

## Chapter 7

### PERCEPTION, MENTAL AND SAYING PREDICATES

This chapter examines the facts relating to perception, propositional attitude, cognition, and discourse complement-taking predicates. All these predicates allow the non-actor direct core argument to be filled out by an NP or by a complement clause.

- (1) a. I heard Juan.  
a'. I heard that Juan left early.
- b. I believe you.  
b'. I believe that Juan lost his wallet.
- c. I know the answer.  
c'. I know that Juan found his wallet.
- d. I told you a lie.  
d'. I told you that Juan didn't do the homework.

Perception, propositional attitude, and cognition predicates represent mental states of affairs. These verbs can be organized into various semantic fields in terms of the nature of the event which each verb represents, such as intellect, emotion, volition, sensation, verbal behavior, etc. (Horie 1985). Roughly speaking, perception verbs are those which denote states or activities in which one comes to have knowledge of an occurring event directly through the senses, e.g. *see, look at, watch, hear, listen to, feel, touch*. Propositional attitude verbs are those which show the degree of certainty of a concept formed in the mind, the expression of a participant's attitude, judgment or opinion regarding a state of affairs; this group covers a wide range of conceptual activities from imagination to belief, e.g. *think, consider, suppose, imagine, believe, suspect*. Cognition verbs are those which denote the presence or absence of information in the mind, information which gives knowledge in the form of facts, e.g. *know, understand, realize,*

*recognize, remember, forget*. Each of these semantic verb classes takes different complement constructions as core arguments, from noun phrases and phrasal objects to clauses. Like many other languages, Yaqui presents a number of ways to express the complement of these predicates. I will first analyze the complement types of perception verbs.

### **7.1 Perception predicates**

In many languages, perception verbs can take different complement forms with corresponding differences in meaning (Kirsner and Thompson 1976; Van der Auwera 1985; Horie 1985, 1990; Dik and Hengeveld 1991). In English, for instance, verbs denoting perception may take either a bare infinitive complement (2a), a participial complement (2b), or a fully tensed complement (2c).

- (2) a. I saw Maria paint the mask  
b. I saw Maria painting the mask  
c. I saw that Maria painted the mask

Kirsner and Thompson (1976: 205) propose that many properties of perception verb complements may be attributed to pragmatic inferences from (i) knowledge of or assumptions about the nature of the event referred to by the complement, and (ii) the semantic oppositions between the particular meanings signaled in any given case and the other meanings available. They suggest that sensory verbs involving bare infinitive and participial complements communicate a direct perception of a situation, whereas verbs taking a *that*-clause communicate an indirect report, or a deduction about, a situation. In this vein, Horie (1990) suggests that the notion of epistemic *directness/indirectness* distinguishes between directly/physically perceived phenomena (e.g. those seen, heard, felt), and indirectly/mentally perceived phenomena (e.g. those believed, known, guessed,

understood, inferred). Accordingly, the *that*-clause represents an abstractly perceived action, state or event, whereas the bare infinitive and the present participle represent a directly perceived situation which is either terminated or occurring simultaneously with the act designated by the main verb. By exploring the kind of entity that the complement refers to, Dik and Hengeveld (1991) propose four readings of perception verbs:

(i) Immediate perception of individuals: the immediate perception of one individual by another individual, e.g. *I saw Maria at the party.*

(ii) Immediate perception of state of affairs: the immediate perception of an event, state or action by an individual. The state of affairs of the complement has to be interpreted as simultaneous with the perception verb, e.g. *I saw her dancing at the party.*

(iii) Mental perception of propositional content: the acquisition of knowledge through one of the senses by an individual, e.g. *I saw that Maria had danced at the party.*

(iv) Reception of the propositional content of a speech act: it occurs with hearing and seeing (in the sense of reading) only, and concerns the reception of the content of a speech act by an individual, a propositional content brought forward by a third party e.g. *Pedro heard that Maria will probably recite Neruda's poem.*

The distinction between immediate perception of state of affairs and mental perception correlates with direct and indirect perception, respectively. What is new is the fourth reading. They argue that mental perception of a propositional content and reception of the propositional content of a speech act differ, so that in the latter the perceived entity is of linguistic nature, i.e., some sort of evidential, whereas in the former it is not. For instance, the clause *I heard that Jane has caught a cold* may be interpreted in two ways: (i) the speaker deduces Jane's having caught a cold from, for example, the

sound of her voice. In this case, the clause can be paraphrased as ‘I infer that Jane has caught a cold;’ (ii) the speaker has been told by someone else that Jane has caught a cold. In this case, the clause can be paraphrased as in ‘I have been told that Jane has caught a cold.’ In both cases the complement represents a propositional content, but in the former this propositional content originates with the speaker, whereas in the latter it originates with someone else (Dik & Hengeveld 1991: 247).

The field-specific components of perception verbs are *sight*, *hearing*, *touch*, *taste* and *smell*. These predicates may be used as activities, referring to an unbounded process that is consciously controlled by a human agent, or as states, coding a non-controlled process. Viberg (1984) also proposes that it is also possible to draw a distinction between states, e.g., *I saw the painting on the wall*, and stative phrase, e.g., *the painting looks good* (in Viberg’s terminology), whereas the former is an experiencer-based verb, while the latter takes the perceived entity as a ‘subject’. In Yaqui, the active and stative versions of *sight* and *hearing* are expressed by the same lexical item. However, if the completive suffix *-su* ‘finish’ is added, the perception verb is definitely interpreted as an activity. Compare the stative and activity version for *sight* in (3a-b).

- (3) a. Min-Ø enchi parke-po bicha-k.  
 Min-NOM 2SG:ACC park-LOC see-PRFV  
 ‘Fermín saw you in the park.’
- b. Maria-Ø telenovela-m bichu-k  
 Maria-NOMS soap opera-LOC see:FINISH-PRFV  
 ‘Maria looked at the soap opera (from the beginning to the end)’
- c.\* Min-Ø enchi parke-po bichu-k.  
 ‘\*Fermin looked at you in the park’

The *hearing* sense is expressed by *jikka* when referring to a state predicate, and by *jia* when referring to a stative phrase, e.g., X sounds good. Again, the addition of *-su* to the

state explicitly claims that the perceiver is responsible for the perception. Compared to (4a), in (4c) Aurelia herself actively directs her attention to what is heard on the radio.

- (4) a. Aurelia-Ø radio-ta jikka-k.  
Aurelia-NOM radio-ACC hear-PRFV  
'Aurelia heard the radio (music).'
- b. Aurelia-Ø tata paare-ta jikkai-su k.  
Aurelia-NOM priest-ACC hear-FINISH-PRFV  
'Aurelia listened to the priest (conscientiously).'
- c. Aurelia-Ø radio-ta jikkai-su k.  
Aurelia-NOM radio-ACC hear-FINISH-PRFV  
'Aurelia listened to the radio (the news).'
- d. U labeen-Ø tui jia-Ø.  
The violin-NOM pretty sound-PRES  
'The violin sounds good.'

The activity/state verb *smell* is expressed by *jupta* (5a) and the stative phrase by *juuba* (5a'). For *taste* and *touch*, the language has the activity/state forms *ji'ibwe* (5b) and *ine'a* (5c), respectively, neither of which can be used within a stative phrase. Instead, the adjective *kia* 'delicious, tasty' (5b') and *bwalko* 'soft' (5c') must be used.

- (5) a. Juanita-Ø seewa-ta jupta-k  
Juanita-NOM flower-ACC smell-PRFV  
'Juanita smelled the flower.'
- a'. U seewa-Ø usyo'oli-si juuba-Ø.  
the flower-NOM pretty-INTENS smell-PRES  
'The flower smells pretty good.'
- b. Lupe-Ø jaibu wakabak-ta ji'ibwe-k.  
Lupe-NOM already wakabaki-ACC taste-PRFV  
'Lupe already tasted the wakabaki.'
- b'. U wakabak-Ø kia.  
the wakabaki-NOM delicious  
'The wakabaki is/tastes delicious.'
- c. Ne misi-ta ine'a-k.  
1SG:NOM cat-ACC feel-PRFV

‘I suddenly felt/touched the cat.’

- c'. In maala mama-m bwalko.  
1SG:GEN mother hand-PL soft  
‘My mother’s hands are/feel soft.’

The perception predicates illustrated above correlate with Dik & Hengeveld’s first reading: the immediate perception of an entity by an individual. When the stimulus refers to a state, action or event, the language allows for several complement constructions: morphological structures (6a), nominalized clauses (6b), embedded syntactic-like complement (6c), and syntactic-like complement extraposed to the right (6d-e).<sup>1</sup>

- (6) a. Aurelia-Ø enchi laaben-ta pona-jikka-k.  
Aurelia-NOM 2SG:ACC violin-ACC play-hear-PRFV  
‘Aurelia heard you playing the violin.’
- b. Aurelia-Ø [ enchi laaben-ta pona-m-ta ] jikka-k.  
Aurelia-NOM 2SG:ACC violin-ACC play-CLM-ACC hear-PRFV  
‘Aurelia heard you play the violin.’
- c. Aurelia-Ø [ enchi laaben-ta pona-ka-‘u ] jikka-k.  
Aurelia-NOM 2SG:ACC violin-ACC play-PRFV-CLM hear-PRFV  
‘Aurelia heard that you played the violin.’
- d. Aurelia-Ø a<sub>i</sub> jikka-k [ enchi laaben-ta pona-ka-‘u ]<sub>i</sub>  
Aurelia-NOM 3SG:ACC hear-PRFV 2SG:ACC violin-ACC play-PRFV-CLM  
‘Aurelia heard it, that you played the violin.’
- e. Aurelia-Ø enchi<sub>i</sub> jikka-k [ enchi<sub>i</sub> laaben-ta pona-ka-‘u ]  
Aurelia-NOM 2SG:ACC hear-PRFV 2SG:ACC violin-ACC play-PRFV-CLM  
‘Aurelia heard you that you played the violin.’

The remainder of this section establishes the semantic and syntactic properties of these construction types. Prior to the analysis of perception verb complementation,

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<sup>1</sup> Lindenfeld also noted that a perception’s verb complement can be introduced by the Spanish CLM *ke* ‘that’. Although I found some instance of *ke* introducing propositional attitude complements, I don’t have any examples of *ke* with indirect perception verbs.

Ne a bicha-Ø [ ke u ili uusi-Ø chu’u-ta jipwe-Ø ]  
1SG:NOM 3SG:ACC see-PRES that the little child-NOM dog-ACC own-PRES  
‘I see it, that the child has a dog.’ (Lindenfeld 1973: 102)

however, it is necessary to draw a distinction between a relative clause and a nominalized complement.

**7.1.1. Relative clauses vs. nominalized complementation.** In traditional grammar, a relative clause serves to modify a noun and consists of subordinate clauses that refer to that noun. A rel-clause specifies certain information about the modified or head noun, information that may either be essential to understanding who the designated entity is (restrictive), or non essential, merely specifying in further detail some information about that noun (non-restrictive). As in most Uto-Aztecan languages (Langacker 1977), Yaqui has two types of rel-clauses. The *-m(e)* clause is used when the head noun functions as ‘subject’ in the rel-clause. If the head noun is also the PSA of the main core (or the head noun is plural), the rel-clause is unmarked for case. The head noun may consist of a common noun as in (7a) or an absent lexical item (i.e., headless) as in (7b).

- (7) a. Banko-Ø [ rama-po kateka-me] kote-k.  
 chair-NOM bush-LOC sit:PRFV-CLM break-PRFV  
 ‘The chair that is in the bush is broken.’
- b. [U-me enchi bicha-ka-me ] tenne-k.  
 the-PL 2SG:ACC see-PRFV-CLM run-PRFV  
 ‘The ones that saw you ran.’

If the head noun is a non-PSA argument within the main core, then the rel-clause is overtly marked by the accusative suffix (8a, c) or by the relevant postposition (8b). Contrary to many other verb-final languages, rel-clauses in Yaqui tend to immediately follow the head noun or even appear as discontinuous clauses (8c).

- (8) a. Ne yoem-ta [ ba’a-po kom weche-ka-m-ta] jinne’u-k.  
 1SG:NOM man-ACC water-LOC down fall-PRFV-CLM-ACC rescue-PRFV  
 ‘I rescued the man that fell down into the water.’
- b. Beto-Ø [ misa-ta jo’a-m-ta-u] nooka-k.  
 Beto-NOM mass-ACC make-CLM-ACC-DIR talk-PRFV

‘Beto talked to the one who gives the sermon (lit. the one who does the mass)’

- c. U yoeme-Ø [ chu’u-ta ] me’a-k [ ne ke-ke-m-ta ]  
 the man-NOM dog-ACC kill-PRFV 1SG:ACC RED-bite-CLM-ACC  
 ‘The man killed the dog that was biting me.’

The –‘u clause-type is used when the head noun functions as a non-PSA argument in the rel-clause, i.e. direct or oblique core argument in (9a, b). When the head noun is plural, the plural suffix *-(i)m* is often added to the rel-clause (9c).

- (9) a. U bisikleeta-Ø [ in jinu-ka-’u ] sikili.  
 the bike-NOM 1SG:GEN buy-PRFV-CLM red  
 ‘The bike that I bought is red.’
- b. [ Mache’eta-m ] ne jippue-Ø [ em ne reuwa-ka-’u-m ].  
 machete-PL 1SG:NOM have-PRES 2SG:GEN 1SG:ACC lend-PRFV-CLM-PL  
 ‘I have the machetes that you lent me.’
- c. Inepo [ u-ka wikia-ta<sub>i</sub> ] tamachia-Ø [ in a-e<sub>i</sub> ]  
 1SG:NOM the-ACC lasso-ACC measure-PRES 1SG:GEN 3SG-INST  
 kaba’i-ta jicho’ola-bae-’u ].  
 horse-ACC rope-DESID-CLM  
 ‘I am measuring the lasso with which I will rope the horse.’

When the rel-clause appears extraposed, the head noun tends to remain as a core argument of the main core, meaning that there is one syntactic argument missing in the linked unit. This is certainly true when the head noun is a direct core argument as in (9b), but not when it has another function. In (9c), the head noun *wikiata* ‘the lasso’ functions as an instrumental oblique core argument within the rel-clause but it appears as a core argument of the main verb; since the rel-clause is extraposed, it takes a resumptive pronoun *a-e* ‘with it’ referring to the head noun. Clauses without a lexical head noun are also common.

- (10) a. [ Jaja-wa-m-ta ] te’a-‘e!  
 persecute-PASS-CLM-ACC find-IMPER:SG  
 Find the one that has been persecuted!

- b. [kowi-ta me'a-ka-me] enchi bicha-k.  
 pig-ACC kill-PRFV-CLM 2SG:ACC see-PRFV  
 'The one that killed the pig saw you.'
- c. Ne [pueta-po weeka-m-ta-make] etejo-k.  
 1SG:NOM door-LOC stand:STA-CLM-ACC-COM chat-PRFV  
 'I chatted with the one that was standing in the doorway.'

The PSA of the rel-clause marked by *-u* is systematically marked as non-nominative; if nominal, it is marked by the accusative *-ta*; if pronominal, it is marked by genitive pronouns rather than accusative (Lindenfeld 1973: 66). Recall that there are only two consistent differences between the two pronominal paradigms: the genitive pronouns for the first person singular *ni* ~ *nim* and second person singular *em*, as compared to the accusative pronouns for first person *ne* and second person *enchi*. All other pronouns for genitive and accusative are the same. The occurrence of the accusative pronoun in (11d) is explained because *ne* 'me' is not the actor but the undergoer of the non-main verb.

- (11) a. [Em / \*enchi bwika-'u] ne yi'i-ne.  
 2SG:GEN / 2SG:ACC sing-CLM 1SG:NOM dance-EXPE  
 'I will dance to whatever you sing.'
- b. Jamut-ta-u [nim / \*ne waata-'u] ne waate-Ø.  
 woman-ACC-DIR 1SG:GEN / 1SG:ACC want-CLM 1SG:NOM miss-PRES  
 'I miss the woman that I love.'
- c. U yoemia-Ø [nim / \*ne bicha-ka-'u] tomi-ta nu'u-ka.  
 the person-NOM 1SG:GEN / 1SG:ACC see-PRFV-CLM money-ACC take-PRFV  
 'The person that I saw took the money.'
- d. U yoemia-Ø [ne bicha-ka-me] tomi-ta nu'u-ka.  
 the person-NOM 1SG:ACC see-PRFV-CLM money-ACC take-PRFV  
 'The person that saw me took the money.'

In sum, rel-clauses are marked by *-me* or *-u* depending on the syntactic functions of the head noun within the embedded clause. If the head noun also serves as the non-PSA in the main core, then the rel-clause takes accusative or postposition markers; if the head

noun is other than the PSA, the embedded PSA is marked by the suffix *-ta* or by genitive pronouns. Now, observe the examples below. The clause in (12a) may be ambiguous between a rel-clause modifying a noun, e.g., the child who is crying, and a nominalized clause serving as a complement of ‘hear’. The clause in (12b) is hardly interpretable as a rel-clause.

- (12) a. Maria-Ø [ ili uusi-ta bwana-m-ta] jikka-k.  
 Maria-NOM little child-ACC cry-CLM-ACC hear-PRFV  
 ‘Maria heard the child who cried.’ / ‘Maria heard the child cry.’
- b. Maria-Ø [ Ivan-ta bwana-m-ta] jikka-k.  
 Maria-NOM Ivan-ACC cry-CLM-ACC hear-PRFV  
 ‘Maria heard Ivan cry.’ / \*‘Maria heard the Ivan who cried.’

There are, at least, four major differences between a rel-clause and a nominalized complement. First, whereas the head noun of a rel-clause tends to be a common noun, the PSA of a nominalized clause can be a proper name or a personal pronoun. The nominalized clause in (12b) cannot be derived from a restrictive rel-clause because proper names and unique noun phrases may not be heads of restrictive relatives (Akmajian 1977). In other words, whereas a rel-clause refers to a particular entity, a nominalized clause does not refer to any particular individual but rather expresses a state of affairs regarding that individual. However, when the participant involved in a state of affairs is a common noun, we would be in a borderline area in which it may be interpreted as the perception of an entity modified by a rel-clause (restrictive rel-clause), e.g., *I heard [a child] [crying]*, or a direct perception of a situation, e.g. *I heard [a child crying]*.

Second, and maybe the most important feature distinguishing relativization from other sorts of complements, is the marking of the embedded PSA. As Langacker (1977)

points out, the rel-clause PSA may occur in its genitive or accusative form in most Uto-Aztecan languages. In Yaqui, the pronominal PSA in a rel-clause must be genitive, while the pronominal PSA of a nominalized clause tends to be accusative. Few complement-taking predicates allow the embedded PSA to be marked as genitive. The ungrammaticality of (13b) is due to the occurrence of the genitive pronoun *em* ‘your’ in the perception verb complement.

- (13) a. Maria-Ø [ enchi bwana-m-ta] jikka-k.  
 Maria-NOM 2SG:ACC cry-CLM-ACC hear-PRFV  
 ‘Maria heard you cry.’
- b. \* Maria-Ø [ em bwana-m-ta] jikka-k.  
 Maria heard you (gen) cry.’

Third, whereas there is one verbal slot left empty in a rel-clause which the head noun may fill, all of the slots specified by the verb in a nominalized complement are overtly expressed. There is a tendency for verbal complements marked by *-me* to appear either embedded within the main core (14a) or extraposed to the right (14b). When extraposed to the right, the embedded clause tends to keep all its syntactic arguments.

- (14) a. Goyo-Ø [ ne kuta-ta chukta-ka-m-ta] bicha-k.  
 Goyo-NOM 1SG:ACC wood-ACC cut-PRFV-CLM-ACC see-PRFV  
 ‘Goyo saw me cut the wood.’
- b. Min-Ø bicha-k [ ne kaba’i-ta jinu-ka-m-ta].  
 Min-NOM see-PRFV 1SG:ACC horse-ACC buy-PRFV-CLM-ACC  
 ‘Fermín saw me buy the horse.’

This tendency is even stronger for complements marked by *-u*. Compared to the empty verbal slot in an extraposed relative clause (15a), all of the slots specified by the verb are filled out in the nominalized complement (15b); otherwise the construction is unacceptable (15c). Notice also that the pronominal actor is genitive in the relative and accusative in the complement construction.

- (15) a. Luisa-Ø tajo'o-ta bicha-k [ nim baksia-ka-'u ]  
 Luisa-NOM cloth-ACC see-PRFV 1SG:GEN wash-PRFV-CLM  
 'Luisa saw the clothes that I washed.'
- b. Luisa ne bicha-k [ tajo'o-ta ne baksia-ka-'u ]  
 Luisa-NOM 1SG:ACC see-PRFV cloth-ACC 1SG:ACC wash-PRFV-CLM  
 'Luisa saw me, that I washed the clothes.'
- c.\* Luisa ne bicha-k [ tajo'o-ta baksia-ka-'u ]  
 'Luisa saw me, that (I) washed the clothes.'

Fourth, rel-clauses may take nominal categories such as case and number, but nominalized complements can not. Relative and nominalized clauses marked by *-me* both take the accusative *-ta* when modifying an accusative noun head or serving as a direct core argument, respectively. Moreover, a rel-clause marked by *-'u* tends to agree with its noun head when plural (16a). Because there is no head noun to agree with, a nominalized clause does not admit pluralization, regardless of the number of the participants involved (16b-c).

- (16) a. Min-Ø kaba'i-m bicha-k [ Anselmo-ta jinu-ka-'u-m ]  
 Min-NOM horse-PL see-PRFV Anselmo-ACC buy-PRFV-CLM-PL  
 'Fermin saw the horses that Anselmo bought.'
- b. Min-Ø [ Anselmo-ta kaba'i-m jinu-ka-'u ] bicha-k  
 Min-NOM Anselmo-ACC horse-PL buy-PRFV-CLM see-PRFV  
 'Fermin saw that Anselmo bought the horses.'
- c. Min-Ø [ u-me o'owi-m kaba'i-m jinu-ka-'u ] bicha-k  
 Min-NOM the-PL man-PL horse-PL buy-PRFV-CLM see-PRFV  
 'Fermin saw that the men bought the horse.'

The fact that a 'pseudo'-relative construction may serve as the complement of perception and other knowledge predicates has been observed in other languages; see Lambrecht (1981), Koenig and Lambrecht (1999), van der Auwera (1985) for French; Miller (1989) for Huaraz Quechua; Guasti (1992) and Borgonovo (1996) for Spanish. In Yaqui, verbs coding direct perception, as well as mental predicates such as *te'a* 'find,

discover’ (17a) and *teenku* ‘dream, imagine’ (17b) seem to be the unique complement-taking predicates that allow the occurrence of a nominalized unit marked by *-me*.<sup>2</sup>

- (17) a. Nim      achai [jaibu    enchi    siika-m-ta]            te’a-k.  
 1SG:GEN father    already 2SG:ACC go:PRFV-CLM-ACC    find-PRFV  
 ‘My father found/discovered that you already left.’
- b. Ne            [ enchi    kaba’i-ta    jinu-ka-m-ta ]            tenku-k.  
 1SG:NOM    3SG:ACC horse-ACC buy-PRFV-CLM-ACC    dream-PRFV  
 ‘I dreamed that you bought a horse.’

There is another common clause that seems to take a nominal clause, the one involving the verbal particle *bena* ‘it seems that’ in (18). In this context, the embedded PSA appears as nominative rather than accusative, even though the nominal clause is overtly marked by *-ta*. The clauses in (18a) exemplify the use of *bena* as a main verb.

- (18) a. U    ili    jamut-Ø            ankeles-ta    bena.  
 The little woman-NOM    angel-ACC    seem  
 ‘The girl seems an angel.’
- b. Ivan-Ø    [ ka    tua    Torim-meu    wee-pea-m-ta ]            bena.  
 Ivan-NOM    NEG true Torim-PL:DIR    go-INTEN-CLM-ACC    seem  
 ‘It seems that Ivan does not really want to go to Torim.’
- c. Empo      [ kaba’i-ta    jinu-ka-m-ta ]            bena, luturia?  
 2SG:NOM    horse-ACC buy-PRFV-CLM-ACC    seem true  
 ‘It seems that you bought a horse, is it true?’

Verbs coding acquisition of knowledge, such as indirect perception, cognitive and speech act verbs, take a clausal complement marked by *-u* or *-po*, but never a nominalized clause. The embedded PSA is often marked by the accusative, although some instances of genitive pronouns are found, especially when the embedded PSA is coreferential to the matrix PSA. I now turn to the complements of perception verbs.

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<sup>2</sup> Yaqui is also more restrictive in marking a complement clause as accusative, compared to other Uto-Aztec languages. According to the examples in Langacker (1977), cognition and propositional attitude predicates used to take an accusative complement clause in Luiseño, Cahuilla, Serrano, Cupeño, Tulatulabal, among others.

**7.1.2. Direct and indirect perception.** When perception verbs denote a situation in which one comes to have knowledge of a simultaneous event directly through the sense, Yaqui may choose between two equally common construction types. The first one consists of a main verb taking the nominalized complement marked by *-me*.

- (19) a. Nim      achai [ enchi      ye'e-m-ta]      bicha-k.  
           1SG:GEN father 2SG:ACC dance-CLM-ACC see-PRFV  
           ‘My father saw you dance.’
- b. Goyo-Ø    [ ne          kuta-ta      chukta-ka-m-ta]      bicha-k.  
           Goyo-NOM 1SG:ACC wood-ACC cut-PRFV-CLM-ACC see-PRFV  
           ‘Goyo saw me cut the wood.’

The second one consists of a morphological structure where the perception verb is attached to the verb denoting the perceived state of affairs. Depending on the syntactic valence of the basic verb, the resulting clause may have one or more accusative arguments. The order of the non-PSA arguments is fixed, especially when animate. Compare the two possible interpretations in (20b-c).

- (20) a. Nim      achai    enchi      yi'i-bicha-k.  
           1SG:GEN father 2SG:ACC dance-see-PRFV  
           ‘My father saw you dancing.’
- b. Nepo      enchi      Peo-ta      bepa-bicha-k.  
           1SG:NOM 2SG:ACC Pedro-ACC hit-see-PRFV  
           ‘I saw you hitting Pedro.’
- c. Nepo      Peo-ta    enchi      bepa-bicha-k.  
           1SG:NOM Peo-ACC 2SG:ACC hit-see-PRFV  
           ‘I saw Pedro hitting you.’

Native speakers with whom I consulted do not report any difference in meaning between the nominalized complements (19) and the morphological clauses (20). Although a detailed analysis would be necessary to make any generalization, I have observed the following two properties. The first group tends to be translated into Spanish

using a bare infinitive, e.g., *mi padre te vio (al) bailar* ‘my father saw you dance’, or a temporal clause, e.g., *mi padre vio cuando bailaste* ‘my father saw when you danced’ in (19a). The second group tends to be translated using the gerund, e.g., *mi padre te vio bailando* ‘my father saw you dancing’ (20a). I furthermore explored the possible temporal distinction between the two constructions (Kirsner and Thompson 1976). I tested the co-occurrence of phrases like *suddenly, from the beginning to the end, for a while, until X finishes*, among others, inquiring about specific details of the event in question. Whereas the morphological clauses are used to denote a durative/continuous state of affairs, the nominal complement may denote both a momentary/punctual event and a terminative/ complete.

When perception verbs refer to an abstractly perceived phenomena, that is, when they encode an indirect report about, referring to, or deducing on a situation, Yaqui uses the syntactic-like complement marked by *-u* or *-po*. The complement may be embedded (21a) or extraposed to the right. When it is extraposed, the main core takes either a resumptive pronoun co-indexed to the whole linked unit (21b) or a copy of the PSA of the perceived event (21c).

