a), the deontic modal *-maachi*, a deontic core operator, seems to modify both cores; presumably, what 'Lupe' should do is both buy the meat and want to cook the wakabaki. In (63b), in contrast, *-maachi* has scope only within the first core; 'Lupe' should buy the meat, but they are not obligated to cook the wakabaki. This follows from the fact that a deontic modal operator can modify the relation between one actor and a sequence of cores denoting actions by the same participant, whereas it cannot modify relationships between the actor and verbs in distinct cores referring to actions by distinct participants. This yields core co-subordination for coreferential-PSA purposive clauses, and core coordination for non-coreferential-PSA purpose clauses.

(64) a. Lupe-Ø wakas-ta jinu-maachi [wakabak-ta ya'a-bae-kai]
Lupe-NOM meat-ACC buy-SHOULD wakabaki-ACC make-DESID-CLM
'Lupe should buy meat to cook the wakabaki (=wanting to).'

b. Lupe-Ø wakas-ta jinu-maachi [bempoim wakabak-ta
Lupe-NOM meat-ACC buy-SHOULD 3PL:ACC wakabaki-ACC

ya'a-ne-betchi'ibo]
make-EXPE-CLM
'Lupe should buy meat in order for them to cook the wakabaki.'

6.4 Summary

This chapter has explored phase, psych-action and purpose semantic relations. The fact that the semantic notions of phase, personal volition, intention, and desire are expressed through morphological structures rather than syntactic means is not rare cross-linguistically, since many languages indicate these close semantic notions by lexicalized verb forms when a coreferential relation exists between notional subjects (Noonan 1985:123). Because these semantic notions core relations at the top of the temporal, spatial, participant's mental disposition semantic hierarchies, they are the first candidates to undergo a grammaticalization process, and that is what happens in Yaqui. These grammaticalized forms are not a counterexample to the claims of the IRH proposed by RRG. Indeed, the fact that the closer semantic relations at the top of the hierarchy are realized by morphological means corroborates not only the idea that the more two events necessarily share an argument, such as their PSA, the more likely they are to be constructed as a single event, but more precisely supports the claim that the stronger the semantic relation among the events, the tighter the morpho-syntactic bond between the units. Thus, clauses coding phase and personal desires are an instance of nuclear co-subordination; indeed, they behave as a single clause for the purpose of clause linking.

The psych-action predicate *bo'obicha* 'hope' behaves very similarly to the purposive clauses. For both types of semantic notions, Yaqui marks linked complement units with the sequence *–bae-kai* when the PSA of the matrix core is the controller of the obligatorily missing argument in the linked core. The morpheme *–bae* indicates the speaker's personal desire and intention regarding another state of affairs, whereas *–kai* is a 'same-PSA' linkage marker; the linked verb must be unmarked for operators. Together these properties indicate co-subordination at the level of core. When the two PSAs are

non-coreferential, the linked unit is marked by *–'u*, the linked verb can be unmarked or be marked by *–ne*, and each verb takes its own set of core arguments, but the linked core as a whole functions as a syntactic argument of the matrix predicate 'hope'. Since the clausal complement is outside the core, the juncture-nexus relation is clausal subordination.

Furthermore, purposive clauses can be realized by core co-subordination when the PSA of the main core and the PSA of the intended event are the same, and hence the 'subjectless' linked unit is marked by *–bae-kai*; or it can be realized by core coordination when the PSA of the main core is not necessarily coreferential to the PSA of the linked verb, in which case the linked unit is marked by *–(ne)-betchi'ibo*.

These different kinds of complement structures cannot indiscriminately occur in any construction. For instance, verbs of volition and promise cannot be followed by *–bae-kai*. More precisely, these syntactic complement types correlate with the fact that the degree to which the complement clause approximates an independent clause is representative of the degree of independence with which it is construed.