- (21) a. Goyo-Ø [ Iban-ta<sub>i</sub> jaibu siika-‘u ] bicha-k  
 Goyo-NOM Ivan-ACC already go:PRFV-CLM see-PRFV  
 bweituk ka aapo<sub>i</sub> kari-po aane-Ø.  
 because NEG 3SG:NOM house-LOC be-PRES  
 ‘Goyo saw that Ivan already left because he is not in the house.’
- b. Aurelia-Ø a<sub>i</sub> bicha-k [ kaye-po am kaate-ka-‘u ]<sub>i</sub>  
 Aurelia-NOM 3SG:ACC see-PRFV street-LOC 3PL:ACC walk-PRFV-CLM  
 ‘Aurelia saw it that they crossed the street.’
- c. Aurelia-Ø enchi<sub>i</sub> bicha-k [ enchi<sub>i</sub> weche-ka-po ]  
 Aurelia-NOM 2SG:ACC see-PRFV 2SG:ACC fall-PRFV-CLM  
 ‘Aurelia saw you, that you fell down.’

Although the occurrence of an accusative pronoun co-indexed to the whole linked unit in (21b) may seem strange, in fact it is not. Recall that, when analyzing the morpho-syntactic properties of simple clauses (cf. chapter 4, § 4.2), we saw that when a non-actor core argument is extraposed, a clitic pronoun is necessarily attached to the core, keeping the relevant case and postposition marking of the extraposed NP. The relevant examples are repeated below for convenience.

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

That is what happens when the linked unit of a perception predicate like *bicha* ‘see’ in (21b) is extraposed to the right: the main core takes a co-indexed pronominal argument which appears as accusative. Exactly the same pattern is observed for other complement-taking predicates, such as *suale* ‘believe’, *beas kopte* ‘forget’, *wawaate* ‘remember’, among others. We will return later to the copy of the complement PSA within the matrix core. In the remainder of this section, I will explore the semantic and morpho-syntactic properties of each type of perception complement.

When describing a direct, immediate, physical perception of a state of affairs, simultaneity between the perceptual and the perceived events is required. In Yaqui, the perceived event within a morphological clause must be a bare form, and it excludes suppletive forms in the past (23a') and aspectual markers (23b').

- (23) a. Goyo-Ø Iban-ta sim-bicha-k.  
 Goyo-NOM Ivan-ACC go-see-PRFV  
 ‘Goyo saw Ivan leaving.’
- a’. \*Goyo-Ø Iban-ta siika-bicha-k.  
 Goyo-NOM Ivan-ACC go:SG:PRFV-see-PRFV  
 ‘Goyo saw Ivan left.’
- b. Nim achai enchi yi’i-bicha-k.  
 1SG:GEN father 2SG:ACC dance-see-PRFV  
 ‘My father saw you dance.’
- b’. \*Nim achai enchi ye’e-ka-bicha-k.  
 1SG:NOM father 2SG:ACC dance-PRFV-see-PRFV  
 ‘My father saw you danced.’

The nominalized complement often appears unmarked, but forms marked by the perfective suffix are allowed (24a-b).<sup>3</sup> The expected *-ne* (24c) and the past continuous *-n* (24d) are, however, completely disallowed here. In this particular case, the event of the complement is understood as a perceived situation which is terminated simultaneously with the perception verb.

- (24) a. Goyo-Ø [Ivan-ta] bicha-k [siika-m-ta]  
 Goyo-NOM Ivan-ACC see-PRFV go:PRFV-CLM-ACC  
 ‘Goyo saw Ivan leave (he said goodbye to him)’
- b. Ne [Peo-ta chu’u-ta jinu-ka-m-ta] bicha-k.  
 1SG:NOM Pedro-ACC dog-ACC buy-PRFV-CLM-ACC see-PRFV  
 ‘I saw Pedro buy a dog.’
- c. \*Ne [Peo-ta chu’u-ta jinu-ne-m-ta] bicha-Ø.  
 ‘I see Pedro will buy a dog (because he is looking for one).’
- d.\* Ne [Peo-ta chu’u-ta jinu-n-m-ta] bicha-k.  
 ‘I saw Pedro was buying a dog.’

<sup>3</sup> In this vein, Langacker (1977: 61) proposes that the *-ka* co-occurring with the nominalizer *-me*, is a general stative suffix deriving from \*ka ‘be’. Possibly, this operator restriction may refer to some semantic incompatibility (cf. respectfully sensitive tenses in Romance languages).

When describing the acquisition of knowledge inferred or deduced from evidence that the perceiver sees/hears, the event in the complement clause is fully marked.

(25) a. Goyo            a<sub>i</sub>            jikka-k            [ Fredi-ta-mak            ne            etejo-ka-'u]<sub>i</sub>  
 Goyo-NOM 3SG:ACC hear-PRFV    Fredy-ACC-COM 1SG:ACC chat-PRFV-CLM  
 'Goyo heard it, that I chatted with Fredy.'

b. Goyo            a<sub>i</sub>            jikka-k            [ Fredi-ta-mak            ne            etejo-ne-'u]<sub>i</sub>  
 Goyo-NOM 3SG:ACC hear-PRFV    Fredy-ACC-COM 1SG:ACC chat-EXPE-CLM  
 'Goyo heard it, that I am going to chat with Fredy.'

c. Nepo            a<sub>i</sub>            bicha-Ø            [ am            uuba-ne-'u]<sub>i</sub>  
 1SG:NOM 3SG:ACC see-PRES            3PL:ACC bath-EXPE-CLM  
 'I see it, that they are going to take a bath (they are preparing the tub).'

d. Nepo            a<sub>i</sub>            bicha-n            [ am            uuba-n-'u]<sub>i</sub>  
 1SG:NOM 3SG:ACC see-PASTC            3PL:ACC bath-PASTC-CLM  
 'I was seeing it, that they were taking a bath.'

The same requirement of co-temporality is reflected in the impossibility of adding temporal adverbials to the complement which would indicate a direct perception situation. In (26a), *inian tuukapo* 'that night' can only be interpreted as modifying the main clause. *Chubala* 'some time ago' is incompatible with the construction describing immediate perception (26b), but it is fine with the construction describing non-immediate perception (26c). The clause in (26d) exemplifies the occurrence of *yooko* 'tomorrow' modifying the complement verb, even though the perceptual event has already taken place.

(26) a. Inian tuuka-po    Goyo-Ø    Iban-ta    sim-bicha-k.  
 that night-LOC    Goyo-NOM    Ivan-ACC    go-see-PRFV  
 'That night Goyo saw Ivan leaving.'

b. \*Maria-Ø [ chubala enchi serbesa-ta je'e-m-ta] bicha-Ø.  
 'Maria saw you drink beer sometime ago.'

c. Maria-Ø    a<sub>i</sub>            bicha-k [chubala enchi serbesa-ta je'e-ka-'u]<sub>i</sub>  
 Maria-NOM 3SG:ACC see-PRFV    time ago 2SG:ACC beer-ACC drink-PRFV-CLM  
 'Maria saw it, that you drank beer sometime ago (ct: she saw the empty bottles).'

- d. Fermin-Ø a<sub>i</sub> jikka-k [ Ivan-ta aabo siime-‘u yooko ]  
 Fermin-NOM 3SG:ACC hear-PRFV Ivan-ACC here go-CLM tomorrow  
 ‘Fermín heard it, that Ivan will come tomorrow.’

The complement of a direct perception predicate cannot be negated, i.e., it is hard to perceive something that does not occur or does not exist.

- (27) a. Goyo-Ø Iban-ta kaa sim-bicha-k  
 Goyo-NOM Ivan-ACC NEG go-see-PRFV  
 ‘Goyo didn’t see Ivan leaving / \*Goyo saw Ivan not leave.’
- b. Maria-Ø kaa enchi serbesa-ta je’e-bicha-k.  
 Maria-NOM NEG 2SG:ACC beer-ACC drink-see-PRFV  
 ‘Maria didn’t see you drink the beer / \* Maria saw you not drink the beer.’
- c. Ne ka [ Goyo-ta maska-ta jo’a-m-ta ] bicha-k.  
 1SG:NOM NEG Goyo-ACC mask-ACC make-CLM-ACC see-PRFV  
 ‘I did not see Goyo make the mask/ \*I saw Goyo not make the mask.’

The two events within an indirect perception situation can be independently negated.

- (28) a. Goyo-Ø kaa [ Iban-ta siika-‘u ] bicha-k.  
 Goyo-NOM NEG Ivan-ACC go:PRFV-CLM see-PRFV  
 ‘Goyo didn’t see that Ivan left.’
- b. Goyo-Ø a<sub>i</sub> bicha-k [ Iban-ta kaa siika-‘u ]<sub>i</sub>  
 Goyo-NOM 3SG:ACC see-PRFV Ivan-ACC NEG go:PRFV-CLM  
 ‘Goyo saw it, that Ivan did not leave.’
- c. Ne kaa Goyo-ta<sub>i</sub> bicha-k [maska-ta a<sub>i</sub> yaa-ka-‘u]  
 1SG:NOM NEG Goyo-ACC see-PRFV mask-ACC 3SG:ACC make-PRFV-CLM  
 ‘I did not see that Goyo made the mask (but he has one).’
- d. Ne Goyo-ta<sub>i</sub> bicha-k [ maska-ta kaa a<sub>i</sub> yaa-ka-‘u ]  
 1SG:NOM Goyo-ACC see-PRFV mask-ACC NEG 3SG:ACC make-PRFV-CLM  
 ‘I saw that Goyo did not make the mask (I guess he would buy one).’

Direct perception requires the complement states of affairs to be perceivable (cf. Dik & Hengeveld 1991: 241). This explains why the events in (29a) and (29c) are odd if they are coded as a complement of an immediate/physical perception, but they are fine if they are encoded by an indirect/inferred perception complement.

- (29) a.\* U tata pare-Ø u-ka lio-nok-ta yee = tu-tu'ute-bit-la.  
 the priest-NOM the-ACC God-word-ACC HUM = RED-fix-see-COMPL  
 'The priest has seen faith making miracles for the people (lit. God's word)'
- b. U tata paare a<sub>i</sub> bit-la [u-ka lio-nok-ta yee=tu-tu'ute-'u]<sub>i</sub>  
 the priest-NOM 3SG:ACC see-COMPL the-ACC God-word-ACC HUM=RED-fix-CLM  
 'The priest has seen it, that faith makes miracles for people.'
- c.\* Periodiko-po ne a bicha-k [lechim ja'amu-m-ta]  
 newspaper-LOC 1SG:NOM 3SG:ACC see-PRFV milk-PL climb-CLM-ACC  
 'In the newspaper, I saw (the price of) the milk is rising up.'
- d. Periodiko-po ne a bicha-k [lechi-m ja'amu-ka-'u]  
 newspaper-LOC 1SG:NOM 3SG:ACC see-PRFV milk-PL climb-PRFV-CLM  
 'In the newspaper, I saw it, that (the price of) the milk is rising up.'

The predicate *i'inea* 'feel' can also take a non-perceivable complement but only when it is coded as a mental perception of a situation inferred or deduced from the evidence, e.g., *have a feeling of* in (30b).

- (30) a.\* Goyo-Ø Tibu-ta u-ka jamut-ta jub-bae-i'inea-k.  
 Goyo-NOM Tibu-ACC the-ACC woman-ACC marry-DESID-feel-PRFV  
 'Goyo felt Tibu want to marry this woman.'
- b. Goyo-Ø a<sub>i</sub> i'inea-k [Tibu-ta jamut-ta jub-bae-'u]<sub>i</sub>  
 Goyo-NOM 3SG:ACC feel-PRFV Tibu-ACC woman-ACC marry-DESID-CLM  
 'Goyo had a feeling of it, that Tibu wants to marry the woman.'

It seems that certain events or states of affairs are not compatible with certain types of perception. On the one hand, different senses impose different requirements on perception (Kirsner & Thompson 1976: 223). Since *feel* requires a more immediate physical contact between the perceiver and the perceived than does either *sight* or *hearing*, one would expect *Aurelia* to be much closer to the scene described in (31) for her to feel the impact.

- (31) Aurelia-Ø a<sub>i</sub> jikka-k / bicha-k / ?ine'a-k  
 Aurelia-NOM 3SG:ACC hear-PRFV see-PRFV feel-PRFV

[elefan-ta plasa-po chepte-m-ta]<sub>i</sub>  
 elephant-ACC park-LOC jump-CLM-ACC  
 ‘Aurelia heard it, saw it, ?felt it, the elephant jump on the plaza.’

On the other hand, it is possible that certain kinds of events simply cannot be perceived in particular ways. Morphological and nominalized complements avoid stative predicates (32a-b), while clause complements marked by –‘*u* do not (32c).

(32) a. \* Armando-Ø kafe-ta ama aane-bicha-k.  
 Armando-NOM coffee-ACC there exist-PRFV  
 ‘Armando saw there is coffee over there.’

b.\* Armando-Ø [ kafe-ta ama auka-m-ta] bicha-k.  
 Armando-NOM coffee-ACC there exist:PRFV-CLM-ACC see-PRFV  
 ‘Armando saw there is coffee over there.’

c. Armando-Ø [ kafe-ta ama auka-’u] bicha-k.  
 Armando-NOM coffee-ACC there exist:PERFV-CLM see-PRFV  
 ‘Armando saw that there is coffee over there.’

The clauses below exemplify *ji’ibwe* ‘taste’ which also restricts the occurrence of a state predicate to be encoded by an indirect/inferred perception construction.

(33) a. \* Ne wakabak-ta cho’oko-ji’ibwe-k.  
 ‘I tasted the wakabaki being salty.’

b.\* Ne [ wakabak-ta cho’oko-m-ta ] ji’ibwe-k.  
 ‘I tasted the wakabaki is salty.’

c. Ne a<sub>i</sub> ji’ibwe-k [ wakabak-ta cho’oko-’u]<sub>i</sub>  
 1SG:NOM 3SG:ACC taste-PRFV wakabaki-ACC be salty-CLM  
 ‘I tasted it, that the wakabaki was salty.’

Furthermore, an inferred or mental perception of a state of affairs expressed by clausal complement marked by –‘*u* can be uttered in any of the following circumstances: (i) if the speaker directly perceives the event, (ii) if the speaker deduces the event from the evidence, or (iii) if the speaker has been told by someone else about the event coded in the complement. These possibilities are exemplified for *hearing* below.

- (34) a. Ne [enchi ko'okoe-po] jikka-k, itepo teopo-po katek-o.  
 1SG:NOM 2SG:ACC be sick-CLM hear-PRFV 1PL:NOM church-LOC stand:PL-CLM  
 'When we were in the church, I heard that you were sick.'
- b. Tuuka ne enchi jikka-k [enchi ko'okoe-'u],  
 yesterday 1SG:NOM 2SG:ACC hear-PRFV 2SG:ACC be sick-CLM  
 empo omo ine'e-te-k?  
 2SG:NOM SELF feel-CAUSE-PRFV  
 'Yesterday, I heard you that you were sick, did you recover?'
- c. Ne a<sub>i</sub> jikka-k [enchi ko'okoe-po]<sub>i</sub> amane.  
 1SG:NOM 3SG:ACC hear-PRFV 2SG:ACC be sick-CLM around there  
 'Around there, I heard it that you were sick.'
- d. Ne Maria-ta-t a<sub>i</sub> jikka-k [enchi ko'okoe-'u]<sub>i</sub>;  
 1SG:NOM Maria-ACC-LOC 3SG:ACC hear-PRFV 2SG:ACC be sick-CLM  
 'I heard it from Maria, that you were sick.'

The clause in (34a) may be interpreted in two ways, as an immediate or inferred perception; the rest describes the way the speaker acquired the knowledge described in the complement. The copying of the complement PSA into the main core (34b) explicitly signals 'first-hand' knowledge, e.g., I heard it from you, either you told me that you didn't feel right, or I heard you coughing. The occurrence of the resumptive pronoun (34c) suggests 'second-hand' knowledge, e.g., it is said that you were sick. The clause in (34d) explicitly expresses the source, e.g., it was Maria who told me that you were sick. The clause in (34d) concerns the fourth reading proposed by Dik & Hengeveld: the reception of the propositional content of a speech act. The source of the propositional content cannot be specified within a direct perception construction, as shown below.

- (35) \* Ne Maria-ta-t [enchi ko'okoe-m-ta] jikka-k.  
 1SG:NOM Maria-ACC-LOC 2SG:ACC be sick-CLM-ACC hear-PRFV  
 'I heard from Maria that you were sick.'

It is also well known that immediate perception verbs are non-factive whereas mental perception is semifactive. That is, the speaker presupposes the truth of the complement in

an indirect perception situation, whereas she does not in a direct perception situation. The clause in (36a) implies that *Jorge* may have drunk some beer but he may not have, while in (36b) the implication seems to be that he did drink but *Maria* did not see him. The reception of the propositional content of a speech act (36c) is non-factive since the speaker is not committed to the truth of the content of the propositional complement.

- (36) a. Maria-Ø ka Jorge-ta serbesa-ta je'e-bicha-k.  
 Maria-NOM NEG Jorge-ACC beer-ACC drink-see-PRFV  
 'Maria did not see Jorge drinking beer.'
- b. Maria-Ø ka a<sub>i</sub> bicha-k [ Jorge-ta serbesa-ta je'e-ka-'u]<sub>i</sub>  
 Maria-NOM NEG 3SG:ACC see-PRFV Jorge-ACC beer-ACC drink-PRFV-CLM  
 'Maria did not see that Jorge drank beer.'
- c. Maria-Ø Lupe-ta-t a<sub>i</sub> jikka-k [ Jorge-ta  
 Maria-NOM Lupe-ACC-LOC 3SG:ACC hear-PRFV Jorge-ACC  
 serbesa-ta je'e-ka-'u]<sub>i</sub> bweta aapo kaa a suale-n.  
 beer-ACC drink-PRFV-CLM but 3SG:NOM NEG 3SG:ACC believe-PASTC  
 'Maria heard it from Maria, that Jorge drank beer; but she did not believe it.'

This suggests that immediate perception of the drinking event by the speaker is negated and, therefore, it may or may not have happened as far as the speaker is concerned, whereas in (36b) it is negated that the speaker acquired the knowledge concerning the drinking event through visual perception.

**7.1.3. Juncture-nexus types of perception predicates.** The expressions of immediate perception, indirect or mental perception, and the reception of the propositional content of a speech act are reflected in different forms in Yaqui. Immediate perception of a state of affairs is expressed by morphological and nominalized clauses, and they cannot be uttered in any circumstance in which the perceiver does not directly and physically see/hear/smell/touch/feel the perceived event. The lexical representation for direct perception is given in (37a). Here, (x, [<sub>LS</sub>...y...]) means that the participant

denoted by *x* is not involved in the state of affairs signaled by the embedded LS, which refers to the event denoting the perceived state of affair. The same LS in (37b) can capture both the nominalized complement in (37c) and the morphological one in (37d).

- (37) a. **PERCEIVE'** (*x*, [<sub>LS</sub>...*y*...])
- b. **hear'** (*Maria*, [**do'** (*ili uusi*, [**cry'** (*ili uusi*))])])
- c. *Maria-Ø* [ *ili uusi-ta bwana-m-ta*] *jikka-k*.  
*Maria-NOM little child-ACC cry-CLM-ACC hear-PRFV*  
 'Maria heard the child cry.'
- d. *Maria-Ø ili uusi-ta bwan-jikka-k*.  
*Maria-NOM little child-ACC cry-hear-PRFV*  
 'Maria heard the child crying (but she doesn't want to get up).'

The first position of the state predicate **hear'** consists of the perceiver, *Maria*. Because it is the highest ranked argument in terms of the AUH, it is the actor and is assigned nominative case. The second position consists of the content of the perceptual event, what *Maria* heard. Since the matrix predicate encodes an immediate/direct perception of a situation, it imposes certain TAM restrictions on the embedded LS. We have seen that nominalized clauses cannot be specified independently for negation or temporal adverbs. When the event of the complement is marked by the aspectual suffix *-ka*, it expresses a directly perceived event which is terminated simultaneously with the act designated by the main verb. The morphological structure is more restricted in this sense, since the embedded LS must be completely unmarked for aspect. In terms of the semantic temporal hierarchy, we may say that the morphological clause shows the closer semantic relation between the two events, since it implies that the speaker physically perceives the whole event in question, from the beginning to the end, whereas the nominalized clause does not necessarily imply that the speaker perceives the whole event

but maybe only part of it. The requirement of simultaneity and positive polarity observed in immediate/direct perception suggests a core juncture, rather than a clausal juncture. The two construction types, however, are represented by different nexus relations; evidence for that comes from passivization.

The fact that the linked unit is overly marked by the accusative *-ta* in a nominalized complement suggests that the linked unit serves as a syntactic core argument of the matrix predicate. However, the nominalized complement does not act as the passive-PSA. When the passive suffix *-wa* is added to the perceived event in (38b), the actor is omitted and the whole embedded unit keeps its accusative marking, resulting in an impersonal construction. The embedded clause cannot be marked nominative (i.e., passive-PSA), as exemplified in (38b). Notice also that the embedded-PSA must keep its accusative status, otherwise the clause is ungrammatical (38c). The example in (38d) shows that the matrix core cannot take a resumptive pronoun when the complement is extraposed to the right; hence the nominalized complement functions as the non-PSA core argument of the matrix predicate.

- (38) a. [Ili uusi-ta bwana-m-ta ] jikkai-wa-k. (cf. (37c))  
 little child-ACC cry-CLM-ACC hear-PASS-PRFV  
 ‘(Someone) heard the child crying.’
- b.\* [Ili uusi-ta bwana-me] jikkai-wa-k.  
 ‘The child crying was heard.’
- c.\* [Ili uusi-Ø bwana-m-ta ] jikkai-wa-k.  
 ‘The child was heard crying.’
- d. Maria-Ø a jikka-k [ ili uusi-ta bwana-m-ta].  
 Maria-NOM 3SG:ACC hear-PRFV little child-ACC cry-CLM-ACC  
 ‘Maria heard it, the child cry.’

Because the linked unit is both a semantic and a syntactic argument of the matrix predicate, this yields core subordination. A simplified representation of this construction type is given in Figure 7.1.

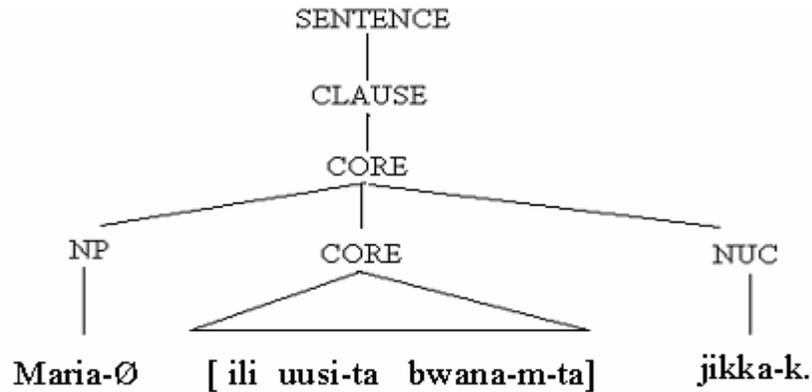


Figure 7.1: Core subordination for *Maria heard the child cry* in (37c)

The morphological structure behaves differently. When the passive suffix is added to the active clause in (37d), the highest ranked argument of the linked verb (the embedded PSA) serves as the passive PSA and hence is marked nominative, as shown in (39a). The clause in (39b) is ruled out because the highest ranked argument is marked as accusative. Notice, however, that there is no change in the semantic role of *ili uusi* ‘the child’ in (37c, d). It is the actor of crying, and it is not the undergoer of *jikka* ‘hear’ because in both examples what Maria heard is ‘the child crying’.

- (39) a. Ili uusi-Ø bwan-jikkai-wa-k. (cf. (37d))  
 little child-NOM cry-hear-PASS-PRFV  
 ‘The child was heard crying.’
- b. \* Ili uusi-ta bwan-jikkai-wa-k.  
 ‘The child was heard crying.’

The fact that one core argument of the embedded LS functions as the passive-PSA indicates that the embedded LS does not function as a syntactic core argument of the matrix core, but the embedded-PSA does. This property rules out subordinate nexus. The linked verb depends on the matrix core in terms of operator, since the linked verb cannot

carry TAM information. This suggests core co-subordination. The fact that the highest ranked argument of the embedded LS serves as the passive-PSA will be explained in terms of ‘raising’ constructions. These constructions are organized into two types: the ‘raising-to-subject’, e.g., *Aurelia seems to enjoy her new rebozo*, and the ‘raising-to-object’, e.g., *Fermin believes Lupe to have cooked the soup*. In English, each of these constructions has an alternative form in which there is a finite *that*-clause complement; in both constructions the core argument which is the PSA of the finite embedded clause in the alternative construction appears as a core argument in the matrix core. In RRG, the first type of constructions is termed ‘matrix-coding as PSA’ and the second type ‘matrix-coding as non-PSA’. Matrix-coding constructions will be explained in detail in § 7.2.4 and chapter 8.

The situation is slightly more complex for non-immediate perception constructions. First, the complement is a clause unit that can be independently modified by negation, TAM operators and temporal adverbs. It means that there is a fully tensed clause marked by –*u* or –*po* serving as a core argument of the perception verb. Second, even though the linked unit may appear core-internally (embedded), there is a strong tendency for the complement clause to appear outside the core. Third, when the linked unit appears outside the core, the matrix verb takes a resumptive pronoun co-indexed to it. In this particular case, the main core apparently takes three direct core arguments -the PSA, the accusative resumptive pronoun, and the complement clause-, resulting in an apparent violation to the Completeness Constraint.

According to the basic principle governing complex constructions, the unmarked linkage involves units at the same level of juncture, i.e. ‘symmetrical’ linkage.

Complementation is, therefore, the major exception to this basic principle. Languages have means of resolving this asymmetry, and one of these is extraposition. This can be seen in the pair of English examples below (VV&LP: 526-7).

- (40) a. I hate that she arrived late. Asymmetrical  
 b. I hate it, that she arrived late. Symmetrical

In (40a), the clause ‘that she arrived late’ functions as a direct core argument of the main verb; because there is a larger unit being linked to a smaller unit, it results in an ‘asymmetrical’ linkage. In the alternative form, the pronoun *it* is used in the core argument position and it refers to a *that*-clause which is outside of the core. As in English, there are two options in Yaqui. In (41a), the complement appears embedded in the main core; in (41b), the preferred option, the complement appears extraposed to the right and the main core obligatorily takes a resumptive pronoun as a core argument. The logical structures for each of these constructions are also provided (see VV&LP: 528).

- (41) a. Maria-Ø [ enchi kaba’i-m jinu-ka-‘u] bicha-k.  
 Maria-NOM 2SG:ACC horse-PL buy-PRFV-CLM see-PRFV  
 ‘Maria saw that you bought the horses.’
- a’. **hear’** (Maria, [**do’** (2sg, Ø) CAUSE [BECOME **have’** (kaba’im, 2sg)])])
- b. Maria-Ø a<sub>i</sub> bicha-k [ enchi kaba’i-m jinu-ka-‘u]<sub>i</sub>  
 Maria-NOM 3SG:ACC see-PRFV 2SG:ACC horse-PL buy-PRFV-CLM  
 ‘Maria saw it, that you bought the horses.’
- b’. **hear’** (Maria, [3sg, [**do’** (2sg, Ø) CAUSE [BECOME **have’** (kaba’im, 2sg)])])

On the one hand, the embedded LS in (41a’) links internally independently of the matrix LS, but as a whole it is part of the linking of the matrix LS; it occupies the second position of **hear’**. The complement is a core argument of the matrix LS in the semantics and in the syntax. However, this embedded unit cannot function as the passive-PSA. When *-wa* is added to the construction in (41a), the complement keeps its clause linkage

marking deriving an impersonal construction, e.g., *someone saw that you bought the horses* in (42a). Notice also that the highest ranked argument of the embedded LS must remain accusative. The passive suffix can also be added to the linked verb which can be interpreted as either, a passive or an impersonal clause.

- (42) a. [enchi kaba'i-m jinu-ka-'u] bit-wa-k. (cf. (41a))  
 2SG:ACC horse-PL buy-PRFV-CLM see-PASS-PRFV  
 'That you bought the horses was seen.'
- b.\* Empo [kaba'i-m jinu-ka-'u] bit-wa-k.  
 'That you bought the horses was seen.'
- c. Maria-Ø [kaba'i-m jinu-ka-wa-'u] bicha-k.  
 Maria-NOM horse-PL buy-PRFV-PASS-CLM see-PRFV  
 'Maria saw that the horses were bought / that someone bought the horses.'

Since there is a clause unit directly linked to a core, we are dealing with an asymmetrical core subordinate linkage, i.e. a larger unit linked to a smaller unit. The simplified representation for the clause in (41a) is illustrated in Figure 7.2.

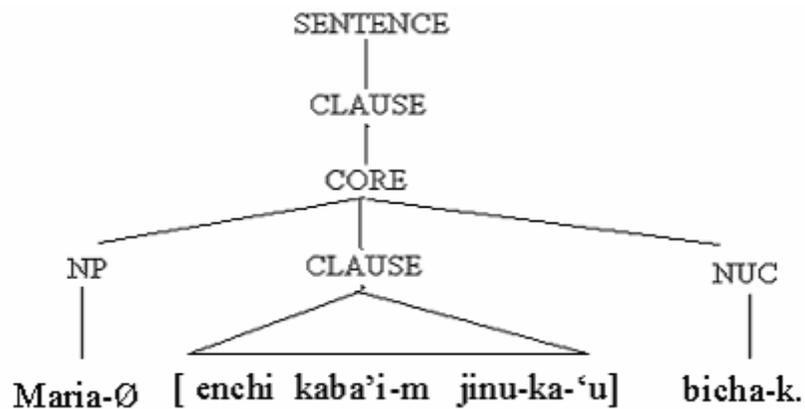


Figure 7.2: Asymmetrical core subordination for *Maria saw that you bought a horse* in (41a)

Although the same clause linkage type, core subordination, codes embedded direct perception expressed by nominalized complements in (37c), and embedded indirect perception expressed by a syntactic-like complement marked by *-'u* in (41a), the embedded LS has different status for each type: for direct perception constructions the

linked unit is a core (hence symmetrical linkage), whereas for indirect perception construction the linked unit is a clause (hence asymmetrical linkage).

On the other hand, in (41b) the resumptive pronoun *a* and the extraposed complement represent the same referent and function as the same argument (undergoer): they must fill the same argument position in the LS in (41b'). Despite being a semantic argument of the matrix verb, the complement clause is linked to a clause external position: it occurs as a direct daughter of the higher clause node. A piece of evidence that the linked clause occupies the right-detached position, rather than the post-core slot, comes from the fact that in Yaqui there is a pause between the main clause and the linked clause marked by -'u. More importantly, the resumptive pronoun serves as a core argument of the matrix predicate. When *-wa* is added to the clause in (41b), it is the resumptive pronoun that serves as the passive-PSA in (43a). The suffix *-wa* can also be added to the linked verb resulting in an impersonal clause.

- (43) a.  $A_i$             bicha-wa- k        [ enchi    kaba'i-m    jinu-ka-'u]<sub>i</sub>            (cf. (41b))  
           3SG:ACC see-PASS-PRFV    2SG:ACC horse-PL    buy-PRFV-CLM  
           'It was seen that you bought the horses.'
- b. Maria-Ø     $a_i$             bicha-k        [ kaba'i-m    jinu-ka-wa-'u]<sub>i</sub>  
           Maria-NOM 3SG:ACC see-PRFV    horse-PL    buy-PRFV-PASS-CLM  
           'Maria saw it, that someone bought the horses.'

In terms of juncture-nexus types, those clauses in the RDP with a resumptive pronoun in the matrix core show sentential subordination. They are sentential because the mother node to the RDP is the sentence node, rather than the clause node. The simplified representation of this linkage type is illustrated in Figure 7.3. Whereas the preference to posit the perception complement outside the core violates the basic principle that arguments in the logical structure of the verb are realized as core arguments, it does yield

a symmetrical linkage. This is another example of a syntactic-semantic mismatch: the logical structure of the embedded clause is semantically an argument of the matrix verb but syntactically it occurs outside the core (VV: 182).

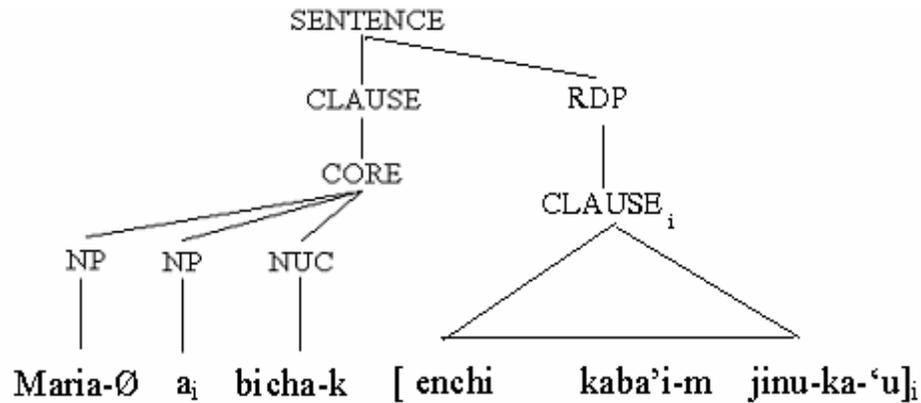


Figure 7.3: Symmetrical sentential subordination for *Maria saw it, that you bought a horse* in (41b)

Finally, one of the most peculiar characteristics of this type of constructions is that they may code the PSA of the complement as a direct core argument (undergoer). In (44a-b), the non-matrix PSA is coded as a core argument of the matrix core, whereas the linked clause keeps a pronoun co-indexed to it. The clause in (44c) is ruled out because the non-actor core argument of the matrix verb and the PSA of the linked verb are not coreferential. The clause in (44d) is bad because the linked clause is missing a syntactic core argument.

- (44) a. Ne      Goyo-ta<sub>i</sub>    bicha-k    [maska-ta    a<sub>i</sub>      yaa-ka-‘u]  
 1SG:NOM Goyo-ACC see-PRFV    mask-ACC 3SG:ACC make-PRFV-CLM  
 ‘I saw Goyo that he made the mask.’
- b. Goyo-Ø    enchi<sub>i</sub>    jikka-k    [ enchi<sub>i</sub>    kuta-ta    chukta-ka-‘u]  
 Goyo-NOM 2SG:ACC hear-PRFV    2SG:ACC wood-ACC cut-PRFV-CLM  
 ‘Goyo heard you that you had cut the wood.’
- c. \*Goyo-Ø    Peo-ta    jikka-k    [ enchi    kuta-ta    chukta-ka-‘u]  
 Goyo-NOM Peo-ACC hear-PRFV    2SG:ACC wood-ACC cut-PRFV-CLM  
 ‘Goyo heard Pedro that you had cut the wood.’

d.\* Goyo-Ø enchi<sub>i</sub> jikka-k [ kuta-ta chukta-ka-‘u]  
 Goyo-NOM 2SG:ACC hear-PRFV wood-ACC cut-PRFV-CLM  
 ‘Goyo heard you to have cut the wood.’

These constructions may be considered an intermediate stage between a direct perception of a situation and an indirect perception. According to my native speakers’ intuitions, they express a non-immediate perception event but, rather than having inferred it or deduced it from the circumstances, the speaker knows the source of the propositional content: the same entity that performs/undergoes the event in question. Therefore, their semantic representation follows the one presented in (39). The occurrence of the actor of the complement filling a syntactic slot on the matrix core specifies that the speaker acquired the knowledge ‘first-hand’. That is, even though this reading may be slightly hard for *sight*, it is completely understandable for *hearing*. In (44b) Goyo heard from you (you told him or he was part of the group to whom you talk to) that you have already cut the wood; he did not hear the event of cutting. This ‘first-hand’ acquisition of knowledge explains the ungrammaticality of (44c).

The phenomenon of copying out the actor of the embedded clause into the main core has been also observed for Lakhota (Van Valin 1977). The difference between the two languages is that in Yaqui the actor cannot be omitted, as exemplified in (44d). That is, although the undergoer of the matrix core and the actor/undergoer functioning as the PSA in the complement are coreferential, equi-deletion is not allowed.

In this complement type, each core takes its own syntactic core arguments meaning that there is no verbal slot for the complement clause to fill in the main core. Compared to the sentence in (41b) where the resumptive pronoun has a semantic function, a question immediately arises as to the function of the complement clause where the non-

main actor functions as a core argument of the main verb. The passive voice seems to provide some evidence. It is the PSA of the complement that functions as the passive-PSA; hence, it is marked as nominative. The complement may remain the same (45a) or it may be marked by *-kai* (45b), in which case the PSA of the complement must be omitted.

- (45) a. Empo       jikka-wa-k       [ enchi<sub>i</sub>   kuta-ta    chukta-ka-‘u]  
           2SG:NOM hear-PASS-PRFV  2SG:ACC wood-ACC cut-PRFV-CLM  
           ‘You were heard that you cut the wood (not simultaneous).’
- b. Empo       jikka-wa-k       [ kuta-ta    chukta-kai]  
           2SG:NOM hear-PASS-PRFV  wood-ACC cut-CLM  
           ‘You were heard cutting the wood (simultaneous).’
- c.\* Goyo-Ø    enchi    jikka-k    [ kuta-ta    chukta-ka-wa-‘u]  
           Goyo-NOM 2SG:ACC hear-PRFV  wood-ACC cut-PRFV-PASS-CLM  
           ‘Goyo heard you, that the wood was cut.’
- d. Goyo-Ø    e-t       jikka-k    [ kuta-ta    chukta-ka-wa-‘u]  
           Goyo-NOM 2SG:LOC hear-PRFV  wood-ACC cut-PRFV-PASS-CLM  
           ‘Goyo heard from you that the wood was cut.’

The fact that the syntactic-like complement in (45b) takes the same-PSA CLM *-kai* is due to the fact that the clause in (45a) may be ambiguous in that it either merely describes the speaker’s simultaneous perception of the event or further entails the registering of that information from the actor of the complement. The clause in (45b) is strikingly different in that it must involve a simultaneous, direct perception of the situation. If the passive suffix is added to the linked clause, the resulting clause (45c) sounds odd since it contradicts that fact that the complement PSA is the same participant as the undergoer of the matrix core. The construction is fine, however, if it concerns the reception of the propositional content of a speech act, in which case this participant is marked by the locative postposition *-t* (45d).

Thus, when the main core copies out the PSA of the complement the two events are slightly more integrated both semantically and syntactically. Semantically, the resulting sentence entails a closer relation not only in terms of the necessarily shared participant hierarchy, but also in terms of the causal hierarchy, i.e. the physical/verbal acquisition of knowledge rather than unspecified or inferred acquisition. In terms of the temporal hierarchy, however, the perception and perceiving events are not simultaneous (in contrast to direct perception) but sequential. Syntactically, the undergoer of the matrix core is obligatorily linked to the PSA of the complement clause. Accordingly, since each core takes its own direct core arguments and they may be independently marked for TAM operators, there is a juncture at the level of the clause. Each of the clauses links separately but the construction as a whole imposes a constraint on the linking: one of the arguments of the matrix core must be co-indexed to the PSA of the complement clause. Because the matrix core does not take a resumptive pronoun co-indexed to the linked clause and there is no pause between the matrix predicate and the complement unit, we may say that the complement clause appears in the post-core slot, rather than the right-detached position. This yields clausal subordination: the complement clause is linked to the clausal node. A simplified representation of the clause in (45b) is given in Figure 7.4.

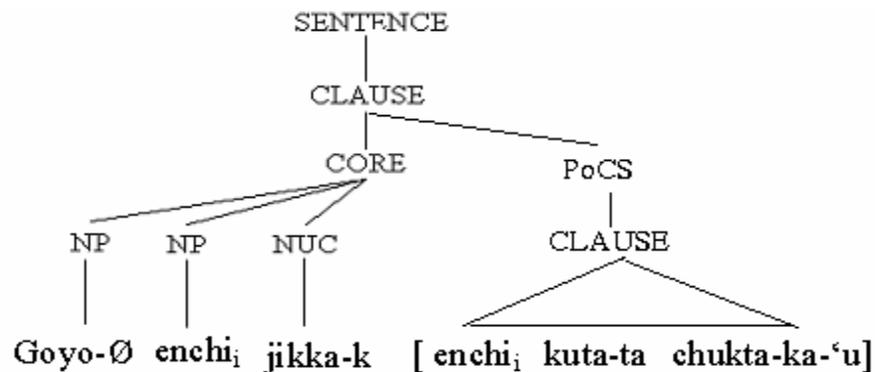


Figure 7.4: Symmetrical clausal subordination for  
*Goyo heard you, that you cut the wood* (45b)

In sum, direct/immediate perception in Yaqui correlates with a core co-subordinate combination when expressed by a morphological structure, and a core subordinate combination when expressed by the nominalized complement. In contrast, indirect/non-immediate perception can be expressed by core subordination (when embedded in the matrix core), sentential subordination (when the matrix core takes a resumptive pronoun and the complement appears in the RDP), and clausal subordination (when the matrix core copies out the embedded-PSA and the complement appears in the PsCS). The latter seems to share properties of both construction types: the matrix core takes a finite clause as a complement but the two units must share a semantic core argument.

## **7.2. Propositional attitude predicates**

Another major class of mental predicates corresponds to those verbs encoding the speaker's attitude regarding the content of the propositional complement. Many scholars distinguish propositional attitude predicates from cognitive predicates based on the notion of factivity (e.g., Kiparsky and Kiparsky 1970). Whereas with factive verbs, the complement is either always true or false depending on whether the verb is positive-factive, e.g., *know*, *learn*, *remember*, *forget*, or negative-factive, e.g., *pretend*, *lie*, non-factive verbs claim nothing about the truth value of the complement; that is, it could be true or false and still occur with the same verb. There are at least two major sub-groups of non-factive verbs. The first expresses the participant's attitude, e.g., *believe*, *think*, *trust*, *regret*. The second expresses the participant's opinion or judgment, e.g., *want*, *wish*, *agree to*. Regardless of whether or not the verb encodes a fact, recent studies have focused on the semantic relation of *think* with other cognition words, including all verbs for *believe*, *thinking*, *wanting*, *feeling*, *remembering* and even *knowing*, to such an extent

that for some languages it is hard to establish the semantic boundaries between these predicates.<sup>4</sup>

As in many other languages, the semantic notions of *belief* and *thought* are not clearly distinguished in the Yaqui lexicon. Whereas a verb like *suale* is glossed as ‘trust in, believe’, verbs like *maachia* and *‘ea* are equally glossed as ‘rely on, believe, think, assume, feel like’. Also, some uses of *‘ea* may encode emotional experiences, opinions, and even knowledge. For the purpose of this analysis, I gloss *maachia* as ‘believe’ and *‘ea* as ‘think’. The data on attitude predicates is organized in three sub-groups: those expressing a weaker commitment to the truth of the complement, e.g. *believe*, those expressing a stronger commitment to the truth of the complement, e.g., *think*, and those expressing some sort of intention or judgment regarding the content of the complement, e.g. *want*, *wish (that)*, *agree to*.

**7.2.1. The general notion of belief.** The notion of belief can be encoded by two verb forms, *maachia* and *suale*. The ‘multi-faced modal’ verbal suffix *maachi* (D&C: 66) may act as a main verb meaning ‘be visible, look like’ (46a), which has a ‘transitive’ counterpart ending in *-a* ‘dawn, appear, brighten up’ (46b-c). The experiencer participant acting as the PSA is marked as nominative, whereas the non-PSA oblique core argument is marked by the directional *-u*.

- (46) a. Jaisa maachi u kari-Ø?  
 How look the house-NOM  
 ‘How does the house look?’
- b. Jaibu kaa ma-maachia-Ø.  
 already NEG RED-dawn-PRES

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<sup>4</sup> In this vein, it has been proposed that there exists a universal semantic component THINK which can interact with other semantic primes like WANT, FEEL, KNOW, SAY, to explain the domain of mental predicates (Wierzbicka 1988; Van Valin and Wilkins 1993; Goddard and Wierzbicka 1994; Goddard 2003; Palmer 2003).

‘It is getting dark (Lit. not dawn).’

- c. U mukia-Ø bo’o-t e-u yeu maachia-ne.  
the die:STA-NOM road-LOC 2SG-DIR out appear-EXPE  
‘The death will appear to you on the road.’

The verb form *maachi* has been grammaticalized into a deontic modal operator expressing ability or permission, as well as some sort of weak obligation on the part of the speaker and a state of affairs, i.e., ‘ought’.<sup>5</sup>

- (47) a. Min-Ø, empo kaa kafe-ta sak-maachi?  
Fermin-NOM 2SG:NOM NEG coffee-ACC toast-ABLE  
‘Fermin, could you please toast the coffee?’
- b. U-me o’owi-m tuisi go’i-ta me’e-maachi.  
The-PL man-PL true coyote-ACC kill-UGHT  
‘The men truly ought to kill the coyote.’

More interesting is the fact that *maachia* has been also grammaticalized into some sort of epistemic marker encoding weak possibility of the speaker’s expectations and

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<sup>5</sup> This verb may be related to the Nahuatl *-mati* ‘to know’ which has a causative version *-machtia* coding the notion of ‘to cause someone to know’. In Yaqui, a directly related form *majta* is used to express the notion of teaching, and it may occur in two types of complements with different meaning. In the clauses in (i)-(ii), *majta* takes a non-finite, subjectless complement marked by *-po*; this type expresses the notion of ‘learn how to do something’ but it does not necessarily entail that the actor(s) actually do the event in question, i.e. I learnt how to dance because I have seen it. The clauses in (iii)-(iv), the most common type, express not only that the actor teaches himself/the undergoer how to do something, but she/they actually do it together. Thus, in one way or the other, *majta* still carries on the abstract meaning of knowledge concerning a certain state of affairs, i.e. *knowing* as having learnt, whereas *maachia* seems restricted to the ‘epistemological’ meaning of knowing as a ‘distancing’ component (Wierzbicka 1988: 136).

- (i) Nepo omo majta-k [ maso-yi’i-po ].  
1SG:NOM REFL teach-PRFV deer-dance-CLM  
‘I learnt /taught myself how to dance *venado*.’
- (ii) Aapo itom majta-k [ wakabak-ta jo’o-po ].  
3SG:NOM 1PL:ACC teach- PRFV wakabaki-ACC make-CLM  
‘She taught us how to cook wakabaki (she gave us the directions).’
- (iii) Nepo omo maso-yi’i-majta-k.  
1SG:NOM REFL deer-dance-teach-PRFV  
‘I taught myself to dance *venado*.’
- (iv) Aapo itom wakabak-ta jo’o-majta-k.  
3SG:NOM 1PL:ACC wakabaki-ACC make-teach-prfv  
‘(S)he taught us to cook wakabaki.’

believes regarding another participant's state of affairs. In fact, the verb form *maachia* is the most productive way to derive the general meaning of belief. Observe the examples below. When the two PSAs are coreferential, the clause may be interpreted as either a simple clause taking a modal operator (48a) or a complex clause (48b); the occurrence of a reflexive pronoun seems to be optional here. When the two PSAs are different, the mental verb denotes a propositional attitude regarding another state of affair. Here, the highest ranked argument of the linked verb must be accusative (48c); if genitive, the clause is interpreted as taking a modal operator (48d). The use of this verb cannot be extended to mean 'to believe (in) someone/what someone say' as shown in (48e).

- (48) a. Ne            kaba'i-ta            jinu-maachi-Ø.  
           1SG:NOM horse-ACC here    work-SHOULD-PRES  
           'I should buy the horse.'
- b. Ne            (ino)            tui    kaba'i-ta            jinu-maachia-Ø.  
           1SG:NOM 1SG:REFL good horse-ACC here buy-believe-PRES  
           'I believe I would buy a good horse.'
- c. Ne            enchi            tui    kaba'i-ta            jinu-maachia-Ø.  
           1SG:NOM 2SG:ACC good horse-ACC buy-believe-PRES  
           'I believe you to have bought a really good horse.'
- d. Ne            em            kaba'i-ta            jinu-maachi(a).  
           1SG:NOM 2SG:GEN horse-ACC buy-ABLE  
           'I am able/I should buy your horse.'
- e. \*Ne Peo-ta(-u) maachia.  
           'I believe in Pedro.'

Although *maachia* may function as a main verb, when acting as a complement-taking predicate it must occur directly adjacent to the non-matrix verb. Any other arrangement is ungrammatical as shown in (49b-c).

- (49) a. Ne            Peo-ta            Joan-ta-u            kaba'i-ta            nenki-maachia-Ø.  
           1SG:NOM Peo-ACC Joan-ACC-DIR horse-ACC sell-believe-PRES  
           'I believe Pedro to have sold the horse to Juan.'

- b. \*Ne maachia-Ø [Peo-ta Juan-ta-u kaba'i-ta nenka]  
 c. \*[Peo-ta Joan-ta-u kaba'i-ta nenka] ne maachia-Ø.

In its epistemic use, *maachia* expresses a cautiously personal opinion regarding a state of affairs that may or not have taken place. The clause shows a strong tendency to be unmarked for TAM (i.e., present tense); only the past continuative *-n* seems to be allowed but still its appearance is scarce. The non-matrix verb must also be unmarked, although the two events may be independently modified by temporal adverbs, as illustrated below. This operator restriction suggests that *maachia* behaves as an ‘epistemic qualifier’ (Wierzbicka, to appear; cited in Goddard 2003: 118), such as the use of *I believe* in English without complementizer and restricted to first person present tense, e.g. *I believe you can finish on time.*<sup>6</sup>

- (50) a. Joan-Ø tuuka enchi siim-maachia-Ø.  
 Juan-NOM yesterday 2SG:ACC go-believe-PRES  
 ‘Juan believes you to have left yesterday [i.e., left].’  
 a’.\*Joan-Ø tuuka ne siika-maachia-Ø.  
 ‘Juan believes you left yesterday.’

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<sup>6</sup> There are two more extremely common clauses that seem to express an ‘epistemic qualifier’ for qualifying one’s statements, for hedging one’s assertion, and for differentiating the strength of one’s assent to a proposition (Goddard 2003: 121). The first one involves the verbal particle *bena* ‘it seems, thought, believed that’. Although the exact interpretation of *bena* is far from established, what is clear is that the speaker is distancing herself from other people’s opinion, i.e., she is not expressing *er belief*, but it should be understood as a ‘public’ or shared thought.

- (i) Empo kaba'i-ta jinu-ka-m-ta bena, luturia?  
 2SG:NOM horse-ACC buy-PRFV-CLM-ACC seem true  
 ‘It seems that you bought a horse, is it true?’

The second one involves the adverbial phrase *jiba-tua-(mak)* (lit. always-true-with) meaning ‘certainty, reliability, with true safeness (Sp. *con toda seguridad, yo estoy seguro, creo firmemente que*).’ Although any reference to the speaker is completely avoided in the clause, this is strongly ‘speaker-oriented’, e.g. *I certainly believe.*’ The position in the clause of *bena* and *jibatua* is fixed.

- (ii) Jibatua Maria-Ø u-ka wakabak-ta ya-k.  
 certainty Maria-NOM the-ACC wakabaki-ACC make-PRFV  
 ‘It is certain (for me that) Maria cooked the wakabaki.’

- (iii) \*Jibatua ne Maria-ta u-ka wakabak-ta ya-k.  
 ‘I certainly believe Maria cooked the wakabaki.’

- b. Ne           yooko       Pedro-ta    yi'i-maachia-n.  
 1SG:ACC tomorrow Pedro-ACC dance-believe-PASTC  
 'I believed Pedro will be dancing tomorrow.'
- b'.\*Ne yooko Pedro-ta yi'i-ne-maachia-(n).  
 'I believe Pedro would/will dance tomorrow.'
- c. Nim        ae-Ø           tajka'i-m ne        bwa'a-maachia-Ø  
 1SG:GEN mother-NOM tortilla-PL 1SG:ACC eat-believe-PRES
- ta Ivan       am        bwa'a-ka.  
 but Ivan-ACC 3PL:ACC eat-PRFV  
 'My mother believes I ate the tortillas, but Ivan did.'

The other verb expressing the meaning of belief is *suale* 'believe in, trust in' (51a). This verb has also been grammaticalized into a shorter form *-le* expressing a presumptive (PRESUM) modal marker. As a modal, *-le* can be added to nouns meaning 'to be proud of, to presume or give oneself airs' (51b), and to verbs meaning 'to presume of, to think to be, to suppose' (51c-d). D&C (p. 306) comment that *-le* involves both the idea of 'contrary to the expected state of affairs' and some sort of 'socially inappropriate to some extent', and those two characteristics are what distinguish *-le* from the verb form *'ea* 'think'. Even though the whole clause in (51d) lacks TAM markers, the addition of *-le* to a nonfinite verb suggests that the event took place sometime in the past. The occurrence of a reflexive pronoun co-indexed to the experiencer is common, although optional.

- (51) a. Ne           enchi        suale-Ø.  
 1SG:NOM 2SG:ACC believe-PRES  
 'I believe you.'
- b. Aapo       omo kaaro-le.  
 3SG:NOM REFL car-PRESUM  
 'He is proud of his car.'
- c. Edgar-Ø   aa        kaba'i-ta-t    omo   tamaki-le.  
 Edgar-NOM be able horse-ACC-LOC REFL ride-PRESUM  
 'Edgar is proud that he is able to ride on the horse.'

- d. Ne            baeje'ela em            maala-ta            tomi-ta            enchi            mak-le.  
 1SG:NOM time ago 2SG:GEN mother-ACC money-ACC 2SG:ACC give-PRESUM  
 'It seems to me that your mother gave you money a while ago (is it true?).'

In its propositional attitude sense, *suale* takes the same type of syntactic-like complement as indirect perception verbs. As shown below, the content of the belief is a proposition and is realized as a fully tensed clause, the canonical realization of proposition (VV&LP: 483). That is, in contrast to *maachia*, *suale* is not restricted to a bare form as a complement. Although the complement may appear embedded in the main clause (52a), it most commonly appears in the right-detached position. Notice the occurrence of the resumptive pronoun in (52b) filling a syntactic slot in the main core. What is not possible for *suale* is to be directly adjacent to the basic verb. As with *-maachia*, the non-matrix PSA must be marked as accusative; otherwise, the clause is interpreted as a relative clause (52c).

- (52) a. Peo-Ø    [ kaba'i-ta    enchi    jinu-ka-'u]            suale-n.  
 Peo-NOM    horse-ACC    2SG:ACC    buy-PRFV-CLM    believe-PASTC  
 'Pedro believed that you had bought a horse.'
- b. Peo-Ø    a<sub>i</sub>            suale-Ø            [ kaba'i-ta    enchi    jinu-ka-'u]<sub>i</sub>  
 Peo-NOM    3SG:ACC    believe-PRES    horse-ACC    2SG:ACC    buy-PRFV-CLM  
 'Pedro believe it, that you bought a horse.'
- c. Peo-Ø    [ kaba'i-ta    em            jinu-ka-'u]            suale-n.  
 Peo-NOM    horse-ACC    2SG:GEN    buy-PRFV-CLM    believe-PASTC  
 'Pedro believed on the horse that you bought.'

When the complement unit is extraposed to the right, *suale* can also take an accusative NP as a core argument referring to the 'source' of the content of the belief. The source can be the embedded-PSA as in (53a) or a third party that is not involved in any sense with the event coded in the complement (53b). Including the 'source' of the belief is impossible in a construction taking *-maachia*.

- (53) a. Peo-Ø enchi<sub>i</sub> suale-Ø [ enchi<sub>i</sub> jaibu  
 Peo-NOM 2SG:ACC believe-PRES 2SG:ACC already  
 Pesio-u yebis-ka-‘u].  
 Hermosillo-DIR arrive-PRFV-CLM  
 ‘I trust you, that you already arrived to Hermosillo.’
- b. Si ne junen a-u jia-o, Peo-Ø ne sual-ne  
 if 1SG:NOM thus 3SG-DIR say-CLM Peo-NOM 1SG:ACC believe-EXPE  
 [ enchi kaba’i-ta jinu-ka-‘u].  
 2SG:ACC horse-ACC buy-PRFV-CLM  
 ‘Only if I tell him, Pedro would trust me that you bought a horse.’
- c.\* Peo-Ø ne enchi kaba’i-ta jinu-maachia-Ø.  
 ‘Pedro believes me (that) you bought a horse.’

It has been observed that propositional attitude verbs differ from factive verbs with respect to the interpretation of negation (cf. Lakoff 1969; Labbé 2002): whereas English and French verbs *say/dire* or *know/savoir* receive different readings depending on whether negation is located in the matrix core or the complement clause, attitude verbs convey the same message regardless of the position of the negative. The same is observed in Yaqui. Regardless of the position of the negative *kaa*, the meaning of the whole clause remains the same: what I believe in (54a-b) is that you are staying, and what Pedro believes in (54c-d) is that Goyo doesn’t own a horse.

- (54) a. Ne kaa enchi Torim-meu wee-maachia-Ø.  
 1SG:NOM NEG 2SG:ACC Torim:PL-DIR walk-believe-PRES  
 ‘I don’t believe you go to Torim.’
- b. Ne enchi Torim-meu kaa wee-maachia-Ø.  
 1SG:NOM 2SG:ACC Torim:PL-DIR NEG walk-believe-PRES  
 ‘I believe you do not go to Torim.’
- c. Peo ka a<sub>i</sub> suale-n [Goyo-ta kaba’i-ta jinu-ka-‘u]<sub>i</sub>  
 Peo-NOM NEG 3SG:ACC believe-PASTC Goyo-ACC horse-ACC buy-PRFV-CLM  
 ‘Pedro didn’t believe it, that Goyo bought a horse.’

- d. Peo a<sub>i</sub> suale-n [Goyo-ta kaa kaba'i-ta jinu-ka-'u]<sub>i</sub>  
 Peo-NOM 3SG:ACC believe-PASTC Goyo-ACC NEG horse-ACC buy-PRFV-CLM  
 'Pedro believed it, that Goyo didn't buy a horse.'

Yaqui shows two alternative constructions to express a weaker commitment to the truth of the complement content. One of these concerns a tightly bound morpho-syntactic structure taking a bare form followed by *maachia*. The other concerns a looser syntactic construction where the main core *suale* takes a clausal complement which can be embedded or extraposed to the right.

**7.2.2. The general notion of thinking.** The verb form 'ea ~ 'ee encode cognition, mental process, mental experiences, and even emotional experiences on the part of the speaker. Because of this, 'ea can be variously glossed as 'think about, reflect on, rely on, make a judgment, think that', among other senses. All of these meanings draw on an intransitive form, which takes a non-actor argument marked by the locative postposition -t ~ *chi*; there is a corresponding transitive stem 'eeiya which can be glossed as 'to esteem, to love, to think highly of X' (D&C: 367) which takes an accusative NP as a core argument.

- (55) a. Nepo e-t 'ea-n.  
 1SG:NOM 2SG-LOC rely-PASTC  
 'I relied on you.'
- b. Nepo enchi 'eeya-n.  
 1SG:NOM 2SG:ACC esteem-PASTC  
 'I esteemed you.'

The intransitive version 'ea may function as a main verb, as modal operator, as a matrix verb, as a bound verb, and as the base form for other mental state verbs. The transitive version is mostly restricted to the use as a main verb, but it may also take a role in compound verb forms such as *junuen-'eeiya* 'wish that' and *ju'un'eeiya* 'know that'. 'ea also encodes a weak obligation (i.e., should, would to), as well as a hypothetical

possibility. In this respect, D&C (p. 303-5) argued that ‘*ea* is a productive suffix marking subjunctive mood, especially when followed by the past continuative suffix *-n*.

(56) a. Joan-Ø banko-ta ya’a-‘ean.  
 Juan-NOM bench-ACC make-SHOULD  
 ‘Juan should make a chair (he does not have anywhere to sit).’

b. Ne tome-k-o, pajko-u-bicha ne wee-‘ean.  
 1SG:ACC money-HAVE-IF party-DIR-toward 1SG:NOM go-SBJ  
 ‘If I had money, I would go to the party.’ (D&C: 303)

‘*ea* is clearly the most basic and productive verb in the Yaqui lexicon for cognition. When acting as a complement-taking predicate, this mental verb expresses a range of meanings from *thinking* and *feeling*, to *knowing*, depending upon the construction it appears in. For instance, when ‘*ea* follows the non-matrix verb, it generally conveys the notion of ‘think about’ (57a); when it is preceded by a complement marked by *-benasi* ‘thus’, the sense is ‘I have the feeling of’ (57b); when it takes a ‘*u*-complement, it encodes the notion of ‘think that, guess’ (57c). The more extreme cases are two lexicalized forms: *junuen-‘ea* in (57d), referring to opinions, intentions or judgments based on the speaker’s experiences, and *ju’unea* in (57e), encoding firmly held beliefs that are taken for granted.<sup>7</sup>

(57) a. Ne Peo-ta kaba’i-ta jinu-ka-t’ea-n.  
 1SG:NOM Peo-ACC horse-ACC buy-PRFV-CLM-think-PASTC  
 ‘I thought Pedro bought a horse.’

b. Wa’ame o’owi-m [kaa tuisi wakabaki-ta bwase-ka-benasia] ‘ea-Ø.  
 these:PL man-PL NEG good wakabaki-ACC cook-PRFV-CLM think-PRES  
 ‘These men have the feeling that the wakabaki was not well cooked.’

c. Ne (nuen) ‘ea-Ø [Aurelia-ta yooko yi’i-ne-‘u].  
 1SG:NOM thus think-PRES Aurelia-ACC tomorrow dance-EXPE-CLM  
 ‘I think that Aurelia will dance tomorrow (but I am not sure).’

<sup>7</sup> D&C (fn.2: 368) only refer to the first case and barely mention the complex stem *ju’unea*. Another factive verb that seems to have incorporated a discourse particle is *junuen jiia* ‘say like this’ (§ 7.4).

- d. Ne junuen-'ea-Ø [ Aurelia-ta yooko yi'i-ne-'u].  
 1SG:NOM thus-think-PRES Aurelia-ACC tomorrow dance-EXPE-CLM  
 'I wish that Aurelia would dance tomorrow (\*but I am not sure).'
- e. Ne ju'unea-Ø [ Aurelia-ta yooko yi'i-ne-'u].  
 1SG:NOM know-PRES Aurelia-ACC tomorrow dance-EXPE-CLM  
 'I know that Aurelia will dance tomorrow (\*but I am not sure).'

Although D&C claimed that *'ea* tends to take a finite complement marked by *-ti ~ t* as in (57a) above, the authors do not specify what exactly is the status of this marker and why this connector is so limited to this opinion predicate. A first thought is that *-t(i)* may be a grammaticalized form of either a reduced form of the quotation suffix *-tia* 'say', which would be consistent with other languages where quotation markers may also be employed to report mental perception (see Klamer 2000 and references cited there); or a 'frozen' version of the locative postposition *-t ~ chi* 'on, at'.<sup>8</sup> There is some evidence for the last possibility. First, the locative postposition marks the non-actor core argument when *'ea* acts as a main verb; see (55a) above. Second, the example in (58a) shows a relative clause marked by *-t* serving as a core argument of the main verb. Third, although extremely few in number, there are cases where the complement is marked by another locative postposition such as *-betana* 'from' (58b) and *-po* 'on' (58c).

- (58) a. Nim achai karo-ta [nenki-wa-ka-m-ta-t] 'ea-n.  
 1SG:GEN father car-ACC sell-PASS-PRFV-ACC-LOC think-PASTC  
 'My father is thinking about the car's selling (how much money he will get).'
- b. Jaisa eme'e 'ea-Ø [u-ka Maria-ta emo-u tewa-ka-'u-betana]?  
 What 2PL:NOM think-PRES the-ACC Maria-ACC 2PL-DIR tell-PRFV-CLM-LOC  
 'What do you (pl) think about what Maria told you.'

<sup>8</sup> D&C (p. 144) argued that *-ti* links a word or phrase that serves as a verbal complement to onomatopoeic expressions, direct quotations, and the content of mental verbs. In my data, *-ti* only marks the complement of *'ea*. What is interesting is the fact that this complement type systematically precedes the main core, the syntactic slot where accusative NPs usually appear. This opens another possibility: the fact that *-ti* in these complement clauses relates to the absolutive marker on noun *\*-ti* on nouns in Proto Uto-Aztecan.

- c. Jaisa eme'e 'ea-Ø [u-ka Maria-ta emo-u tewa-ka-po]?  
 What 2PL:NOM think-PRES the-ACC Maria-ACC 2PL-DIR tell-PRFV-CLM  
 'What do you (pl) think about what Maria told you.'

No referential restrictions hold between the linked unit marked by *-t* and the matrix predicate which is immediately adjacent to the non-matrix event. When the PSA of the main core and the PSA of the complement are coreferential, a reflexive pronoun appears within the complement (59a). When they are non-coreferential, the main PSA is nominative and the embedded-PSA is accusative (59b); genitive pronouns are disallowed. When a reflexive pronoun is a non-coreferential-PSA complement, the reflexive must be co-indexed with the embedded-PSA (59c).<sup>9</sup>

- (59) a. Nim ae<sub>i</sub> tuisi a omo<sub>i</sub> ye'e-t-'ea-Ø bweta ka luturia.  
 2SG:GEN mother good 3SG REFL dance-CLM-think-PRES but NEG true  
 'My mother<sub>i</sub> thinks about she<sub>i</sub>/herself dance pretty good, but it is not true!'
- b. Nim ae enchi si tuisi ye'e-t-'ea-Ø.  
 2SG:GEN mother 2SG:ACC very good dance-CLM-think-PRES  
 'My mother thinks that you dance pretty good.'
- c. Tuuka Peo-Ø<sub>i</sub> enchi<sub>j</sub> omo<sub>j</sub>/\*<sub>i</sub> bekta-ka-t-'ea-n.  
 Yesterday Pedro-NOM 2SG:ACC REFL shave-PRFV-CLM-think-PASTC  
 'Yesterday, Pedro though that you shaved yourself.'

This mental verb can also take a complement marked by *-benasi* 'in this way, like this' or a complement marked by *-u*. When taking the first type of complement, the whole clause may be translated into Spanish as *sentir* 'feel', *tener la corazonada de* 'to

<sup>9</sup> D&C (1999: 369) present an example where a subject clitic appears between the two verbs, suggesting that the syntactic linkage of these events is not as tight as the one with *maachia*. But notice that in this particular example the embedded-PSA appears in nominative case.

[Empo a ya'a-ne-ti] ne 'ea-Ø.  
 2SG:NOM 3SG:ACC make-EXPE-CLM 1SG:NOM think-PRES  
 'You will do it, I think.'

I also found a few occurrences of *'ea* taking a complement marked by the Spanish *que* 'that' and, again, the embedded-PSA is marked as nominative, suggesting a different construction type, i.e. parenthetical construction.

Ne nuen 'ea-Ø [ke empo kaba'i-ta etbwa-k].  
 1SG:NOM thus think-PRES that 2SG:NOM horse-ACC steal-PRFV  
 'I thus think that you stole the horse.'

have the feeling of’, *a X le parece que* ‘it seems to X that’. The complement must be embedded in the main core (60a-b), in the syntactic slot of a non-PSA core argument. If the complement is extraposed (60c), the construction turns out ungrammatical.

- (60) a. Aapo [lautia emo siim-bae-benasia] = ‘ea-Ø.  
 3SG:NOM early REFL go-DESID-CLM think-PRES  
 ‘She has the feeling of wanting herself to go early.’
- b. Lupe-Ø [lautia enchi siim-benasia] = ‘ea-Ø.  
 Lupe-NOM early 2SG:ACC go-CLM think-PRES  
 ‘Lupe feels that you would leave early.’
- c.\* Lupe-Ø e’a-Ø [lautia enchi siim-benasia].

When taking a complement marked by –‘*u*, the matrix core tends to be preceded by the discourse particle *junuen* ~ *nuen* ‘thus, like this’. Although the linked unit appears at the end of the clause, the matrix core cannot take a resumptive pronoun as a core argument (61b). This restriction against an ‘extra’ syntactic argument suggests that the complement is in the post-core slot, rather than the right-detached position, and is not only a semantic argument of the verb but also a core argument.

- (61) a. Ite nuen ‘ea-n [enchi jaibu Buffalo-u-bicha siika-’u].  
 1PL:NOM thus think-PASTC 2SG:ACC already Buffalo-DIR-toward go:PRFV-CLM  
 ‘We thought like this that you have already left to Buffalo.’
- b.\* Ite a<sub>i</sub> nuen ‘ea-n [enchi jaibu Buffalo-u-bicha siika-’u]<sub>i</sub>  
 ‘We thought it, that you have already left for Buffalo.’

When the notion of thinking is expressed by a morphological structure as in (62a-b), the linked verb may be unmarked or be marked by the perfective –*k(a)*, rarely by the expected modal –*ne*, but never by the past continuative. This suggests that the linked unit consists of a core, rather than a clause. When the matrix predicate takes a complement marked by –‘*u* or –*benasia*, the linked unit is a finite clause. In (62c-d), the embedded verb can be marked by both the perfective and the past continuative.

- (62) a. Goyo-Ø Maria-ta teebe-t-‘ea-n.  
 Goyo-NOM Maria-ACC be tall-CLM-think-PASTC  
 ‘Goyo thought that Maria is tall.’
- b. Goyo-Ø Tibu-ta wakas-ta etbwa-ka-t-’ea-n.  
 Goyo-NOM Tibu-ACC cow-ACC steal-PRFV-CLM-think-PASTC  
 ‘Goyo thought that Tibu stole the cow.’
- c. Maria-Ø nuen ‘ea-Ø [tuuka tuisi Goyo-ta ye’e-ka-‘u].  
 Maria-NOM thus think-PRES yesterday pretty Goyo-ACC dance-PRFV-CLM  
 ‘Maria thinks like this that yesterday you danced pretty good.’
- d. Maria-Ø [enchi tuisi ye-ye’e-kan-benasia] = ’ea-Ø.  
 Maria-NOM 2SG:ACC pretty RED-dance-PASTC-CLM think-PRES  
 ‘Maria is of the opinion that you dance pretty good.’

Regardless of the position of the negative particle, both clauses in (63a-a’) roughly mean that the speaker believes that Pedro remained awake all night.

- (63) a. Ne [enchi tua kaa kocho-ka-benasia] = ’ea-Ø.  
 1SG:NOM 2SG:ACC really NEG sleep-PRFV-CLM think-PRES  
 ‘I think that you did not sleep at all.’
- a’. Ne kaa [enchi kocho-ka-benasia] = ’ea-Ø.  
 1SG:NOM NEG 2SG:ACC sleep-PRFV-CLM think-PRES  
 ‘I don’t think that you slept.’

Therefore, the mental predicate coding the general notion of thinking appears with three complement types. In the first one, ‘*ea*’ appears adjacent to the non-main verb and the two are linked by the CLM *-t ~ ti* expressing the notion of ‘think that’; in the second one, it takes an embedded complement clause marked by *-benasi* meaning ‘I feel, have the feeling that’; in the third one, it takes a complement clause marked by *-u* which appears at the end of the sentence but within the main core ‘I think like this’, i.e., post-core slot. In contrast to other complement-taking predicates, ‘*ea*’ requires a fixed order among its constituents.

**7.2.3. The general notion of *want to*.** One more semantic notion that expresses the speaker’s attitude regarding a state of affairs is the concept of desire as in *Maria wants*

*Pedro to dance at the party.* Again, Yaqui shows two predicates encoding this notion, the bound form *-’ii’aa* and the lexicalized form *junuen-’ea* (Lit. thus-think). According to D&C (p. 299), the verbal suffix *-’ii’aa* comes from the main verb *jiia* ‘say’. All of the *-’ii’aa* usages are based on what somebody says she wants, i.e., a polite, indirect request. Although this may suggest the notion of causation, it differs from the direct causative *-tua*, but not from the jussive *-sae*, in terms of semantic implication. Whereas *-tua* entails the successful realization of the caused event, neither *-sae* nor *-’ii’aa* imply such successful realization.

(64) a.\* Ne        ili    uusi-ta    kot-tua-k        bweta ka a        kocho-k.  
 1SG:NOM little child-ACC sleep-CAUSE-PRFV but NEG 3SG:ACC sleep-PRFV  
 ‘I forced the child to sleep but \*he didn’t sleep.’

b. Lupe-Ø        enchi<sub>i</sub>    uba-sae-k        empo<sub>i</sub>    into  
 Lupe-NOM 2SG:ACC bath-ORDER-PRFV 2SG:NOM and  
  
 kaa a        yaa-bae-Ø.  
 NEG 3SG:ACC make-DESID-PRES  
 ‘Lupe ordered you to take a bath, but you do not want to do it.’

c. Em        achai Aurelia-ta    enchi    jup-’ii’aa-n        bweta  
 2SG:GEN father Aurelia-ACC 2SG:ACC marry-want-PASTC but  
  
 empo    Lupe-ta    jupa-k.  
 2SG:NOM Lupe-ACC marry-PRFV  
 ‘Your father wanted you to marry Aurelia but you married Lupe.’

This can be also explained in terms of the degree of control ceded to the actor of the linked verb, as well as the degree of intention of the speaker regarding the state of affairs coded in the complement. That is, *-tua* entails a successful implication where the causer succeeds in imposing her intent on the causee; with *-sae*, the causee may display a certain degree of control, since she might refuse to perform the event in question, something impossible with *-tua*; with *-’ii’aa*, the causee retains her control. In other

words, *-tua* shows a stronger agentive, controlling manipulation while *-’ii’aa* demonstrates a weaker, intended manipulation. The degree of agentive control is not morphologically encoded in Yaqui, since the highest ranked argument in the linked verb is always marked as accusative.

Furthermore, the verb *junuen-’ea* encodes the speaker’s positive opinion about the content of the complement proposition, i.e., ‘think like this, wish this, agree to’, in the post-core slot. This predicate takes a syntactic-like complement marked by *-’u* and, less frequently, the purposive postposition *-betchi’ibo*, without apparent change of meaning.

- (65) a. Ne kari-ta enchi tu’ute-’ii’aa-Ø.  
 1SG:NOM house-ACC 2SG:ACC clean-want-PRES  
 ‘I want you to clean the house.’
- b. Ne junuen’ea-Ø [ enchi kari-ta tute-ne-’u].  
 1SG:NOM thus-think-PRES 2SG:ACC house-ACC clean-EXPE-CLM  
 ‘I wish that you would clean the house.’ / ‘I agree that you clean the house.’
- c. Ne junuen’ea-Ø [ enchi kari-ta tute-ne-betchi’ibo].  
 1SG:NOM thus-think-PRES 2SG:ACC house-ACC clean-EXPE-CLM  
 ‘I wish that you would clean the house.’
- d. \* Ne a<sub>i</sub> junuen’ea-Ø [ enchi kari-ta tute-ne-’u]<sub>i</sub>  
 ‘I wish it, that you would clean the house.’

The fact that the main core cannot take a resumptive pronoun, as demonstrated in (65d), suggests that the complement functions as a core argument of the matrix verb. This predicate, however, may take an extra core argument marked by the comitative *-mak* (66a); this new argument assumes the role of an addressee so that in this context *junuen-’ea* is understood as ‘agree with X regarding Y’. The incorporation of such a participant is not possible with *-’ii’aa*.

- (66) a. Nim achai kobanao-ta-mak junene’a-Ø  
 1SG:NOM father governor-ACC-COM wish-PRES

[ enchi Aurelia-ta jup-ne-betchi'ibo].  
 2SG:ACC Aurelia-ACC marry-EXPE-CLM  
 'My father agrees with the governor in order for you to marry Aurelia.'

- b. \*Nim achai kobanao-ta-mak enchi Aurelia-ta jup-'ii'aa-Ø  
 'My father wants with the Governor that you marry Aurelia.'

These attitude verbs denote the speaker's willingness towards an event or state of affairs to take place sometime in the future (irrealis/potential). This future-oriented perspective is corroborated because the verb in the linked verb must be a bare form; if the linked verb takes the past continuative (67b') or the expected suffix (67c'), the clause turns out ungrammatical. Temporal adverbs, however, may modify the main core and the non-main core independently.

- (67) a. Goyo-Ø Aurelia-ta pajko-po yi'i-'ii'aa-Ø.  
 Goyo-NOM Aurelia-ACC party-LOC dance-want-PRES  
 'Goyo wants that Aurelia dance at the party (= she has not danced yet).'
- b. Goyo-Ø Aurelia-ta tuuka yi'i-'ii'aa-n.  
 Goyo-NOM Aurelia-ACC yesterday dance-want-PASTC  
 'Goyo wanted that Aurelia would dance yesterday (= she didn't dance).'
- b'.\*Goyo-Ø Aurelia-ta tuuka pajko-po ye'e-n-'ii'aa-n.  
 'Goyo wanted (that) Aurelia danced yesterday.'
- c. Goyo-Ø Aurelia-ta yooko yi'i-'ii'aa-ne.  
 Goyo-NOM Aurelia-ACC tomorrow dance-want-EXPE  
 'Goyo wants Aurelia to dance tomorrow.'
- c'.\*Goyo-Ø Aurelia-ta yooko yi'i-ne-'i'a-ne.  
 'Goyo will want Aurelia would dance tomorrow.'

*Junuen-'ea* allows the complement verb to be unmarked or marked by the expected suffix *-ne*. The clause in (68c) is ruled out because the linked verb is marked by the perfective suffix *-ka*. Temporal adverbials modifying the linked verb are also allowed.

- (68) a. Goyo junene'a-Ø [ Aurelia-ta yooko yi'i-ne-betchi'ibo].  
 Goyo-NOM wish-PRES Aurelia-ACC tomorrow dance-EXPE-CLM  
 'Goyo wishes that Aurelia would dance tomorrow (=she has not danced).'

- b. Goyo junene'a-k [ Aurelia-ta pajko-po yi'i-(ne)-'u].  
 Goyo-NOM wish-PRFV Aurelia-ACC party-LOC dance-EXPE-CLM  
 'Goyo wished that Aurelia would dance at the party (=she didn't dance).'
- c.\* Goyo junene'a-k [ Aurelia-ta pajko-po ye'e-ka-'u].  
 'Goyo wished that Aurelia danced at the party (=she danced).'

Moreover, these two attitude predicates allow the occurrence of the negative particle inside or outside the main core without changing the truth value of the whole sentence.

What Goyo wants in (69a-a') is that somebody else beside Ivan cut the wood.

- (69) a. Goyo-Ø kaa kuta-m Ivan-ta chukta-'ii'aa-Ø.  
 Goyo-NOM NEG wood-PL Ivan-ACC cut-want-PRES  
 'Goyo does not want Ivan to cut the wood.'
- a'. Goyo-Ø kuta-m kaa Ivan-ta chukta-'ii'aa-Ø.  
 Goyo-NOM wood-PL NEG Ivan-ACC cut-want-PRES  
 'Goyo wants Ivan not to cut the wood.'

That is, whereas –'ii'aa involves a kind of semantic combination involving the notion of desire and speech act verb (i.e., WANT and SAY, in terms of Wierzbicka's semantic primitives), *junuen'ea* expresses the notion of having an opinion in mind and saying it (i.e., THINK and SAY). A piece of evidence for this distinction is that the former may be translated into Spanish using an utterance verb, e.g. *dijo que quería que* 'she said that she wanted that', whereas the latter may be translated using a judgment verb, e.g. *estar de acuerdo* 'agree that' or an opinion verb, e.g., *le parecía* 'think, it seems for X that'. If this is so, the Yaqui speaker may choose between venturing a weak intention about the actor participant of the complement, and venturing a judgment about the even as a whole.

**7.2.4. Juncture-nexus types of propositional attitude predicates.** In sum, the language presents alternative constructions to express the semantic notions of belief, thinking and want/opinion. Constructions involving *maachia* 'believe', -'ea 'think about' and –'ii'aa 'want' show a high degree of structural integration between the matrix verb

and its complement unit; -‘*ii’aa* would be the extreme case since it cannot occur by itself as a main verb. In contrast to these stronger syntactic constructions, there is also a looser syntactic alternation encoding a close semantic notion. The matrix predicates *suale* ‘trust in’ and *‘ea* taking a complement marked by *-benasi* or *-‘u*, take a finite clause as a complement; the matrix predicate *junuen’ea* ‘wish that, agree’ takes an unmarked or a hypothetical/potential verb form. Moreover, whereas *‘ea* and *junuen’ea* require a fixed order with respect to their complement, *suale* allows the linked unit to appear embedded in the matrix core or extraposed to the right, linked directly to the sentence node. When the complement is outside the core, as a way to avoid asymmetrical linkage, the main core takes a resumptive pronoun as a core argument.

Let’s first establish the nexus relation of the constructions expressing desire and opinion. In the lexical representation of the clause ‘Aurelia wished that you would clean the house’ in (70c), the first argument position is the actor, and the second argument position is the content of the desire; what *Aurelia* wished is ‘that you would clean the house’. The complement unit is in the post-core slot (i.e., there is not a pause and the matrix core cannot take a resumptive pronoun), meaning that it is a syntactic core argument of the matrix core. This yields clausal subordination. When the construction is passivized (70b), however, the complement unit does not serve as the passive-PSA, but the resulting construction is understood as an impersonal clause.

- (70) a. Aurelia-Ø junuen’ea-Ø [ enchi kari-ta tute-ne-‘u].  
 Aurelia-NOM thus-think-PRES 2SG:ACC house-ACC clean-EXPE-CLM  
 ‘Aurelia wishes that you would clean the house.’
- b. Junuen’ea-wa-Ø [ enchi kari-ta tute-ne-‘u].  
 thus-think-PASS-PRES 2SG:ACC house-ACC clean-EXPE-CLM  
 ‘(Someone) wishes that you would clean the house.’

- c. **wish'** (Aurelia, [[**do'** (2sg, Ø)] CAUSE [BECOME **clean'** (2sg, kari-)]]])

On the other hand, because -'ii'aa expresses a kind of weak manipulation where the PSA of the matrix core tries to impose her intent on the PSA of the linked core, its lexical representation is very similar to the one observed for jussive predicates. In (71c), *enchi* '2sg' is an argument of both cores: it is the undergoer of the matrix predicate *want* and the actor of *clean*. Because *enchi* is the undergoer of the matrix core, it functions as the passive-PSA (71b). Because the linked verb cannot carry any operator marker, it depends on the matrix core in terms of operator information; it means that the morphological construction coding 'wanting' is an instance of core co-subordination. The fact that *enchi* is an argument of more than one core is captured by the theory of control and the linking algorithms, to be explained in chapter 8.

- (71) a. Aurelia-Ø kari-ta enchi tu'ute-'ii'aa-Ø.  
 Aurelia-NOM house-ACC 2SG:ACC clean-want-PRES  
 'Aurelia wants you to clean the house.'
- b. Empo kari-ta tu'ute-'ii'aa-wa-Ø.  
 2SG:NOM house-ACC clean-want-PASS-PRES  
 'You are wanted to clean the house.'
- c. [**do'** (Aurelia, [**want'** (Aurelia, 2sg)])] CAUSE [**do'** (2sg, Ø) CAUSE [BECOME **clean'** (kari)]]

The situation is different for the mental verbs coding belief. On the one hand, since this semantic notion shows alternative coding without a significant change of meaning, it seems the two have the same LS but different semantic representations. The LS in (72a) corresponds equally to the sentence in (72b) involving *-maachia* and to the sentence (73a) involving *suale* when taking an embedded clausal complement. The first argument position **believe'** is occupied by the perceiver and the second position by the content of the belief, e.g., what I believe is that 'Pedro bought a horse'. On the other hand, each type

of construction behaves differently in terms of passive voice. For the morphological type, it is the highest ranked argument of the embedded LS, the actor, which serves as the passive-PSA (72c). When added to the event encoded in the complement (72d), the embedded-PSA is omitted and the clause is understood as impersonal. The accusative theme cannot act as the passive-PSA.

(72) a. **believe'** (1sg, [[**do'** (Peo, Ø)] CAUSE [BECOME **have'** (Peo, kaba'i)]])

b. Ne            Peo-ta            kaba'i-ta            jinu-maachia-Ø.  
 1SG:NOM    Pedro-ACC    horse-ACC    buy-believe-PRES  
 'I believe Pedro to be buying a horse.'

c. Peo-Ø            kaba'i-ta            jinu-maachia-wa-Ø.  
 Pedro-NOM    horse-ACC    buy-believe-PASS-PRES  
 'Pedro is belived to be buying a horse.'

d. Ne            kaba'i-ta            nenki-wa-maachia-Ø.  
 1SG:NOM    horse-ACC    sell-PASS-believe-PRES  
 'I believe someone sold the horse.'

e. <<sub>IF</sub>DEC<<sub>TNS</sub>PRES <**believe'** (1sg, [**do'** (Peo, Ø)] CAUSE **have'** (Peo, kaba'i))>>>

That is, the content of the belief does not serve as a syntactic argument of the matrix core, but there is a core argument of the complement unit serving to this function. It means that the matrix core and the linked core share a syntactic argument, the embedded-PSA, i.e., raising (to object) constructions. This property rules out subordination. Because the linked verb must carry no operator information, the matrix core and the linked core establish a co-subordinate relation at the level of core.

The LS in (72a) also corresponds to the *suale* constructions taking an embedded syntactic-like complement, as exemplified in (73a). When passivized, the construction is interpreted as impersonal (73b) since the complement unit cannot serve as the passive-PSA. The abbreviated semantic representations in (72e) and (73c) differ in that the

former lacks a tense operator modifying the embedded LS, which entails that it will not be realized as a finite clause, whereas the latter shows a tense operator modifying the embedded LS, and therefore it will be realized as a finite clause.

- (73) a. Peo-Ø [ kaba'i-ta Joan-ta jinu-kan-'u] suale-Ø.  
 Pedro-NOM horse-ACC Juan-ACC buy-PASTC-CLM believe-PRES  
 'I believe that Juan was buying a horse.'
- b. [ kaba'i-ta Joan-ta jinu-kan-'u] suale-wa-Ø.  
 horse-ACC Juan-ACC buy-PASTC-CLM believe-PASS-PRES  
 '(Someone) believes that Juan was buying a horse.'
- c. <<sub>IF</sub>DEC <<sub>TNS</sub>PRES <believe' (1sg, [<<sub>TNS</sub> do' (Peo, Ø) CAUSE have' (Peo, kaba'i)]>)]>>>

When the passive is added to a construction taking a complement in the right-detached position (74), it is the resumptive pronoun *a* –or the source of the belief, when overtly coded- which serve as the passive-PSA. That is, the content of the belief is a semantic but not a syntactic argument of the matrix predicate, hence a syntax-semantic mismatch.

- (74) a. **believe'** (1sg, 3sg, [[**do'** (Peo, Ø)] CAUSE [BECOME **have'** (Peo, kaba'i)])]
- b. Peo-Ø a<sub>i</sub> suale-Ø [ kaba'i-ta Joan-ta jinu-ka-'u]<sub>i</sub>  
 Pedro-NOM 3SG:ACC believe-PRES horse-ACC Joan-ACC buy- PRFV-CLM  
 'I believe it, that Juan bought a horse.'
- c. A<sub>i</sub> sual-wa-Ø [ kaba'i-ta Joan-ta jinu-ka-'u]<sub>i</sub>  
 3SG:ACC believe-PASS-PRES horse-ACC Joan-ACC buy- PRFV-CLM  
 'It is believed that Juan bought a horse.'

The syntactic constructions in (73) and (74) show a subordinated relation: the complement unit is a semantic and syntactic argument of the matrix core, i.e. there is no resumptive pronoun. When the clausal complement appears embedded (73), it yields asymmetrical core subordination, i.e., there is a clause linked to the core node. When it

appears in the right-detached position (74), it yields a symmetrical clausal subordination, i.e., there is a clause linked to the sentence node.

A similar pattern is observed for thinking. Although the three complement types involving the matrix verb *'ea* behave alike in terms of case marking of the participants, negation, and the modification of temporal adverbs, they crucially differ both in terms of operator dependency and passive voice. On the one hand, the linked verb in the morphological structure may be unmarked or marked by the aspectuals *-ka* and *-ne*, but not by the past continuative; hence the two cores show a certain operator independency. On the other, when *-wa* is added to the mental verb taking a unit marked by *-t* (75a), it is the highest ranked argument of the linked verb which serves as the passive-PSA (75b). When added to the inner verb, the resulting complement clause is understood as impersonal (75c). Because the two cores may be independently modified by aspectual operators, this is an instance of core coordination.

- (75) a. Nim      achai    Peo-ta      karo-ta      nenka-ka-t-'ea-n.  
           1SG:GEN father    Peo-ACC    car-ACC    sell-PRFV-CLM-think-PASTC  
           ‘My father thought that Pedro sold the car.’
- b. Peo-Ø      karo-ta      nenka-ka-t-'ee-wa-n.  
           Peo-NOM    car-ACC    sell-PRFV-CLM- think-PASS-PASTC  
           ‘Pedro is thought to have sold the car.’
- c. Nim      achai    karo-ta      nenki-wa-ka-t-'ea-n.  
           1SG:GEN father    car-ACC    sell-PASS-PRFV-CLM-think-PASTC  
           ‘My father thought that (someone) sold the car.’

When the matrix predicate takes a complement unit marked by *-benasia* or *-u*, the linked verb can be fully marked by tense; hence it involves a clausal unit, rather than a core. When the clausal complement is embedded in the main clause (76a), it yields asymmetrical core subordination. When it appears in the post-core slot (76b), it yields a

symmetrical clausal subordination. When *-wa* is added to a construction taking an embedded syntactic-like complement marked by *-benasi*, there is no passive-PSA and thus the sentence is understood as an impersonal (76a'). The same is true when *-wa* is added to a construction taking a syntactic-like complement marked by *-u* in the post-core slot (76b). Notice that *Maria*, the embedded-PSA, must remain accusative in order to be grammatical.

- (76) a. Ivan-Ø [Maria-ta kaa tuisi wakabaki-ta bwase-ka-benasia] = 'ea-Ø.  
 Ivan-NOM Maria-ACC NEG good wakabaki-ACC cook-PRFV-CLM think-PRES  
 'Ivan thinks that Maria did not cook well the wakabaki.'
- a'. [Maria-ta kaa tuisi wakabaki-ta bwasa-ka-benasi] = 'ee-wa-Ø.  
 Maria-ACC NEG good wakabaki-ACC cook-PRFV-CLM think-PASS-PRES  
 'That Maria did not cook well the wakabaki was thought.'
- a'\*. \*[Maria-Ø kaa tuisi wakabaki-ta bwasa-ka-benasi] = 'ee-wa-Ø.  
 'Maria was thought that (she) did not cook well the wakabaki.'
- b. Ne (nuen) 'ea-Ø [Aurelia-ta yi'i-ne-'u].  
 1SG:NOM thus think-PRES Aurelia-ACC dance-EXPE-CLM  
 'I think that Aurelia will dance tomorrow (but I am not sure).'
- b'. (Nuen) 'ee-wa-Ø [Aurelia-ta yi'i-ne-'u].  
 thus think-PASS-PRES Aurelia-ACC dance-EXPE-CLM  
 'It is thought that Aurelia will dance tomorrow.'

The question is, what is the nexus type of the morphological structure in (72) and the complement type in (75)? Although the morphological structure coding belief and thinking resembles the control construction observed for *-ii'aa*, in the sense that it is the highest ranked argument of the embedded LS that acts as the passive-PSA, there is a crucial difference between the two: in the LS for the clause 'I believe Pedro to be buying the horse' in (72a), *Pedro* is not a semantic argument of *believe* but rather the actor of *buy* only. That is, there is no change in the semantic role of *Pedro* in (72b) and (72c): it is the actor of the embedded core, not the undergoer of *believe*, because in both sentences,

what I believe is ‘that Pedro bought a horse’. The same applies for the morphological structure involving –‘*ea* ‘think’.

The fact that the highest ranked argument of the embedded LS serves as the passive-PSA is explained in terms of ‘raising’. Raising constructions are organized into two types: ‘raising-to-subject’, e.g., *Aurelia seems to enjoy her new rebozo*, and ‘raising-to-object’, e.g., *Fermin believes Lupe to have cooked the soup*. In English, each of these constructions has an alternative form in which there is a finite *that*-clause complement; in both constructions the core argument which is the PSA of the finite embedded clause in the alternative construction appears as a core argument in the matrix core. In RRG, the first type of constructions is termed ‘matrix coding as PSA’ and the second type ‘matrix coding as non-PSA’. In a strict sense, Yaqui does not have ‘matrix-coding as PSA’ constructions except, maybe, for the extremely common clause using *tu’i* ‘good’ as a predicate in (77).

- (77) U aaki-Ø bakot jujaria-ta-betchi’ibo tu’i-Ø.  
 the pitahaya-NOM snake bite-ACC-for good-PRES  
 ‘The pitahaya plant is good for the snake’s bite.’

The morphological structure expressing direct perception is another instance of ‘matrix coding as non-PSA’, since the highest ranked argument of the embedded LS functions as the passive-PSA. As in the expression ‘believe’, the two cores must share the operators (i.e., the linked core cannot be marked by the aspectual suffixes –*k* or –*ne*), meaning that they are an instance of core co-subordination. In contrast, the linked verb in a morphological construction involving –‘*ea* ‘to think’, may be unmarked or marked by the perfective and the expected aspectual suffixes, but not for tense. This operator independency at the level of core indicates that the core units involved in a –‘*ea*

construction type show a core coordinate combination. A simplified representation for the clause *I believe Pedro to be buying a horse* in (72b) is in Figure 7.5. Notice that the highest ranked argument of the embedded LS is linked to a pre-core argument position. The linking algorithm of ‘matrix coding’ constructions will be explained in detail in chapter 8.

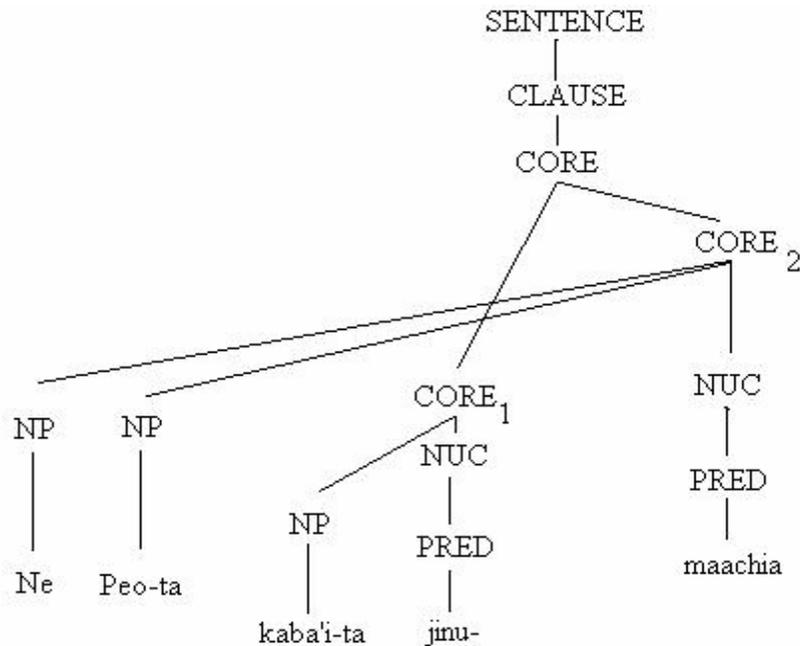


Figure 7.5: Core co-subordination for the clause *I believe Pedro to be buying a horse* in (72b)

### 7.3. Cognition predicates

The final class of mental verbs analyzed here corresponds to cognition predicates. These predicates encode the knowledge or acquisition of knowledge on the part of the speaker regarding a state of affairs, e.g. *know*, *notice*, *realize*, *learn*, *understand*, *notice*, *regret*, *forget*, or *remember*. Two Yaqui verbs encoding the speaker’s knowledge are analyzed here: *ju’unea* meaning ‘know, understand’ and *mammate* meaning ‘notice, realize’. The verbs *kopte* ‘to forget’ and *wawaate* ‘to remember’ are also discussed since they also convey a representation of knowledge (Wierzbicka 1988).

**7.3.1 The notion of *knowing*.** The fact that someone has knowledge about something or is familiar with a person, place, fact, subject matter, is coded by the stative verb *taa'a* (78a). In contrast, the ability on the part of the speaker to perform an action is expressed through the modal verbs *aawe* ~ *aa* 'be able to'; whereas the full form prefers a complement unit marked by *-po* (78b), the shorter form takes an unmarked complement (78c). One more possibility is illustrated in (78d) where the general knowledge verb *ju'unea* takes a non-finite unit marked by *-po* (cf. chapter 6, §6.2.3). All these examples merely describe Aurelia's ability to perform the process coded in the complement, but say nothing about the mental activity regarding a state of affair. Only *ju'unea* may be used in a cognitive sense.

- (78) a. Maria Luisa-Ø Lio-nok-ta taa'a-Ø.  
 Maria Luisa-NOM God-word-ACC know-PRES  
 'Maria Luisa knows the Lord's prayers.'
- b. Aurelia-Ø tajo'o-ta awe baksia-po.  
 Aurelia-NOM cloth-ACC KNOW HOW TO wash-CLM  
 '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.'
- d. Aurelia-Ø ju'unea-Ø [(jaisa) tajo'o-ta baksia-po].  
 Aurelia-NOM know-PRES how cloth-ACC wash-CLM  
 'Aurelia knows how to wash the clothes (lit. have knowledge about washing).'

Although an important body of research on complementation deals with the study of cognition verbs, D&C (fn. 2:368) barely mention the existence of a 'complex verb stem' *ju'un-ea* (lit. this-think) meaning 'to know', which has a transitive counterpart *ju'un-eiyaa*. As a main verb, the 'intransitive' version takes a locative NP as an argument (79a), whereas the 'transitive' version takes an accusative NP (79b).

- (79) a. Jaibu ne ae-t ju'unea-Ø.  
 now 1SG:NOM 3SG-on know-PRES  
 'I already know about it.'
- b. Aabo ne enchim ju'uneeya-se-k.  
 here 1SG:NOM 2PL:ACC know-PURP:SG-PRFV  
 'I came over here in order to know how you folks are.'

Both verbs function as complement-taking predicates. The form *ju'unea* is used when the linked unit appears in the post-core slot (80a) and *ju'uneeya* is used when the complement appears in the right-detached position and there is either a resumptive pronoun co-indexed to the extraposed complement (80b) or a copy of the highest ranked argument of the embedded LS (80c). According to my native speakers' intuition, a sentence like (80c) may encode either that the speaker obtained the information through other sources, or that it was the referent of the highest ranked argument of the complement herself who informed the speaker, i.e. some sort of evidential coding. Usually, the linked unit is marked by *-u* or *-po* and the embedded-PSA is marked as accusative.

- (80) a. Ne ju'unea-k [ enchi kaba'i-ta jinu-ka-'u].  
 1SG:NOM know-PRFV 2SG:ACC horse-ACC buy-PRFV-CLM  
 'I knew that you bought a horse.'
- b. Ne a<sub>i</sub> ju'uneeya-k [ kaba'i-ta am jinu-ka-'u]<sub>i</sub>  
 1SG:NOM 3SG:ACC know-PRFV horse-ACC 2PL:ACC buy-PRFV-CLM  
 'I knew it, that they bought a horse.'
- c. Ne am<sub>i</sub> ju'uneeya-k [ kaba'i-ta am<sub>i</sub> jinu-ka-'u].  
 1SG:NOM 2PL:ACC know-PRFV horse-ACC 2PL:ACC buy-PRFV-CLM  
 'I knew (from) them, that they bought a horse.'

The use of *ju'unea* in the cognitive sense implies that someone is actively aware of a proposition that they know, i.e., be thinking about, hence its derivation from *-'ea* 'think'. In contrast to English *realize*, *understand*, and *discover*, *ju'unea* does not entail the

manner of acquisition of the new information; it only expresses that such information is (or is not) in the mind of the speaker at this time. According to my data, *ju'unea* seems to place some restrictions on the PSA of the complement clause, and this restriction is manifested in the selection of the CLM. Compare the following sentences.

- (81) a. Nim      achai<sub>i</sub>    ju'une'ea-k    [ loteria-ta    a<sub>j/\*i</sub>      yo'o-ka-'u].  
 1SG:GEN father know-PRFV    lottery-ACC    3SG:ACC win-PRFV-CLM  
 'My father<sub>i</sub> knew that he<sub>j/\*i</sub> won the lottery.'
- b. Nim      achai<sub>i</sub>    ju'une'ea-k    [ loteria-ta    yo'o-kai].  
 1SG:GEN father know-PRFV    lottery-ACC win-CLM  
 'My father<sub>i</sub> knew he<sub>i</sub> had won the lottery.'
- c.? Nim      achai<sub>i</sub>    ju'une'ea-k    [ loteria-ta    a    omo<sub>i</sub>    yo'o-'u].  
 1SG:GEN father know-PRFV    lottery-ACC    3SG REFL win-CLM  
 'My father<sub>i</sub> knew that he/himself won the lottery.'
- d. Ne      ju'une'a-n    [ka    ino      ino      kaba'i-ta    jinu-ria-ne-'u].  
 1SG:NOM know-PASTC NEG 1SG:REFL 1SG:REFL horse-ACC buy-APPL-EXPE-CLM  
 'I knew that I could not buy me the horse! (ct. I couldn't get enough money)'

In the clause in (81a), the PSA of the matrix core and the PSA of the linked unit are not coreferential, and the complement clause marked by *-u* overtly expresses all its core arguments. In (81b), the two PSAs are coreferential, and the complement is missing a syntactic argument; notice that the linked unit is marked by *-kai*. Although grammatically acceptable, the occurrence of a reflexive pronoun co-indexed to the matrix PSA (81c) sounds odd, unless the applicative suffix *-ria* is added (81d).

The complement of a cognition verb conveys the content of a fact, that is, information that is taken for granted. Because of this, the complement refers to a proposition which is embodied in a fully tensed clause (82a); the two events can also be independently modified by temporal adverbs. When the non-matrix event is marked by the expected

suffix *-ne* (82b) or the desiderative suffix *-bae* (82c), it implies, if not knowledge, at least a claim to knowledge on the part of the speaker.

- (82) a. Ne            ju'unea-Ø    [ tuuka        Joan-ta    aabo siika-'u].  
 1SG:NOM know-PRES    yesterday Joan-ACC    here go:PRFV-CLM  
 'I know that Juan came here yesterday.'
- b. Ne            tuuka        enchi        ju'ueeya-k    [ enchi  
 1SG:NOM yesterday 2SG:ACC know-PRFV    2SG:ACC  
  
 pueblo-u-bicha    sim-ne-'u].  
 town-DIR-toward go-EXPE-CLM  
 'I knew about you yesterday, that you would come to the town.'
- c. Ne            ju'unea-Ø    [ ka Peo-ta    mango-ta    bwa'a-bae-po].  
 1SG:NOM know-PRES    NEG Peo-ACC mango-ACC eat-DESID-CLM  
 'I know that Pedro does not want to eat the mango.'

Unlike propositional attitude predicates, the interpretation of negation in a cognitive construction depends on whether the negative particle is located in the matrix core or the complement clause. If *kaa* is placed in the matrix core, it negates the cognitive event but not the content of the proposition (83a). If it is placed in the non-matrix core, it negates only the reported information (83b). It means that if the whole sentence is negated, the presupposed complement remains presupposed.

- (83) a. Aurelia-Ø    kaa ju'unea-k    [ kaba'i-ta    enchi    jinu-ka-'u].  
 Aurelia-NOM NEG know-PRFV    horse-ACC 2SG:ACC buy-PRFV-CLM  
 'Aurelia did not know that you bought a horse.'
- b. Aurelia-Ø    ju'unea-k    [ kaa enchi    kaba'i-ta    jinu-ka-'u].  
 Aurelia-NOM know-PRFV    NEG 2SG:ACC horse-ACC buy-PRFV-CLM  
 'Aurelia knew that you didn't buy the horse.'

Since the complement clause of *ju'unea* appears in the post-core slot, the linkage is always symmetrical: clausal subordination. If the suffix *-wa* is added to a construction taking *ju'unea*, the complement clause remains without change and the clause is

understood as impersonal (84b). The passive suffix can be also added to the non-matrix verb resulting in an impersonal clause (84c).

- (84) a. Ite ju'unea-Ø [ u-ka o'ou-ta wakas-ta me'a-ka-'u].  
 1PL:NOM know-PRES the-ACC man-ACC cow-ACC kill-PRFV-CLM  
 'We know that this man killed a cow.'
- b. Ju'une-wa-Ø [ u-ka o'ou-ta wakas-ta me'a-ka-'u].  
 know-PASS-PRES the-ACC man-ACC cow-ACC kill-PRFV-CLM  
 '(Someone) knows that this man killed the cow.'
- c. Ite ju'unea-Ø [ wakas-ta me'e-wa-ka-'u].  
 1PL:NOM know-PRES cow-ACC kill-PASS-PRFV-CLM  
 'We know that (someone) killed the cow.'

Since the complement clause of *ju'uneeya* appears in the right-detached position such as the matrix core takes a resumptive pronoun, it suggests a sentential subordination juncture-nexus combination, i.e. the clause is linked to the sentence node. When the passive suffix is added to *ju'uneeya*, the passive version depends upon which argument serves as a core argument of the matrix predicate, the resumptive pronoun in (85b) or the copied embedded-PSA.

- (85) a. Ne enchi ju'uneeya-k [ wakabak-ta enchi ya'a-ka-po].  
 1SG:NOM 2SG:ACC know-PRFV wakabaki-ACC 2SG:ACC make-PRFV-CLM  
 'I knew about you, that you cooked the wakabaki.'
- b. Empo ju'uneeya-wa-k [ wakabak-ta enchi ya'a-ka-po].  
 2SG:NOM know-PASS-PRFV wakabaki-ACC 2SG:ACC make-PRFV-CLM  
 'You were known that you cooked the wakabaki.'

There is another mental predicate that conveys a reference to the acquisition of new information: *mammate* 'realize, notice' (Sp. *darse cuenta*). This predicate takes a fully tensed unit marked by either *-u* or *-po*, and the highest ranked argument of the embedded core is mainly marked as accusative, although genitive pronouns are also observed. In contrast to *ju'unea*, the verb *mammate* obligatorily takes a resumptive

pronoun co-indexed to the linked unit (86a-b) or the copy of the embedded PSA (86c). When the highest ranked argument of the linked verb serves as the undergoer of the matrix core, it implies some sort of direct contact between the two events, e.g., in (86c) after arguing for a while, Ivan finally understood your reasons for selling the horses. Any other arrangements turns out ungrammatical. The clauses in (86d-d') are ruled out since the complement unit appears in the post-core slot or embedded in the matrix core.

- (86) a. Ne jaibu a<sub>i</sub> mammatte-k [ kafe-ta ka  
 1SG:NOM already 3SG:ACC realize-PRFV coffee-ACC NEG  
 em sake-ka-po]<sub>i</sub>  
 2SG:GEN toast-PRFV-CLM  
 'I already noticed it, that you did not toast the coffee.'
- b. Ivan-Ø a<sub>i</sub> mammate-k [ enchi kaba'i-m nenka-ka-'u]<sub>i</sub>  
 Ivan-NOM 3SG:ACC realize-PRFV 2SG:ACC horse-PL sell-PRFV-CLM  
 'Ivan noticed it, that you sold the horses.'
- c. Ivan-Ø enchi mammate-k [ enchi kaba'i-m nenka-ka-'u]  
 Ivan-NOM 2SG:ACC realize-PRFV 2SG:ACC horse-PL sell-PRFV-CLM  
 'Ivan understood you, that you sold the horses.'
- d. \* Ivan-Ø mammate-k [ enchi kaba'i-m nenka-ka-'u]  
 'Ivan understood that you sold the horses.'
- d'. \* Ivan-Ø [ enchi kaba'i-m nenka-ka-'u] mammate-k  
 'Ivan understood that you sold the horses.'

*Mammate* is more flexible than *ju'unea* in the sense that the PSA of the non-matrix core may or may not be identical with the matrix PSA and still the same syntactic-like complement type is used. The interesting point here is that, when the two PSAs are coreferential, the reflexive pronoun appears inside the main core and the linked unit shows a co-indexed accusative pronoun (87a-b). Nonetheless, a subjectless complement marked by *-kai* (87c) is still possible.

- (87) a. Ne<sub>i</sub>        ino / omo<sub>i</sub> mammate-k [ ne<sub>i</sub>        ka kafe-ta sake-ka-po].  
 1SG:NOM 1SG:REFL realize-PRFV 1SG:ACC NEG coffee-ACC toast-PRFV-CLM  
 ‘I realized myself that I didn’t toast the coffee.’
- b. Empo<sub>i</sub>    omo<sub>i</sub> mammate-ne [tajo’o-ta kaa tuisi enchi<sub>i</sub> baksia-ka-‘u].  
 2SG:NOM REFL realize-EXPE cloth-ACC NEG good 2SG:ACC wash-PRFV-CLM  
 ‘You will notice yourself that you didn’t wash the clothes very well.’
- c. Nim        achai a<sub>i</sub>        mammate-k [ loteria-ta yo’o-kai ]<sub>i</sub>  
 1SG:GEN father 3SG:ACC realize-PAST lottery-ACC win-CLM  
 ‘My father realized it to have won the lottery.’

With respect to the passive voice, *mammatte* shows the expected pattern of a symmetrical linkage. When the two PSAs are non-coreferential and *-wa* is added to the matrix core in (88b), the nominative NP is omitted and either the resumptive pronoun or the copied highest ranked argument of the embedded LS functions as the passive-PSA. The complement unit remains as a semantic argument, outside the main core. When the two PSAs are coreferential, however, the *-kai* complement type seems to be the only passive option (88c).

- (88) a. Aurelia-Ø    a<sub>i</sub>        mammate-k [ Ivan-ta mango-ta bwa’a-ka-‘u ]<sub>i</sub>  
 Aurelia-NOM 3SG:ACC realize-PRFV Ivan-ACC mango-PL eat-PRFV-CLM  
 ‘Aurelia realized it, that Ivan ate the mango.’
- b. A<sub>i</sub>        mammati-wa-k [ Ivan-ta mango-ta bwa’a-ka-‘u ]<sub>i</sub>  
 3SG:NOM realize-PASS-PRFV Ivan-ACC mango-PL eat-PRFV-CLM  
 ‘It is realized, that Ivan ate the mango.’
- c. Mammate-naa [ tajo’o-ta kaa tuisi enchi<sub>i</sub> baksia-kai ].  
 realize-EXPE:PASS cloth-ACC NEG good 2SG:ACC wash-CLM  
 ‘It will be noticed while you do not wash the clothes very well.’

**7.3.2 Forget and remember-type of cognitive predicates.** There are two other types of mental predicates that presuppose the information coded in the complement, the verbs meaning *remember* and *forget*. As briefly commented in section 6.2.4, these predicates can have a different semantic interpretation depending on the construction they appear in. As Van Valin and Wilkins (1993) point out, all acts of *remembering* entail calling

something up in the mind of the speaker and the nature of this something constrains the interpretation of the verb. When it is an intention or a disposition to act, the result is a psych-action sense, e.g., *he remembers to vote against the president*. When it is knowledge or belief that a person has in their mind from before, then *remember* receives a cognition or propositional attitude reading, e.g., *he remembered that the capital of NY State is Albany not NYC*. When it is a perceptual event, *remember* gets the corresponding perceptual sense, e.g., *he vividly remembers the senators voting against the embargo*. Except for the last one, these different meanings have been also observed with *forget*.

In Yaqui, the semantic notions of *forgetting* and *remembering* something are expressed by the main verbs *kopte* and *wawaate*, respectively. The verb meaning ‘forget’ has a transitive counterpart *kopta* (89a) which never takes a clausal complement. In terms of argument structure, the two predicates take a postpositional complement: *kopte* ‘forget’ takes an NP marked by the postposition *-beas* ‘in front of’ (89b),<sup>10</sup> whereas *wawaate* ‘remember’ takes an NP marked by the directional *-u* (89c). Presumably, the form meaning *remember* comes from the reduplication of *waate* ‘miss, need’.

- (89) a. U-me’e yoeme-m maso-bwi-bwika-me jirukia-ta kopta-k.  
           the-PL man-PL deer-RED-sing-CLM stick-ACC forget-PRFV  
           ‘The deer-singer men forgot the stick.’
- b. Goyo-Ø nim tea-m-beas kopte-k.  
     Goyo-NOM 1SG:GEN name-PL-about forget-PRFV  
     ‘Goyo forgot about my name.’
- c. Goyo-Ø ka nim team-me-u wawaate-k.  
     Goyo-NOM NEG 1SG:GEN name-PL-DIR remember-PRFV  
     ‘Goyo did not remember my name.’

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<sup>10</sup> None of the Yaqui studies have exemplified the use of *kopte* and so no mention has been made of this particular complement. So far, it is not clear if *beas* is a bound or a free postposition or verbal particle, but in my data it strongly follows the NP and it demands an object of postposition pronoun as a complement (see example (95) below), a restriction that is not observed for verbal particles. For the purpose of this analysis, I consider *-beas* as a bound postposition meaning ‘in front of, about’.

*Kopte* expresses that the speaker had the intention to do something but he/she forgot about it, i.e. the intended event did not take place. The meaning for *wawaate* is that the speaker has brought into her mind an intended event that may or may not take place. Because these verbs encode a mental disposition on the part of the speaker, it follows that the two events must share a core argument, and in languages like English this shared argument is usually omitted from the complement, e.g., *Pedro remembers to clean his room*. In Yaqui, however, the linked core must express all its syntactic arguments, including the shared one. When the two PSAs are co-referential, the embedded-PSA may be encoded by accusative or genitive pronouns as shown above. The preferred position for the complement clause is the right-detached position. Notice that in the examples below, the matrix core takes a resumptive pronoun co-indexed to the linked clause.<sup>11</sup>

- (90) a. Jorge-Ø<sub>i</sub> a-beas<sub>j</sub> kopte-k [ tarea-m a<sub>i</sub> ya'a-ne-po]<sub>j</sub>  
 Jorge-NOM 3SG-about forget-PRFV homework-PL 3SG:ACC make-EXPE-CLM  
 'Jorge forgot about doing the homework.'
- c. Flor-Ø<sub>i</sub> a-u<sub>j</sub> wawaate-k [ u-me jiosia sewa-m a<sub>i</sub>  
 Flor-NOM 3SG-DIR remember-PRFV the-PL paper flower-PL 3SG:ACC  
 ya'a-ne-'u]<sub>j</sub>  
 make-EXPE-CLM  
 'Flor remembered to do the paper flower.'

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<sup>11</sup> Whereas *wawaate* 'remember' is slightly more flexible with respect to embedded clauses as shown in (i), *kopte* 'forget' seems to be more restricted. I only got one example where the complement is embedded in the main clause, and even in this situation the postposition *a-beas* appears within the clause. It may be the case that the occurrence of this oblique argument is governed by the semantics of the verb, and that this postposition does not take a clausal object.

- (i) Ne<sub>i</sub> [ nim<sub>i</sub> Vicam-u ya'a-ne-'u] wawaate-k.  
 1SG:NOM 1SG:GEN Vicam-DIR make-EXPE-CLM remember-PRFV  
 'I remembered what I have to do in Vicam.'
- (ii) Jorge-Ø<sub>i</sub> [ tarea-m a<sub>i</sub> ya'a-ne-po]<sub>j</sub> a-beas<sub>j</sub> kopte-k  
 Jorge-NOM homework-PL 3SG:ACC make-EXPE-CLM 3SG-about forget-PRFV  
 'Jorge forgot about doing the homework.'

In terms of TAM operators, the psych-action interpretation requires the linked verb to be unmarked for tense. It does not mean, however, that the two cores cannot be independently modified by temporal adverbs; compare the clauses in (91a) and (91c).

(91) a. Beas-ketgo ne a-u<sub>i</sub> wawaate-k [ nim ka  
 this morning 1SG:NOM 3SG-DIR remember-PRFV 1SG:GEN NEG

kaba'i-ta enchi beje-tua-la-'u]<sub>i</sub>  
 horse-ACC 2SG:ACC cost-CAUSE-COMPL-CLM  
 'This morning, I remembered that I have not paid you for the horse.'

b. Ne a-u<sub>i</sub> wawate-maachi [ nim kaba'i-ta  
 1SG:NOM 3SG-DIR remember-SHOULD 1SG:GEN horse-ACC

enchi beje-tua-ne-'u ]<sub>i</sub>  
 2SG:ACC cost-CAUSE-EXPE-CLM  
 'I should remember to pay you for the horse.'

c. Empo au<sub>i</sub> wawate-k [ beas ketgo em yi'i-ne-'u]<sub>i</sub>  
 2SG:NOM 3SG-DIR remember-PRFV this morning 2SG:GEN dance-EXPE-CLM  
 'You remembered that you would dance this morning (you went there on time)'

In contrast, in the propositional attitude/cognitive interpretation, the complement unit can be fully tense marked. The complements in (92) convey that the content of a fact that is known. Here, the highest ranked argument of the linked verb must be marked as accusative, otherwise the sentence tends to be understood as a relative clause (92c).

(92) a. Aurelia-Ø a-beas<sub>i</sub> kopte-k [ Edgar-ta ye'e-ka-'u]<sub>i</sub>  
 Aurelia-NOM 3SG-front forget-PRFV Edgar-ACC dance-PRFV-CLM  
 'Aurelia forgot about it, that Edgar danced.'

b. Aurelia-Ø a-u<sub>i</sub> wawaate-k [ enchi tuisi ye'e-ka-'u]<sub>i</sub>  
 Aurelia-NOM 3SG-DIR remember-PRFV 2SG:ACC good dance-PRFV-CLM  
 'Aurelia remembered it, that you danced pretty good.'

c. Aurelia-Ø a-u<sub>i</sub> wawaate-k [ em tuisi ye'e-ka-'u]<sub>i</sub>  
 Aurelia-NOM 3SG-DIR remember-PRFV 2SG:GEN good dance-PRFV-CLM  
 'Aurelia remembered the one, your good dancing (=the dancing piece).'

*Kopte*, but not *wawaate*, allows the copy of the highest ranked argument of the linked verb. That is, the PSA of the propositional complement may also function as a core argument of the cognitive predicate in (93). In accordance with the predicate's basic subcategorization, the copied actor is marked as a postpositional, rather than an accusative, core argument.

- (93) a. Nim      achai a-beas<sub>i</sub>    kopte-k    [ enchi    kaba'i-ta    nenki-ka-'u]<sub>i</sub>  
 1SG:GEN father 3SG-front forget-PRFV 2SG:ACC horse-ACC sell-PRFV-CLM  
 'My father forgot about it, that you sold the horse.'
- b. Nim      achai e-beas<sub>i</sub>    kopte-k    [ enchi<sub>i</sub>    kaba'i-ta    nenki-ka-'u].  
 1SG:GEN father 2SG-front forget-PRFV 2SG:ACC horse-ACC sell-PRFV-CLM  
 'My father forgot about you, that you sold the horse.'

Because *kopte* and *wawaate* predicates select for an oblique NP that conveys the focus of cognition as a core argument, it follows that this complement cannot function as the passive-PSA (it is not the undergoer of the matrix core). When *-wa* is added to the active clauses in (94), the non-actor argument remains as a non-PSA core argument, hence the resulting construction is understood as an impersonal clause. The ill-formedness of the clause in (94c) is due to the fact that the copied NP referring to the actor, which serves as the passive-PSA.

- (94) a. A-beas<sub>i</sub>    kopte-wa-k      [ enchi    kaba'i-ta    nenki-ka-'u]<sub>i</sub>  
 3SG-front forget-PASS-PRFV 2SG:ACC horse-ACC sell-PRFV-CLM  
 '(Someone) forgot about it, that you sold the horse.'
- b. E-beas<sub>i</sub>    kopte-wa-k      [ enchi<sub>i</sub>    kaba'i-ta    nenki-ka-'u]  
 2SG-front forget-PASS-PRFV 2SG:ACC horse-ACC sell-PRFV-CLM  
 '(Someone) forgot about you, that you sold the horse.'
- c. \*Empo<sub>i</sub>    beas kopte-wa-k [ enchi kaba'i-ta nenki-ka-'u]<sub>i</sub>  
 'You were forgotten, that you sold the horse.'

The verb *wawaate* can also mean 'to remind someone to do something' if the causative suffix *-tua* is added to it, as illustrated below. In this case, the matrix predicate

codes the highest ranked argument of the linked verb as a core argument, and hence it marks it as accusative, whereas the linked unit keeps a co-indexed accusative pronoun functioning as its PSA. The linked unit depends upon the matrix core for the relevant tense operators. The clause in (95b) illustrates the passive version of the active clause in (95a); notice that the ‘caused’ actor serves as a non-PSA and hence it is marked by nominative case.

(95) a. Maria-Ø    Joan-ta<sub>i</sub>    a-u<sub>j</sub>    wawaati-tua-k  
 Maria-NOM    Joan-ACC    3SG-DIR    remember-CAUSE-PRFV

[ pastia-m    a<sub>i</sub>            ji’i-ne-‘u]<sub>j</sub>  
 pill-PL    3SG:ACC    drink-EXPE-CLM  
 ‘Maria reminded Juan that he should take the pills.’

b. Joan-Ø<sub>i</sub>    a-u<sub>j</sub>    wawaati-tua-wa-k  
 Juan-NOM    3SG-DIR    remember-CAUSE-PASS-PRFV

[pastia-m    a<sub>i</sub>            ji’i-ne-‘u]  
 pill-PL    3SG:ACC    drink-EXPE-CLM  
 ‘Juan was reminded to take the pills.’

Although less frequent, these mental predicates can take a linked unit marked by *-kai* when the PSA of the matrix core and the PSA of the embedded core are identical. Notice that the linked unit must lack a syntactic argument, the embedded-PSA. In this particular case, however, the interpretation of the sentence is ambiguous; it could suggest either clausal subordination coding the content of the mental predicate, e.g., I remember about it, that I wanted to sell the horse, or clausal co-subordination coding two simultaneous events sharing the PSA participant. In the latter case, the oblique pronoun in the matrix would refer to a third party rather than to the linked unit.

(96) a. Ne            au            wawate-k            [ kaba’i-ta    nenki-bae-kai]  
 1SG:NOM    3SG:DIR    remember-PRFV    horse-ACC    sell-DESID-CLM  
 ‘I remembered about it, that I wanted to sell the horse’  
 ‘I remembered something while selling the horse’  
 ‘I remembered him/her while selling the horse (other possible shopper)’

- b. Nim    achai    a-beas    kopte-k    [ kaba'i-ta    nenki-bae-kai]  
 1SG:GEN father 3SG-about forget-PRFV horse-ACC sell-DESID-CLM  
 'My father forgot about it, that he wanted to sell the horse.'  
 'My father forgot about something while selling the horse.'  
 'My father forgot about him/her while selling the horse (other possible shopper)'

**7.3.3. Juncture-nexus types of cognitive predicates.** In sum, the general verb form *ju'unea* expressing knowledge is derived from the main verb 'ea 'to think'. As a matrix predicate, *ju'unea/ju'uneeya* takes a clausal complement in the post-core slot, i.e., symmetrical clausal subordination, and a clausal complement in the right-detached position, i.e., symmetrical sentential subordination. In both cases, the clause complement is marked by *-u*, less frequently, by *-po*, and the embedded-PSA is systematically marked as accusative. The cognition predicates *mammate* 'notice, realize' can only encode their propositional complement by the symmetrical sentential subordinate juncture-nexus type. Here, the embedded-PSA can be a genitive pronoun when it is identical to the matrix-PSA.

The psych-action and the cognitive sense of *wawaate* 'remember' and *kopte* 'forget' are embodied by the same linkage type, sentential subordination, since they commonly take a resumptive pronoun co-indexed to the extraposed complement. The two complements differ, however, in terms of operator dependency: whereas the cognitive interpretation takes a propositional complement fully tense marked, the psych-action sense restricts the linked verb to be unmarked or be marked by the expected suffix *-ne*. Taking all these properties into consideration, these two interpretations should be represented in different logical structures as well as different semantic representations. An initial attempt to distinguish the psych-action sense and the cognitive sense of *wawaate* 'remember' is provided below. The logical structure in (97a) corresponds to the

psych-action sense in (97b) which conveys the mental disposition on the part of the speaker; the logical structure in (98a) corresponds to the cognitive sense in (98b). Because the resumptive pronoun and the extraposed complement represent the same referent and function as the same argument (undergoer), they must fill the same argument position in the two logical structures.

- (97) a. **think again'** (2sg, [3sg, [**do'** (2sg, [**dance'** (2sg))])])  
 b. Empo a-u<sub>i</sub> wawaate-k [ enchi yi'i-ne-'u]<sub>i</sub>  
 2SG:NOM 3SG-DIR remember-PRFV 2SG:ACC dance-EXPE-CLM  
 'You remembered that you should dance.'  
 c. <<sub>IF</sub>DEC <<sub>ASP</sub>PRFV <**think again'** (2sg, [3sg, [**do'** (2sg, [**dance'** (2sg))])])>>>>
- (98) a. **think again'** (2sg, [3sg, [**do'** (Edgar, [**dance'** (Edgard))])])  
 b. Empo a-u<sub>i</sub> wawaate-k [ Edgar-ta ye'e-ka-'u]<sub>i</sub>  
 2SG:NOM 3SG-DIR remember-PRFV Edgar-ACC dance-PRFV-CLM  
 'You remembered it, that Edgar danced.'  
 c. <<sub>IF</sub>DEC <<sub>ASP</sub> PRFV <**think again'** (2sg, [3sg, <<sub>ASP</sub> [**do'** (Edgar, [**dance'** (Edgard)])])>>>>

The abbreviated semantic representations in (97c) and (98c) differ in that the former lacks an aspect operator modifying the embedded logical structure, and also in that it entails that it will not be marked by the perfective  $-k(a)$ . In the latter, there is an aspect operator. In terms of clause linkage, both semantic notions are expressed by sentential subordination.

#### 7.4 Discourse predicates

The last group of complement-taking predicates concerns verb of saying, an important and complex subclass of activity verbs. On the one hand, the complexity of this class corresponds to the large number of lexical forms encoding the notions of saying, i.e., Wierzbicka (1987) lists 38 subclasses of verbs of saying in English. On the other, the

second argument varies dramatically in its interpretation (VV&LP: 116-8); it can be the addressee with verbs like *talk* or *chat*; it may be the topic of the conversation with verbs like *announce*, *discuss*, *tell about*; some may take a metalinguistic form, e.g., *word* as in *say a few words*; others take an ‘utterance noun’, e.g., *joke* as in *Ivan told a bad joke*; some can take a direct quotation as in *Goyo said: Ivan told a bad joke*, or an indirect quotation embodied in a *that*-clause as in *Goyo said that Ivan told a bad joke*.

There are also several types of verbs of saying in Yaqui. The most common are *etejo* ‘chat, discuss’ and *nooka* ‘talk, speak’ in (99a-b), which may take either the addressee or the content of discussion as an argument. The content of speaking appears as accusative, while the addressee appears as a postpositional (oblique) core argument. Except for *nooka*, most verbs of saying can take three arguments and hence behave as Type-A ditransitive verbs (cf. chapter 4, § 4.3). The only exception is the verb meaning *tell* which has two related lexical forms, one in which the addressee is marked by the directional suffix, e.g. ‘tell something to X’ in (99c), and one in which the addressee and the content of speaking are marked accusative, e.g. ‘tell somebody something’ in (99d). From this set of verbs, only *tejwa* can take a clause as a complement.

- (99) a. U-me kobanao-m jia-k-rao kaa tui-k nau etejo-k  
 the-PL governor-PL Yaqui- NEG good-ACC together chat-PRFV  
 ‘The governors discussed together the problems of the tribe.’
- b. U o’ou-Ø jamut-ta-u nooka-k.  
 the man-NOM woman-ACC-DIR talk-PRFV  
 ‘The man talked/spoke to the woman.’
- c. 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.’

**7.4.1 Direct and indirect discourse.** When functioning as a complement-taking predicate, verbs of saying describe a transfer of information coded in the complement unit, initiated by the speaker participant. The content of such information can be presented in either of two ways: as a direct quotation or as an indirect quotation. The former evokes the original speech situation and conveys the exact words of the original speaker in direct discourse, while the latter adapts the reported utterance to the speech situation of the report in indirect discourse (Coulmas 1986: 2). The fundamental difference lies in the speaker’s perspective or point of view of the reporter; that is, they differ in the manner in which the information is reported. According to Noonan (1985: 110-113), almost all languages distinguish these two notions by intonation; there is typically a pause before and/or after direct quotation, but not after indirect quotation. Other languages may use different complementizer to distinguish the two notions.

In Yaqui, predicates encoding direct quotation can also express indirect quotation, but not the other way around. Direct quotation can be expressed by at least three complement types, one involving the verb *tejwa* ‘tell’, one taking the closely related form *-tea* ‘it is said’, and one more taking the verb of saying *junuen jia* ‘say like this’.<sup>12</sup> The use of *tejwa* as a matrix verb expressing a direct quote is illustrated below. The ceding of the perspective of the complement to the speaker of the verb of saying is reflected in the interpretation of personal pronouns inside the complement; in (100a), the first person

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<sup>12</sup> D&C present another example expressing direct discourse. Here, the quoted event appears clause-initially and the verb *jia* follows it; there is a CLM attached to the complement unit, the suffix *-ti* which is, probably, an allomorph of the quotative suffix *-tia* which appears clause-internally.

Chubala nee bo’obicha-ti wo’i-ta-u jia-Ø.  
moment 1SG:ACC wait-CLM coyote-ACC-DIR say-PRES  
‘‘Wait for me a moment’’, he says to the coyote.’

singular pronoun *ne* refers to the speaker *Goyo* rather than the addressee. Note that the non-matrix PSA is marked by nominative case and the complement unit lacks a CLM.

- (100) a. Goyo-Ø<sub>i</sub> ne tejwa-k: nepo<sub>i</sub> kaba'i-ta jinu-k.  
 Goyo-NOM 1SG:ACC tell-PRFV 1SG:NOM horse-ACC buy-PRFV  
 'Goyo told me: "I bought a horse."  
 b. Ne a tejwa-k: Peo-Ø makiladora-po teekipanoa-Ø.  
 1SG:NOM 3SG:ACC tell-PRFV Peo-NOM factory-LOC work-PRES  
 'I told him: "Pedro works on the factory."

The grammaticalized form *-tea* encodes some sort of impersonal quotation. As a main verb, *-tea* is glossed as 'to be named' (101a); as a quotation marker, *-tea* is added to the non-matrix verb (101b-c) meaning 'it is said that'. The expression of the reporter speaker (i.e., the PSA of the verb of saying) is completely avoided here, meaning that this quotation marker does not contribute an argument to the argument structure of the whole expression and the reported PSA must be marked as nominative. In this use, *-tea* functions as a hearsay evidential anchoring the source of information to the shared knowledge of the community and allows the speaker to avoid taking personal responsibility for the reported information.

- (101) a. Jai = sa empo tea-k?  
 what = WH 2SG:NOM name-HAVE  
 What is your name?  
 b. Profe Ramon-Ø kaa yepsa-k-tea.  
 Teacher Ramón-NOM NEG arrive-PRFV-SAY  
 'It is said teacher Ramón did not arrive.'  
 c. Yuk-bae-tea.  
 rain-DESID-SAY  
 'It is said that it is going to rain.'  
 d. \* Peo-Ø yuk-bae-tea.  
 'Pedro said (that) it is going to rain.'

The other common verb of saying is *jiia* ‘say’ which may be used as a stative meaning ‘sound’ (102a) and as an active verb functioning as a complement-taking predicate (102b), but not as main verb (102c). Notice that this verb of saying is preceded by the same discourse particle *junuen* ‘like this, thus’ which also precedes mental predicates meaning ‘to think’.

- (102) a. U kubami-Ø ousi jiia-Ø.  
the drum-NOM a lot sound-PRES  
‘The drum sounds a lot.’
- b. Peo-Ø junuen jiia-Ø: Goyo-Ø kaba’i-ta etbwa-k.  
Pedro-NOM this say-PRES Goyo-NOM horse-ACC steal-PRFV  
‘Pedro says: “Goyo stole the horse.”’
- c. \*Maria-Ø nokichia-ta junuen jiia-k.  
‘Maria said a lie.’

The expression of indirect discourse is slightly more complex. Compare the clauses in (103a,b). Both have the same verb *tejwa* with the same actor participant, *Pedro*. Each contains a clause complement signaling the content of the speech. Although the two clauses are different in form, they both convey the same message. But the differences between these constructions are manifold. The most readily observable ones are syntactic. First, although *Pedro* is the referent for the two PSAs in (a) and (b), the pronouns in the non-matrix verb are different: it appears as ‘1sg:nom’ *nepo* in (a) and as ‘3sg:acc’ *aapo’ik* in (b); *Pedro* is not the referent of the ‘1sg:acc’ *ne* in (c) which refers to a third party, the speaker. Second, the tense-aspect suffix in (a) is different than the one in (b-c). Third, (b-c) but not (a) must be marked by the general CLM –‘*u*. Furthermore, these clauses differ in terms of their communicative functions (Li 1986: 30): direct quotation in (a) expresses a situation where the speaker presents the information as the words of the other participant, indirect quotation in (b, c) reports an assertion.

- (103) a. Peo-Ø<sub>i</sub> am tejwa-k: nepo<sub>i</sub> pajko-po ye'e-bae-Ø.  
 Peo-NOM 3PL:ACC tell-PRFV 1SG:NOM party-LOC dance-DESID-PRES  
 'Pedro told them: "I want to dance at the party." ( nepo = Pedro)
- b. Peo-Ø<sub>i</sub> am tejwa-k [ aapo'ik<sub>i</sub> pajko-po ye'e-bae-ka-'u].  
 Peo-NOM 3PL:ACC tell-PRFV 3SG:ACC party-LOC dance-DESID-PRFV-CLM  
 'Pedro told them that he wanted to dance at the party.' (aapo'ik = Pedro)
- c. Peo-Ø<sub>i</sub> am tejwa-k [ ne pajko-po ye'e-bae-ka-'u].  
 Peo-NOM 3PL:ACC tell-PRFV 1SG:ACC party-LOC dance-DESID-PRFV-CLM  
 'Pedro told them that I wanted to dance at the party.' (ne ≠ Pedro)

The same structural distinctions between direct quotation and indirect quotation are observed for *junuen jiia*, as illustrated below. Notice that the highest ranked argument in the linked unit is systematically marked as accusative. Maybe, the crucial difference between a *tejwa* clause (103) and a *junuen jiia* clause (104) is that the former requires the expression of the addressee, while the latter strongly omits it, although its occurrence is not ungrammatical.<sup>13</sup> Notice also that, in contrast to the expected pattern of a verb-final language, direct and indirect quotations are not placed between the actor participant and the verb of saying; the complement unit consistently appears at the end of the clause without an apparent pause between the utterance verb and the content of the speech act.

- (104) a. Peo-Ø Komuniila-po junuen jiia-ne: Goyo-Ø tuuka  
 Pedro-NOM Guardia-LOC his say-EXPE Goyo-NOM yesterday  
 kaba'i-ta etbwa-k.  
 horse-ACC steal-PRFV  
 'Pedro will say in the Guardia's authority: "Goyo stole the horse yesterday.'"
- b. Peo-Ø junuen jiia-Ø [ Goyo-ta tuuka kaba'i-ta etbwa-ka-'u].  
 Peo-NOM this say-PRES Goyo-NOM yesterday horse-ACC steal-PRFV-CLM  
 'Pedro says that Goyo stole the horse yesterday.'

<sup>13</sup> One more difference between *junuen jiia* and *tejwa* is that only the former can be used as a jussive predicate (chapter 5, § 5.2.2.1). The difference between the two senses involves whether there is a report of certain information (discourse interpretation) or a direct attempt to manipulate the addressee/causee (jussive interpretation). Only the former interpretation may take a fully tensed unit as a complement.

- c. Peo-Ø e-u junuen jiia-n [ Goyo-ta kaba'i-ta etbwa-ka-'u].  
 Peo-NOM 2SG-DIR this say-PASTC Goyo-NOM horse-ACC steal-PRFV-CLM  
 'Pedro told you that Goyo stole the horse yesterday.'

It is not clear if the complement constructions below code direct or indirect discourse, or something in between. In (105), the content of speech act is introduced by the Spanish CLM *que* 'that' and the non-matrix PSA is marked as nominative. The presence of *ke* as a complementizer in this particular construction is optional but not the nominative case of the reported PSA. My hypothesis is that this 'paratactic' construction is an innovating direct quote complementation strategy resulting from Spanish influence.

- (105)a. Empo-Ø junuen jiia-kan ke bempo kaba'i-ta jinu-bae-n.  
 2SG:NOM this say-PASTC that 1PL:NOM horse-ACC buy-DESID-PASTC  
 'Pedro was saying that they wanted to buy the horse.'
- b. Junuen jiia-wa-n ke empo kowi-ta nenka-k.  
 this say-PASS-PASTC that 2SG:NOM pig-ACC sell-PRFV  
 'It is said that you sold the pig.'
- c. Goyo-Ø junuen jiia-Ø chuu'u-Ø ko'okwe-Ø.  
 Goyo-NOM this say-PRES dog-NOM sick-PRES  
 'Goyo says the dog is sick.'

In contrast to mental predicates, the position of the negative particle *kaa* in direct and indirect quotations results in different meanings. Compare the following examples.

- (106) a. Peo-Ø junuen jiia-Ø: empo kaa karo-ta nenka-k.  
 Pedro-NOM this say-PRES 2SG:NOM NEG car-ACC sell-PRFV  
 'Pedro says: "Goyo didn't sell the car."
- b. Peo-Ø kaa junuen jiia-Ø: empo karo-ta nenka-k.  
 Pedro-NOM NEG this say-PRES 2SG:NOM car-ACC sell-PRFV  
 'Pedro does not say: "Goyo sold the car."
- c. Peo-Ø junuen jiia-n [ enchi kaa karo-ta nenka-k-'u].  
 Peo-NOM this say-PASTC 2SG:ACC NEG car-ACC sell-PRFV-CLM  
 'Pedro said that Goyo didn't sell the car.'
- d. Peo-Ø kaa junuen jiia-n [ enchi karo-ta nenka-k-'u].  
 Peo-NOM NEG this say-PASTC 2SG:ACC car-ACC sell-PRFV-CLM

‘Pedro didn’t say that Goyo sold the car.’

In Yaqui, both direct and indirect quotations allow the non-matrix verb to be independently marked for tense and temporal adverbs. Moreover, direct quotation, but not indirect quotation, can be independently marked by illocutionary force. The use of the imperative suffixes *-e ~ -em* (sg/pl) is illustrated in (107a-c) and the negative imperative particle *kat* in (107c). The clause in (107d) is ruled out because indirect quotation cannot take independent illocutionary force markers. Clearly, direct quotation corresponds to a fully independent sentence whereas indirect quotation is a clausal unit that depends upon the matrix predicate for illocutionary force operators.

- (107) a. U maehto-Ø inen jiia-Ø: usim yaate-‘em!  
the teacher-NOM this say-PRES child-PL keep quiet-IMPER:PL  
‘The teacher says: “Children keep quiet!”
- b. Aurelia-Ø junuen jia-n: empo kaba’i-ta jinu-‘e  
Aurelia-NOM this say-PASTC 2SG:NOM horse-ACC buy-IMPER:SG  
‘Aurelia said: “you buy the horse!”
- c. Aurelia-Ø junuen jia-n: empo kat kaba’i-ta jinu-‘e  
Aurelia-NOM this say-PASTC 2SG:NOM NEG:IMPER horse-ACC buy-IMPER:SG  
‘Aurelia said: “you don’t buy the horse!”
- d.\* Aurelia-Ø junuen jia-n [ enchi kat kaba’i-ta jinu-ka-‘u].  
‘Aurelia said that you don’t buy the horse.’

There are, however, other complex syntactic constructions to express indirect quotation and they are also extremely common in the language. The first one concerns a highly integrated morphological structure where the speech act verb is encoded by *-tia* ‘say that’. This verbal suffix is attached to the non-matrix verb in the same way as most of morpho-syntactic complex constructions discussed so far. The linked verb can be unmarked, be marked by the expected *-ne*, and the perfective *-k(a)*. The sentences below illustrate a situation where the speaker reports an event in which she is involved. In

contrast to the looser syntactic constructions discussed so far, the addressee cannot be overtly expressed in this complement type.

- (108) a. U o'ou-Ø jamut-ta jup-bae-tia-Ø.  
 the man-NOM woman-ACC marry-DESID-SAY-PRES  
 'The man says that he wants to marry the woman.'
- b. Joan-Ø tinako-ta tapunia-k-tia-Ø.  
 Joan-NOM tank-ACC fill-PRFV-SAY-PRES  
 'Juan says that he filled (with water) the tank.'
- c.\* Joan-Ø Mari-ta-u tinako-ta tapunia-k-tia-Ø.  
 'Juan says to Maria that he filled the tank.'

The same morphological structure is observed when the speaker reports an act performed by another participant, in which case the embedded PSA is marked accusative. In contrast to *-tea*, this verbal form contributes an argument to the argument structure of the whole expression: the reported-PSA. The clauses below show that the linked verb is independently marked by aspectual operators, but not by tense (109e) and illocutionary force (109f).

- (109) a. Ramón-Ø go'i-ta mu-muuke-tia-Ø.  
 Ramón-NOM coyote-ACC RED-die-SAY-PRES  
 'Ramón says that the coyote is dying.'
- b. Ramón-Ø go'i-ta ian muk-ne-tia-Ø.  
 Ramón-NOM coyote-ACC today die-EXPE-SAY-PRES  
 'Ramón says that the coyote is going to die today.'
- c. Tuuka Ramón-Ø go'i-ta muk-ne-tia-n.  
 yesterday Ramón-NOM coyote-ACC die-EXPE-SAY-PASTC  
 'Yesterday, Ramón said that the coyote is going to die.'
- d. Tuuka Ramón-Ø go'i-ta muku-k-tia-n.  
 yesterday Ramón-NOM coyote-ACC die-PRFV-SAY-PASTC  
 'Yesterday, Ramón said that the coyote died.'
- e.\* Ramón-Ø go'i-ta muku-kan-tia-n.  
 'Ramón said that the coyote was dying.'

- f. \* Ramón-Ø go'i-ta muku-'e-tia-n.  
 '\*Ramón said the coyote die!'

The two events can be independently negated and the difference interpretations depend upon the position of *kaa*. If it appears closer to the matrix PSA (110a), it negates the speech act event; if it appears after the embedded-PSA (112b), it negates the reported event.

- (110) a. Nim achai kaa enchi kaba'i-ta etbwa-k-tia-n; Peo-tea.  
 1SG:NOM father NEG 2SG:ACC horse-ACC steal-PRFV-SAY-PASTC Pedro-SAY  
 'My father didn't say that you stole the horse; Pedro said it.
- b. Nim achai enchi kaa kaba'i-ta etbwa-k-tia-n.  
 1SG:NOM father 2SG:ACC NEG horse-ACC steal-PRFV-SAY-PASTC  
 'My father said that you did not steal the horse (ct: he defended you).'

There is one more syntactic strategy to encode indirect quotation; one involving a verb of saying and a quotation marker attached to the non-matrix verb. The quotation marker can be either *-tea* (111) or *-tia* (112), and the complement must lack a CLM. When the complement is marked by the suffix *-tea*, native speakers paraphrase the clause into Spanish as *dice(n) que dicen* 'X said that it is said that' where the speaker clearly takes distance of the reported assertion. This distance is corroborated either because there is not an overt reporter speaker (e.g., third person singular) or because the utterance verb appears in the passive form.

- (111) a. Junuen jiia-n [Joan-Ø yoi-ta kaba'i-ta reuwa-k-tea-Ø].  
 this say-PASTC Juan-NOM foreigner-ACC horse-ACC lend-PRFV-SAY-PRES  
 'It is said Joan lent the horse (to) the foreigner.'
- b. Junuen jiu-wa-Ø [Flor-Ø a chai-wa-m aania-k-tea-Ø].  
 this say-PASS-PRES Flor-NOM 3SG:ACC father-POSS-PL help-PRFV-SAY-PRES  
 'It is said Flor helped her parents.'
- c. Junuen jiu-wa-n [Maria-Ø wakabaki-ta ya'a-ne-tea-n].  
 this say-PASS-PASTC Maria-NOM wakabaki-ACC do-EXPE-SAY-PASTC  
 'It is said Maria will cook the wakabaki.'

Because the speaker of utterance verb tends to be absent and the reported participant appears in the nominative case, we may say that clauses like those in (111) resemble a paratactic construction where both verbs of saying function as a hearsay evidential marker. A different situation is observed when *-tia* is attached to the reported event. In contrast, in the clauses in (112) below, the speaker of the utterance verb (the matrix PSA) is overtly expressed, meaning that it functions as the active PSA and hence it is marked as nominative; in addition, the linked verb must encode its own PSA participant which is marked as accusative.

- (112) a. Peo-Ø      junuen jiia-n      [Joan-ta    jiba    eskuela-u    siika-tia-Ø].  
 Pedro-NOM    this    say-PASTC    Juan-ACC    always    school-DIR    go:PRFV-SAY-PRES  
 ‘Pedro said that Juan already left for school.’
- b. Goyo-Ø      junuen jiia-n      [ enchi      chuu’u-ta    me’a-k-tia-n].  
 Goyo-NOM    this      say-PASTC    2SG:ACC    dog-ACC      kill-PRFV-SAY-PASTC  
 ‘Goyo said that you killed the dog.’
- c. Ne            enchi    tejwa-k    [ Vicam-meu    ino    ne            siika-tia]  
 1SG:NOM    2SG:ACC    tell-PRFV    Vicam-PL:DIR    REFL    1SG:ACC    go:PRFV-SAY  
 ‘I told you that I went to Vicam by myself.’

At this stage, it is not clear if this complement type is a mixed style of both indirect and direct quotation, or if it is a completely different construction with a different meaning. My hypothesis is that when used as a quotation marker, *-tea* is semantically bleached (Coulmas 1986; Klamer 2000), since it doesn’t contribute an argument to the argument structure of the sentence, and hence displays the characteristics of a hearsay evidential. But *-tia* is less grammaticalized than *-tea* because it requires the expression of the (accusative) PSA and still can function as a full complement-taking predicate.

There is one more predicate that may be classified as a verb of saying. The idea of negating, denying or hiding a state of affairs is expressed by the main verb *esso ~ etso*

‘hide, deny’ as in (113a). The use of this verb can be extended to encode the notion of denying an event or a proposition (113b-c). Regardless of whether or not the PSA of the matrix core and the PSA of the linked verb are coreferential, the same syntactic-like complement is used.

- (113) a. Bempo kaba’i-ta etso-k  
 3PL:NOM horse-ACC hide-PRFV  
 ‘They hide the horse.’
- b. Empo omo etso-k [ em sim-ne-‘u].  
 2SG:NOM REFL deny-PRFV 2SG:GEN go-EXPE-CLM  
 ‘You denied that you are leaving.’
- c. Bempo a<sub>i</sub> etso-k [ kupteo enchi saja-ka-‘u]<sub>i</sub>  
 3PL:NOM 3SG:ACC deny-PRFV late 2SG:ACC go-PRFV-CLM  
 ‘They denied it, that you left late.’

Semantically, the clause in (113b) conveys a mental process where the speaker verbally hides or denies that she may or not be involved in the event in question, an event that may have not even taken place, i.e., an hypothetical, future oriented event. In the clause in (113c), the speaker denies that she knows the content of the proposition. When the PSA of the matrix core and the PSA of the linked core are coreferential, (i) the matrix core takes some sort of ‘intensive’ reflexive, (ii) the embedded-PSA is generally coded by a genitive pronoun; (iii) the verb of the complement may be marked only by *-ne*; and (iv) the linked core appears in the post-core slot. When the matrix-PSA and the embedded-PSA are different: (i) the highest ranked argument of the embedded core is accusative; (ii) the linked verb is fully tense-marked; and (iii) although the complement may be embedded, it generally appears in the right-detached position and hence the matrix core takes a resumptive pronoun. Interestingly, *etso* can take an accusative NP referring to a third party, e.g. *they negated to/hide from Lupe that you danced at the party*

in (114a). The clause in (114b) is ambiguous in the sense that the referent of the accusative pronoun in the linked core can be *Lupe* or a third party.

- (114) a. Bempo Lupe-ta etso-k [ pajko-po enchi ye'e-ka-'u]<sub>i</sub>  
 3PL:NOM Lupe-ACC deny-PRFV party-ACC 2SG:ACC dance-PRFV-CLM  
 'They hid from Lupe, that you danced at the party.'
- b. Bempo Lupe-ta etso-k [ loteria-ta a yo'o-ka-'u]<sub>i</sub>  
 3PL:NOM Lupe-ACC deny-PRFV lottery-ACC 3SG:ACC win-PRFV-CLM  
 'They hid from Lupe<sub>i</sub> that she<sub>i/j</sub> won the lottery.'

The passive version of each of these sentences depends on which argument occupies the second position of the matrix core. The passive of the active clauses in (113c) is in (115a); the other two passive clauses correspond to the active clauses in (114), respectively.

- (115) a. (A<sub>i</sub>) etso-wa-k [ kupteo enchi saja-ka-'u]<sub>i</sub>  
 3SG:ACC deny-PASS-PRFV late 2SG:ACC go-PRFV-CLM  
 '(Someone) denied that you left late.'
- b. Lupe-Ø etso-wa-k [ pajko-po enchi ye'e-ka-'u]<sub>i</sub>  
 Lupe-NOM deny-PASS-PRFV party-ACC 2SG:ACC dance-PRFV-CLM  
 'Lupe was not allowed to know that you danced at the party.'
- c. Lupe-Ø etso-wa-k [ loteria-ta a yo'o-ka-'u]<sub>i</sub>  
 Lupe-NOM deny-PASS-PRFV lottery-ACC 3SG:ACC win-PRFV-CLM  
 'Lupe<sub>i</sub> was not allowed to know that she<sub>i/j</sub> won the lottery.'

**7.4.2 Juncture-nexus types of discourse predicates.** In sum, direct and indirect quotations in Yaqui are structurally similar: (i) the content of the speech follows the matrix predicate; (ii) the non-matrix verb can be independently marked for tense, temporal adverbials and negation; (iii) each predicate overtly expresses its own core arguments. In contrast to direct quotation, an indirect quoted clause cannot appear by itself as an independent unit because the actor occurs as an accusative NP and the whole clause is either marked by *-'u* or the quotation marker *-tia*. The question that

immediately arises is what the syntactic relationship is between the utterance verb and the content of the speech.

It has been assumed traditionally that an indirect quote is a subordinate clause serving as the direct object of the verb of saying. Some authors differ, however, if a direct quote is or not a syntactic argument of the utterance verb (Partee 1973 & Munro 1982, cited in Li 1986). In RRG, all verbs of saying can be represented in a single, general logical structure as given in (116) below, and the difference among them will fall out from the way the variables in the representation are interpreted. The first argument position  $x$  defines the SPEAKER thematic relation of all verbs of saying. The internal variables refer to the content of the utterance ( $\alpha$ ), which may be a metalinguistic noun, an utterance noun, a noun referring to a conversation topic, or a discourse complement; the addressee ( $\beta$ ), and the language used ( $\gamma$ ).

(116) **do'** ( $x$ , [**express**.( $\alpha$ ).**to**.( $\beta$ ).**in.language**.( $\gamma$ )' ( $x$ ,  $y$ )])

When the verb of saying acts as a complement-taking predicate, the contrast between direct and indirect discourse is signaled by the existence of an illocutionary force operator in the embedded LS, in the case of direct discourse, and by the lack of one in the embedded LS in the case of indirect discourse. That is, the two constructions have the same LS (117a) but different semantic representations. The simplified LS in (117a) corresponds equally to direct quotation (117b) and indirect quotation (117c); in both cases, the content of the speech is a semantic argument of the utterance verb. The abbreviated semantic representations in (117b') and (117c') differ in that the latter lacks an illocutionary force operator modifying the embedded logical structure, and it entails that it will not be realized as a fully independent sentence.

- (117) a. **do'** (Peo, [**say'** (Peo, [**do'** (Goyo, Ø)] CAUSE [BECOME **have'** (Goyo, kaba'i)]))])
- b. Peo-Ø      junuen    jiiia-n:      Goyo-Ø      kaba'i-ta    jinu-'e!  
 Pedro-NOM this      say-PASTC    Goyo-NOM    horse-ACC    buy-IMPER:SG  
 'Pedro said: "Goyo buy the horse!"
- b'. <<sub>IFDEC</sub> <<sub>TNSPASTC</sub> <**do'** (Peo, [**say'** (Peo, [<sub>IFIMPER</sub> <<sub>TNSPRES</sub> < **do'** (Goyo, Ø)] CAUSE [BECOME **have'** (Goyo, kaba'i)]>>>)]>>>))>>>
- c. Peo-Ø      junuen    jiiia-Ø    [ Goyo-ta      kaba'i-ta    jinu-ka-'u].  
 Peo-NOM this      say-PRES    Goyo-NOM    horse-ACC    buy-PRFV-CLM  
 'Pedro says that Goyo bought the horse.'
- c'. <<sub>IFDEC</sub> <<sub>TNSPASTC</sub> <**do'** (Peo, [**say'** (Peo, [<sub>TNSPASTP</sub> < **do'** (Goyo, Ø)] CAUSE [BECOME **have'** (Goyo, kaba'i)]>>)]>>>))>>>

The LS in (a) and semantic representations in (b') and (c') are the same for all syntactic constructions expressing direct and indirect discourse in Yaqui, except the one involving the quotation marker *-tea* which disallows the expression of the speaker. The different syntactic constructions differ, however, in the terms of the juncture-nexus types. First at all, except for the complement-taking predicate *etso* 'deny', the other verbs of saying cannot take a resumptive pronoun co-indexed to the complement unit, as demonstrated below.

- (118) a.\* Peo-Ø<sub>i</sub> am a<sub>j</sub> tejwa-k: [ ne<sub>i</sub> ye'e-ka ]<sub>j</sub>  
 'Pedro told it to them: "I danced."
- b.\* Peo-Ø am a<sub>j</sub> tejwa-k [ Goyo-ta    pajko-po    ye'e-bae-ka-'u ]<sub>j</sub>  
 'Pedro told it to them, that Goyo danced.'

When *-wa* is added to the matrix predicate coding a direct quotation (119a-b), the whole construction is understood as an impersonal clause, i.e., the addressee tends to remain as a non-PSA or be optional. The same is true when *-wa* is added to the matrix predicate coding an indirect quotation (119c-d).

- (119) a. Lupe-Ø      am      tejwa-k:    Goyo-Ø      kaba'i-ta    jinu-k.  
 Lupe-NOM 3PL:ACC tell-PRFV    Goyo-NOM    horse-ACC    buy-PRFV

‘Lupe told them: “Goyo bought a horse.”

- b. Am tejwa-wa-k: Goyo-Ø kaba’i-ta jinu-k.  
3PL:ACC tell-PASS-PRFV Goyo-NOM horse-ACC buy- PRFV  
‘(Someone) told them: “Goyo bought a horse.”
- c. Fermín-Ø junuen jiia-n [ enchi tajkai-m ya’a-ka-‘u ].  
Fermín-NOM this say- PASTC 2SG:ACC tortilla-PL do-PRFV-CLM  
‘Fermín said that you did the tortillas.
- d. Junuen jiiu-wa-n [ enchi tajkai-m ya’a-ka-‘u ].  
this say-PASS-PASTC 2SG:ACC tortilla-PL do-PRFV-CLM  
‘(Someone) said that you did the tortillas.’

Exactly the same pattern is observed for constructions where the complement unit takes a quotation marker. What is not possible is for the reported-PSA to act as the passive-PSA and hence be marked by nominative case as shown in (120c).

- (120) a. Goyo-Ø junuen jiia-n [ Peo-ta kaba’i-ta etbwa-k-tia-n].  
Goyo-NOM this say-PASTC Pedro-ACC dog-ACC steal-PRFV-SAY-PASTC  
‘Goyo said that Pedro stole the horse.’
- b. Junuen jiiu-wa-n [ Peo-ta kaba’i-ta etbwa-k-tia-n].  
this say-PASS-PASTC Pedro-ACC dog-ACC steal-PRFV-SAY-PASTC  
‘(Someone) said that Pedro stole the horse.’
- c. \* Junuen jiiu-wa-n [ Peo-Ø kaba’i-ta etbwa-k-tia-n].  
‘Pedro was said to have stolen the horse.’

That is, the incorporation of *-wa* yields an impersonal interpretation of the speech act where the structural form of the direct quotation remains unchanged and, most important, there is no argument functioning as the passive-PSA. The fact that direct quoted clauses take their own illocutionary force operators, meaning that it does not depend upon the information of the matrix clause for the expression of such clausal operator, indicates that they constitute sentential complements, rather than clausal complements. Accordingly, direct quotation in Yaqui is expressed by sentential (daughter) subordination, i.e., the sentential complement is directly linked to the sentence node. This would be another

example of a syntactic-semantic mismatch since the complement sentence does not fill a core argument position, despite being a semantic argument of the matrix verb; rather, it occurs as a direct daughter of the sentence node. A simplified representation for the sentential subordinate clause *Pedro said this: “Goyo buy the horse!”* in (117b) is presented below. The first clause is an assertion and the second one an imperative.

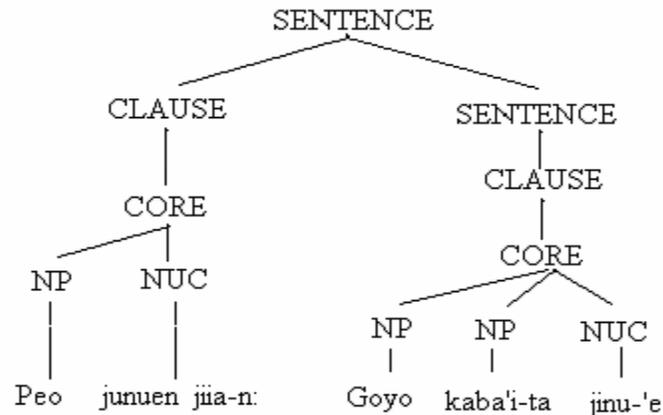


Figure 7.6: Direct quotation as sentential (daughter) subordination for *Pedro said: “Goyo buy a horse!”* in (117b)

Indirect quotations expressed by *tejwa* ‘tell’ and *junuen jia* ‘say this’, as well as *etso* ‘hide, deny’ are expressed by clausal subordination, i.e., the clausal complement appears in the post-core slot and the matrix core does not take a resumptive pronoun. The representation of the clause *Pedro says that Goyo bought a horse* in (117c) is illustrated below. Because we are dealing with a clausal juncture, each of the clauses links separately.

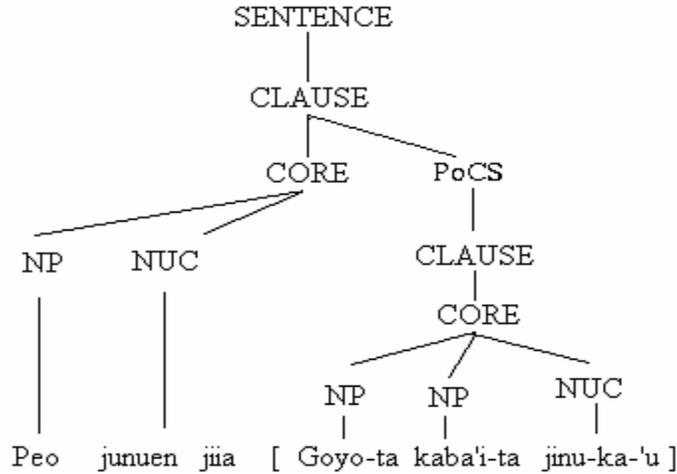


Figure 7.7: Indirect quotation as (symmetrical) clausal subordination for the clause *Pedro said that Goyo bought a horse* (117b)

The situation is crucially different for the morphological structure expressing indirect quotation. When the suffix *-wa* is added to the verbal suffix *-tia* in (121a-b), it is the highest ranked argument of the embedded LS that functions as the passive-PSA and hence it is marked by nominative case, e.g., *you were said to have stolen the horse*. The passive suffix can be also added to the inner verb (121c) deriving an impersonal clause, e.g., *my father said someone stole the horse*. In the former, the speaker does not want to take responsibility for the information asserted, while in the latter the speaker opts to omit or pretends not to know who is the actor of the reported event.

- (121) a. Nim      achai    enchi      kaba'i-ta    etbwa-k-tia-n.  
 1SG:NOM father 2SG:ACC horse-ACC steal-PRFV-SAY-PASTC  
 'My father said that you stole the horse (i.e., he denounced you).'
- b. Empo      kaba'i-ta    etbwa-k-tiu-wa-n.  
 2SG:NOM horse-ACC steal-PRFV-SAY-PASS-PASTC  
 'You were said to have stolen the horse.'
- c. Nim      achai    kaba'i-ta    etbwa-wa-k-tia-n.  
 1SG:NOM father horse-ACC steal-PASS-PRFV-SAY-PASTC  
 'My father said that someone stole the horse.'

That is, in contrast to the looser syntactic representation referring to indirect quotation, the higher integrated *tia*-construction requires the highest ranked argument of the embedded LS to function as the passive-PSA. This pattern closely resembles the one observed for morphological structures coding direct perception, belief and thinking: there is a syntactic core argument of the embedded LS that serves as a core argument of the matrix predicate for purpose of passive voice. However, there is no change in the semantic role of the highest ranked argument of the embedded LS: *enchi* ‘2sg’ is the actor of *steal* in (121a) and (121b), it is not the undergoer of *say* in (121b), because in both examples, what my father said is ‘you stole the horse’, that is, the whole complement functions as the undergoer of the verb of saying. Because the two cores can be independently modified by aspectual suffixes and negation, we are dealing with core coordination. The simplified representation for a clause such as *my father said that you stole the horse* in (123a) is illustrated in Figure 7.8. Notice that the highest ranked argument of the embedded LS is linked to a pre-core argument position.

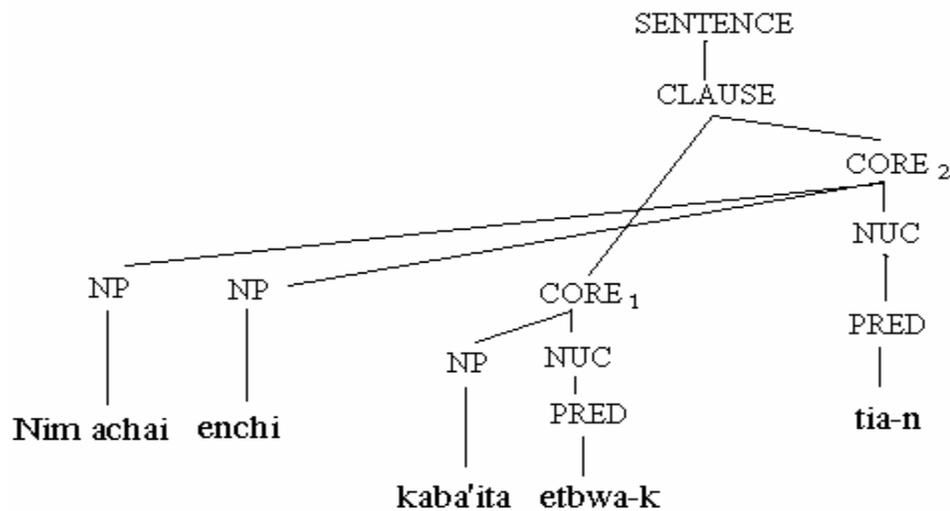


Figure 7.8: Indirect quotation as core coordination for the clause *My father said you stole the horse* in (121a)

Although a construction involving the verbal suffix *-tea* already refers to an unspecified speaker, the suffix *-wa* can be added to the non-matrix event to derive an impersonal clause, as shown in (122b).<sup>14</sup> According to the intuitions of native speakers and the Spanish translation of such constructions, a passive *-tea* clause differs from a passivized *-tia* in that the former refers to *one individual* speaker as the actor of the speech act, e.g., *se dice que* ‘(one) says that’, whereas the latter tends to refer to multiple, plural speakers of the speech act, e.g. *dicen que* ‘(some) say that’.

- (122) a. Goyo, empo karo-ta nenka-k-tea-Ø.  
 Goyo, 2SG:NOM car-ACC sell-PRFV-SAY-PRES  
 ‘Goyo, (one) says that you sold the car.’
- b. U karo-Ø nenki-wa-k-tea-Ø.  
 the car-NOM sell-PASS-PRFV-SAY-PRES  
 ‘(One) says that the car was sold.’
- c. Goyo, empo karo-ta nenka-k-tiu-wa-Ø.  
 Goyo, 2SG:NOM car-ACC sell-PRFV-SAY-PASS-PPRES  
 ‘Goyo, (some) say that you sold the car.’

### 7.5 Summary

This chapter has analyzed in detail the complement types involving perception, propositional attitude, cognition, and verbs of saying. We have seen that these perception and mental predicates are realized in Yaqui by more than one abstract linkage relation, and that is related to the semantics of the construction. For perception predicates, the language uses specific complementation options to distinguish between direct/immediate perception and indirect/non-immediate perception. The former can be coded by a morphological structure (core co-subordination) and a nominalized complement (core subordination); the latter can be expressed by an embedded complement clause

<sup>14</sup> A possible LS representing this impersonal, direct quotation construction taking *-tea* for the clause ‘it is said that Goyo sold the car’ in (119a):

**do'** (Ø, [**say'** (Ø, [**do'** (2sg, Ø)] CAUSE [BECOME NOT **have'** (2sg, karo)])))]

(asymmetrical core subordination) or a complement extraposed to the right (sentential subordination). There is also a construction sharing properties of both notions: when the matrix core copies the embedded-PSA (clausal subordination).

The situation is slightly more complex regarding propositional attitude predicates. On the one hand, the same mental verbs have been grammaticalized to such an extent that they may function as deontic and epistemic modal operators, e.g., *-maachi* ‘able, ought’, *-le* ‘feel, presumptive’, *-ea(n)* ‘can, should’. On the other, when acting as complement-taking predicates, the language requires certain syntactic structures conveying specific semantic meanings. Constructions involving *maachia* ‘believe’, *ea* ‘think about/that’ and *-ii’aa* ‘want’ show the highest degree of structural integration between the matrix verb and its complement, and each of these predicates places specific restrictions on the operator marking on the linked verb. *Maachia* and *-ii’aa* demand a bare form, meaning that the linked verb depends on the matrix predicate for operator information; this yields core co-subordination. *ea* allows the linked verb to be independently marked by aspectual suffixes, yielding core coordination. Moreover, since the two cores in a construction involving *-ii’aa* share a semantic argument, the undergoer, this construction type involves undergoer control. The other two correspond to raising constructions since they share a syntactic argument, the PSA of the linked verb. Furthermore, the language presents an alternative coding to express a closely related meaning. Complex constructions involving the matrix predicates *junuen’ea* ‘wish, agree’ and *ea* taking a clausal complement marked *-u* are examples of clausal subordination, since the complement clause appears in the post core slot. When the verb *ea* takes an embedded complement marked by *-benasia*, it yields asymmetrical core subordination.

The predicate *suale* ‘trust in’ may be realized by asymmetrical core subordination (when embedded) or sentential subordination (when extraposed to the right).

Regarding cognition predicates, the general verb form *ju’unea* expressing knowledge is derived from the main verb ‘*ea* ‘think’. As a matrix predicate, *ju’unea* has two complementation options: it may take an embedded clause as a core argument yielding asymmetrical core subordination, or it may take a right-extraposed clause resulting in symmetrical clausal subordination. Verbs expressing the notion of *remembering* and *forgetting* can be interpreted as coding a psych-action sense or a cognition sense; since the syntactic-like complement always strongly appears in the right-detached position, it yields sentential subordination. The same linkage type is found with *mammate* ‘notice, realize’.

Verbs of saying also provide good evidence for the claim that a given verb may take more than one juncture-nexus type in complex sentences. Indirect quotation expressed by the matrix predicates *tejwa* ‘tell’ and *junuen jiia* ‘say this’ taking a clause as a complement unit are examples of symmetrical clausal subordination, unless the matrix core takes a resumptive pronoun and the linked clause is placed in the right-detached position. The latter case is an instance of sentential subordination. Direct quotation is systematically realized as sentential subordination. The extremely common morphological structure taking *-tia* ‘say that’ is realized as core coordination.

## Chapter 8

### SEMANTICS-TO-SYNTAX LINKING IN COMPLEX SENTENCES

The goals of this final section are three-fold: first, to recapitulate the juncture-nexus combinations found in Yaqui; second, to explore the linking algorithm for the syntactic and semantic representation of nuclear, clausal and core junctures; and third, to suggest a possible functional-cognitive explanation of why the language has alternative syntactic representations to express closely related semantic meaning.

#### 8.1. A recapitulation of complement types

We have seen that Yaqui provides good evidence for the primary principle governing the interaction of the syntactic and semantic relation hierarchies. The closer semantic relations are embodied by the stronger syntactic linkages. The top of the semantic hierarchy is mainly coded by a morphological structure where the matrix predicate is immediately adjacent to the non-matrix predicate, e.g., direct causation marked by *-tua*, phase, and desiderative predicates. The fact that stronger semantic relations are grammaticalized into morphological structures is not a problem for the RRG theory of clause linkage. VV&LP (p. 484) comment that the replacement of the nuclear junctures by the morphologically derived construction follows the basic claim of the IRH; the stronger the semantic relation, the tighter the morpho-syntactic bond between the units, and the evolution from a tightly bound syntactic construction to an even more tightly bound morphological representation is a natural extension of the iconic relation between form and meaning. In a situation like this one, RRG claims that the tightest syntactic linkage will not instantiate the top semantic relation, because they are not realized by a complex syntactic structure but a morphological complex predicate.

To say this in the context of Yaqui complex constructions, however, would mean that many instances of morphological structures coding semantic relations lower in the hierarchy would be left out. Jussives, direct perception, propositional attitude and indirect quotation differ from the first group of verbs, and also from the last part, in that most of them show alternative syntactic representations, one morphological and one syntactic. In contrast, complement-taking predicates coding an assertion or a fact, such as the cognitive predicates *know*, *realize*, *remember*, *forget*, as well as indirect perception and direct quotation, do not show alternative constructions, as they are systematically coded by looser syntactic representations. The choice of tighter syntactic structures to express the semantic notions at the middle point of the scale may be problematic for the RRG theory, unless we say that there is a marked shift from syntactic to morphological structure as we go down the hierarchy. The looser the semantic relation, the more marked the morphological construction should be. A piece of evidence for this marked shift is the fact that the use of the tightly linked syntactic construction as the unique device decreases as we go down the IRH.

In sum, the analysis revealed that Yaqui complex sentences are expressed by, at least, seven juncture-nexus linkage types encoding different semantic notions: nuclear co-subordination, core co-subordination, core subordination, core coordination, clausal subordination, clause coordination and sentential subordination.

Nuclear co-subordination is found in direct causation, phase, psych-action predicates expressing desire and intention on the part of the speaker. This juncture-nexus relation is characterized by the following semantic and morpho-syntactic properties. There are two nuclei taking one set of core arguments; except for resultative constructions which

involve two lexical units (i.e., the matrix predicate is not a verbal suffix), the linked unit is immediately adjacent to the matrix nucleus; the linked nuclei must be a bare form. Evidence for a non-subordinate nexus comes from the fact that, first, the content of the linked verb does not serve as a core argument of the matrix nuclei; second, the two units obligatorily share an argument, i.e., the causee; third, when the matrix nucleus is passivized, the highest ranked argument of the linked nuclei serves as the passive-PSA. That is, there is an argument of the embedded LS which serves as a core argument of the matrix predicate for the purpose of passive voice. The fact that both nuclei must share operators at the level of the nucleus (i.e., the completive suffix *-la*) rules out coordination.

Core co-subordination is observed in certain psych-action predicates sharing the PSA. Regardless of whether the construction is expressed through a morphological structure or a syntactic-like complement marked by *-kai*, this combination is defined in the following terms. There are two units, each with its own set of core arguments, constituting two distinct cores. Although the content of the linked core is a semantic argument of the matrix predicate, subordination is ruled out since the linked unit does not serve as a core argument of the matrix core. Indeed, the two units obligatorily share a core argument, a property that defines non-subordinate combinations. For this group of predicates, the shared argument corresponds to the matrix PSA. Second, when they are expressed by a morphological construction and the matrix predicate is passivized, it is the shared argument which serves as the passive-PSA. Third, when they are expressed by a syntactic-like complement marked by *-kai*, the matrix predicate can hardly be passivized. Furthermore, and regardless of the complement-type structure, the linked core must be unmarked for aspectual operators, meaning that it depends on the information coded by

the matrix predicate. It cannot be either independently modified by temporal adverbs nor negation. This operator dependency rules out coordination.

Core coordination is mainly found in morphologically derived constructions involving jussives, direct perception, and propositional attitude predicates coding the notions of believe and thinking. What distinguishes core coordination from core co-subordination is operator dependency. In a coordinate nexus, the linked core may be independently marked by, at least, one operator at the level of core such as the expected suffix *-ne* or the perfective *-ka*. In Yaqui, the two cores can also be independently modified by temporal adverbs but not by negation. Another piece of evidence for a non-subordinate nexus is the fact that the two cores share either a semantic argument (undergoer control constructions) or a syntactic argument (raising constructions).

In all syntactic combinations discussed so far, the content of the linked core is a semantic but not a syntactic argument of the matrix predicate. When the matrix predicate of a non-subordinate combination is passivized, there is a core argument of the embedded LS –the shared argument- which serves as the passive-PSA and hence is marked nominative.

In a core subordinate combination, each core takes their own set of core arguments but, as a whole, the linked unit functions as a core argument of the matrix core. That is, the two units show a structural dependency. When the passive suffix *-wa* is added to the matrix predicate, the linked unit functions as the unique non-PSA core argument. The language shows a restriction, namely, only noun phrases can serve as a passive-PSA; core and clausal units cannot serve to this function. Since there is no a passive-PSA NP, the construction is understood as impersonal. There are two types of subordinated

complements, symmetrical and asymmetrical, and both precede the matrix predicate (i.e., are embedded). The first type concerns the nominalized complements marked by *m-ta*; here the linked unit must be unmarked or be marked by the perfective suffix *-ka*, but never by the past continuative *-(ka)n*. The fact that the linked unit cannot be marked by tense indicates that it is a core rather than a clausal unit, hence the linkage is symmetrical. The second type refers to a syntactic-like complement marked by *-‘u*, *-po*, or *-benasia*; here the linked unit can be marked not only by aspectual but also by tense suffixes. It means that the linked unit is a clause, hence the linkage is asymmetrical. Yaqui tries to avoid asymmetrical linkage by extraposing the complement clause to the right.

Clausal subordination is characterized because the linked clause is placed in the post-core slot, resulting in a symmetrical linkage, i.e. the clausal unit is directly linked to the clause node. When the syntactic complement marked by *-‘u* or *-po* immediately follows the main predicate, without a pause, the matrix core does not take a resumptive pronoun. When passivized, the linked clause serves as the unique non-PSA core argument but, since there is no a passive-PSA NP, the constructions is impersonal. And finally, in sentential subordination the linked clause (or sentence) is placed in the right-detached position, directly linked to the sentential node. The matrix predicate takes a resumptive pronoun or copies out the embedded-PSA, and there is a pause between the main clause and the subordinate clause. When passivized, it is the core argument of the matrix core, rather than the linked unit, which functions as the passive-PSA. Both clauses are independently marked by TAM operators, negation, and temporal adverbs.

In addition to these juncture-nexus types, there is also peripheral core and clausal subordination as well as clausal coordination. Adverbial complex constructions such as

simultaneous or sequential events, as well as reason constructions are expressed by ad(verbial)-core subordination and clausal subordination, respectively. In contrast to the subordinated linkage type observed for complement-taking predicates, here the linked unit is placed in the periphery, modifying the core or the clause. When the two events are temporally unrelated (e.g. conjunction or disjunction), the abstract linkage is expressed by clausal coordination.

The following tables list the juncture-nexus types found in Yaqui. In the tables, column one refers to the semantic notion coded by the predicate and column two its juncture-nexus linkage. For core and clausal junctures, column three specifies whether or not the PSAs of the two units should be coreferential; column four indicates whether or not the two units must share a core argument; column five specifies the type of control (i.e., semantically shared argument) and column six identifies ‘raising’ constructions (i.e., syntactically shared argument). The last three columns indicate the TAM information coded in the linked verb, the clause linkage marker, and the position of the non-morphological complement units, respectively. Regarding the position, ‘embedded’ indicates that the linked unit precedes the matrix predicate, i.e., the position in which non-PSA core arguments usually appears; when marked as ‘(embedded)’, it indicates that there is an alternative position for the linked complement, either in the post-core slot ‘PoCS’ or the right-detached position ‘RDP’.

Table 8.1 Nuclear junctures

	Predicate		Juncture-nexus	TAM linked verb	CLM	Position
Direct	-tua	‘cause’	Nuclear cosubordination	-la		
causation	ya’a	‘make’	Nuclear cosubordination	-Ø	-si	Embedded
Phase	-taite	‘start’		-Ø		
	-japte	‘start (pl)’				
	-ansu, -su	‘finish’	Nuclear cosubordination			
	-yaate	‘stop’				
	-kikte	‘stop (sg)’				
Psych-	-bae	‘desire’		-Ø		
action	-pea	‘intent’	Nuclear cosubordination			
Purposive	-se/-bo	‘go to’	Nuclear cosubordination	-Ø		

Table 8.2 Core and clausal junctures in Yaqui

	Predicate		Juncture-nexus	Corref. PSAs	Argument shared	Control Relation	Raising	TAM linked core	CLM	Position
Psych-action	-roka	‘promise’	Core co-subordination	Yes	Yes	A		-Ø		
	bo’obicha	‘hope’	Core co-subordination	Yes	Yes	A		-Ø	-bae-kai	
			Clausal subordination	No	No			-ne	-‘u	PoCS
	majae	‘afraid’	Clausal subordination	Opt.	No			-Ø, -ne	-‘u, -po	PoCS
	teenku	‘dream’	Core co-subordination	Yes	Yes	A		-Ø	-kai	
			Core subordination	No	No			-Ø, -ka	-m-ta	Embedded
	kopte	‘forget’	Core subordination (asymmetrical)	Yes	No			-Ø, -ne	-‘u, -po	(Embedded)
	wawaate	‘remember’	Core subordination (asymmetrical)	Yes	No			-Ø, -ne	‘u, -po	(Embedded)
Jussives	-sae, -su’utoja	‘order’ ‘allow’	Core coordination	No	Yes	U		-Ø, -ne		
	sawe su’utoja	‘order’ ‘allow’								
	lisensia ajbwana	‘authorize’ ‘ask’	Clausal subordination	No	No			-Ø, -ne	-‘u, -po	PoCS
	teuwa	‘tell’								
Purpose	activity verbs	‘do X to Y’	Core co-subordination	Yes	Yes	A		-Ø	-bae-kai	PoCS
			Core coordination	Opt.	No			-Ø, -ne	-betchi’ibo	PoCS
Direct Perception	bicha	‘see’	Core co-subordination	No	Yes		Yes	-Ø		
	jikka	‘hear’								
	i’nea	‘feel’	Core subordination (symmetrical)	No	No			-Ø, -ka	-m-ta	Embedded
	jupta ji’ibwe	‘smell’ ‘taste’								
	jicha Jikka	‘see’ ‘hear’	Clausal subordination	No	No (copy)			all	-‘u -po	PoCS

Table 8.2 Core and clausal junctures (cont)

	Predicate		Juncture-nexus	Corref PSAs	Argument shared	Control Relation	Raising	TAM linked core	CLM	Position
Indirect Perception	bicha	‘see’	Core subordination (asymmetrical)	No	No			all	-‘u	(Embedded)
	jikka	‘hear’								
Indirect Perception	i’nea	‘feel’	Sentential subordination	No	No			all	-‘u	RDP
	jupta	‘smell’								
Indirect Perception	ji’ibwe	‘taste’	Core co-subordination	No	Yes		Yes	-Ø		
	-maachia	‘believe’								
Propositional attitude	suale	‘trust in’	Core subordination (asymmetrical)	Opt.	No				-‘u,	(Embedded)
			Clausal subordination	No				all	-po	PoCS
			Sentential subordination	No	No (copy)					RDP
	‘ea	‘think that’	Core coordination	No	Yes		Yes	-Ø, -ne, -ka	-t	
	‘ea	‘feel that’	Core subordination (asymmetrical)	Opt.	No			all	-benasia	Embedded
	(nuen) ’ea	‘think that’	Clausal subordination	Opt.	No			all	-‘u	PoCS
Cognition	-‘ii’aa	‘want’	Core co-subordination	No	Yes	U		-Ø		
	Junuen’ea	‘wish, agree’	Clausal subordination	No	No			-Ø, ne	-‘u	PoCS
	june’an	‘know’	Clausal subordination	Opt.	No					PoCS
	ju’uneeya	‘know it’	Sentential subordination	No	No					RDP
	mammate	‘realize’	Sentential subordination	Opt.	No			all	-‘u	RDP
	kopte	‘forget’	Sentential subordination	No	No				-po	RDP
wawaate	‘remember’	Sentential subordination	No	No					RDP	

Table 8.2 Core and clausal junctures (cont)

	Predicate		Juncture-nexus	Corref PSAs	Argument shared	Control Relation	Raising	TAM linked core	CLM	Position
Indirect discourse	tejwa	‘tell’	Clausal subordination	Opt	No			all	-‘u	PoCS
	junuen jiia	‘say’								
	etso	‘deny’	Clausal subordination	Yes	No			-Ø, -ne	-‘u	PoCS
			Sentential subordination	No	No		all	-‘u	RDP	
	-tia	‘say’	Core coordination	Opt.	Yes		Yes	-Ø, -ne, -ka		
Direct discourse	tejwa	‘tell’	Sentential subordination	Opt.	No			all	-Ø	RDP
	junuen jiia	‘say’								

Table 8.3 Other instances of core and clausal junctures

	Juncture-nexus	Corref. PSAs	Shared core Argument	Control Relation	TAM linked core	CLM
Reason	Ad-clausal (peripheral) subordination	Opt.	No		All	bweituk
Simultaneous Actions	Ad-core subordination (symmetrical)	Yes	Yes	A	-Ø	-kai
	Ad-core subordination (asymmetrical)	No			All	-o
Sequential Actions	Ad-core subordination (symmetrical)	Yes	Yes	A	-Ø	-su-kai
	Ad-core subordination (asymmetrical)	No			All	ketunke ... -kai -su-o ketunke
Situation- situation: unspecified	Clausal coordination	Opt.				into bweta o

Recall that the juncture-nexus types are abstract linkage relations, not grammatical construction types, and each type may be realized by more than one grammatical construction in the language. The following clauses exemplify core subordination. The clause in (1a) is an instance of symmetrical core subordination; the embedded core marked by *-m-ta* serves as a core argument of the matrix core *teenku* ‘dream’. The clause in (1b) shows asymmetrical core subordination; there is a complement clause marked by *-benasia* directly linked to the matrix core. In these examples, the content of the linked unit is both the semantic and the syntactic argument of the matrix core.

- (1) a. Nepo [ Peo-ta enchi kuna-ka-m-ta ] teenku-k.  
 1SG:NOM Peo-ACC 2SG:ACC marry-PRFV-NMLZ-ACC dream-PRFV  
 ‘I dreamed of Peter marrying you!’
- b. Ne kaa [ enchi kocho-ka-benasia ] = ’ea-Ø.  
 1SG:NOM NEG 2SG:ACC sleep-PRFV-CLM think-PRES  
 ‘I don’t think that you slept.’

Examples of the same formal construction, the morphological structure, referring to different juncture nexus types are given in (2). The clause in (2a) expresses direct causation, while the clause in (2b) illustrates the use of *-sae* ‘order’. Although both refer to an undergoer control construction, the former is an instance of nuclear co-subordination and the latter is an example of core coordination. The construction in (2c) shows core co-subordination, since the linked verb depends upon the matrix core for operator information; this example constitutes a raising construction. Although structurally similar, each of these construction types behaves differently for the purpose of linking.

- (2) a. Goyo-Ø Peo-ta teopo-u siim-tua-k.  
 Goyo-NOM Peo-ACC church-DIR go-CAUSE-PRFV  
 ‘Goyo made/let Pedro go to the church.’

- b. Empo Ivan-ta chukula ubba-ne-sae-k.  
 2SG:NOM Ivan-ACC later bathe-EXPE-ORDER-PRFV  
 ‘You ordered Ivan to bathe later on’
- c. Goyo-Ø Tibu-ta wakas-ta etbwa-maachia-Ø.  
 Goyo-NOM Tibu-ACC cow-ACC steal-think-PRES  
 ‘Goyo believes Tibu to have stolen the cow.’

Thus, there is no one-to-one mapping between juncture-nexus types and formal construction types. And vice versa, the same predicate can take different juncture-nexus types with the same semantic effects. The semantics-to-syntax linking for complex constructions in Yaqui is provided next.

## **8.2. Linking semantics and syntax in Yaqui complex sentences**

This section explores to what extent the linking algorithms proposed for simple sentences in chapter 4 must be modified to deal with the semantics-to-syntax linking in complex sentences. As proposed by RRG, most complex sentences pose no particular difficulties for the linking system for simple constructions. Nuclear junctures, for instance, act as simple clauses containing a complex predicate, and they basically follow the algorithms for simple sentences. Clausal junctures are composed of clauses, each of which links like an independent clause. The real challenge comes from core junctures, especially non-subordinate types, with their obligatory sharing argument and operators. In the discussion below, reference to other complex constructions not discussed in this dissertation will be made whenever relevant.

The algorithms for linking semantics-to-syntax for simple clauses developed in chapter 4 are repeated below. For convenience, this version of the linking algorithm presents only the relevant information for a language like Yaqui and includes the case and postpositional assignment rules.

(3) **Linking algorithm: Semantics → Syntax**

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 principles of Accessibility (a'')
  - a'. Privileged Syntactic Argument selection hierarchy  
Arg of DO > 1<sup>st</sup> arg of **do'** (x, ...) > 1<sup>st</sup> arg of **pred'** (x, y) > 2<sup>nd</sup> 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 postpositions according to:
    - b'. Case marking rules
      - a. The highest-ranking core macrorole argument takes nominative case.
      - b. The other direct core argument(s) takes accusative case.
    - b''. Postposition assignment rules
      - 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 *-betchi'ibo* to the non-MR *y* argument if in LS segment containing: PURP [BECOME **pred'** (y, z)], *y* is not selected as a macrorole.
    - d. 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.
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. Passive voice reduces the number of core slots by 1.
    2. The occurrence of a syntactic argument in the post-core slot reduces the number of core slots by 1.

5. Assign XPs to positions in the syntactic representation of the sentence.
  - a. If there is a [+WH] XP, assign it to the pre-core.
  - b. Assign the [-WH] XPs to the appropriate positions in the clause.
  - c. A [-WH] XP may be assigned to the pre-core or post-core slot, subject to focus structure restrictions.
  - 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 post-core slot, or
    3. the left-detached position.

Although most of these linking algorithms can handle complex constructions in Yaqui, some of them would need to be revised.

**8.2.1 Linking in nuclear junctures.** All instances of direct causation, phase predicates, and psych-action predicates expressing volition and intention on the part of the speaker, are coded by a complex predicate made up of two nuclei to form a single, complex nucleus with a single set of core arguments. The same is true for result state causative constructions where the causing event and the caused event are coded by two independent nuclei. Nuclear junctures have logical structures very much like lexical causative verbs and hence have similar linking properties. Each of the two nuclei may contribute an argument to the logical structure of the complex nucleus. The verbal form coding the notions of cause, phases and volition, contributes the actor participant; the verbal form coding the caused event, the begun, finished, or concluded event, and the intended event, contributes the undergoer. With morphological causatives taking *-tua*, the caused event contributes two arguments when transitive, and one of them is a potential actor. The semantics to syntax linking in an active clause like the one in (4) is as follows. According to the revised Actor-Undergoer Hierarchy, the highest ranked argument (causer) will be the actor, and the second-highest ranking argument (causee) will be the undergoer (step 2). The PSA is the highest ranking argument (step 3a). The case rules for

Yaqui state that the nominative case is assigned to the highest macrorole (actor), while the accusative case is assigned to the other direct core arguments (step 3b). The logical structure in (4a') maps into a single core, since we are dealing with a nuclear juncture.

- (4) a. Aurelia-Ø enchi yi'i-tua-k.  
 Aurelia-NOM 2sg:ACC dance-CAUSE-PRFV  
 'Aurelia made/let you dance.'

a'. [**do'** (Aurelia, Ø)] CAUSE [**do'** (2sg, **dance'** (2sg))]

The abbreviated diagram in Figure 8.1 shows the semantics-to-syntax linking in Yaqui causative nuclear juncture. The number refers to the steps in the linking. First, the semantic representation of the verb as listed in the lexicon (1). Then, there are the actor and undergoer assignment (2), and the morpho-syntactic properties of the arguments, specifically PSA selection, case and postpositional assignments (3). Step (4) is the syntactic template selection, stored in what is called the 'syntactic inventory'. Step (5) establishes the positions of the XPs in the syntactic representation of the sentence.

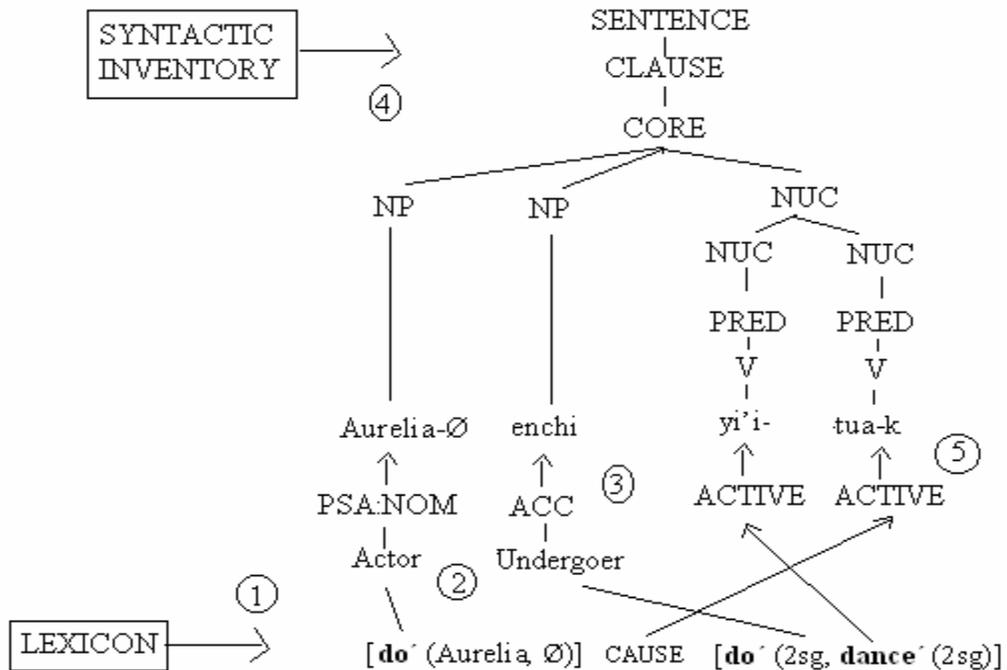


Figure 8.1: Linking from semantics-to-syntax in a Yaqui nuclear juncture

Therefore, the linking algorithm proposed for simple clauses does not need to be modified to deal with nuclear junctures.

**8.2.2 Linking in clausal junctures.** Since clausal junctures are made up of clauses, their linking properties are for the most part determined by the linking properties of the constituent clauses. Consider the following two examples of non-subordinate clausal junctures. The former involves clausal coordination and the latter peripheral subordination.

(5) a. Empo ye'e-ka aapo into bwiika-k.  
 2SG:NOM dance-PRFV 3SG:NOM and sing-PRFV  
 'You danced and he sang.'

b. Ka = te Rosa-ta nu'u-ka bweituk aapo apela siika.  
 NEG = 1PL:NOM Rosa-ACC take-PRFV because 3SG:NOM already go:PRFV  
 'We did not pick up Rosa there because she already left.'

In (5a), *empo ye'eka* 'you danced' and *aapo bwiika* 'he sang' are distinct clauses, and each is linked independently of the other, just as if each was a simple sentence on its own. The same is true in the *because*-clause in (5b). The fact that there is a pronoun in the second clause in (5b), e.g. *because she already left* referring to *Rosa* in the first clause does not affect the linking. According to Bickel (1993, 2003), and Van Valin (2005), adverbial clauses marked by *because*, *if*, or *although* in English have different properties from adverbial clauses modifying a core marked by *after* or *before*. Unlike the latter, they do not express the spatial or temporal setting of the event expressed by the core but the reason or a condition for the event expressed by the clause as a whole. Because of this, this type of clause does not occur in the CORE periphery (ad-core subordinate), but rather in the CLAUSE periphery (ad-clausal subordinate). This linkage corresponds to the second type of subordination, peripheral subordination, since the linked unit is a modifier

occurring in the periphery of a layer of the clause. The constituent projection of the ad-clausal subordinate *we did not pick up Rosa because she already left* in (5b) is given in Figure 8.2. In Yaqui, as in English, reason clauses are marked by a kind of predicative adposition as the CLM, taking a clausal complement.

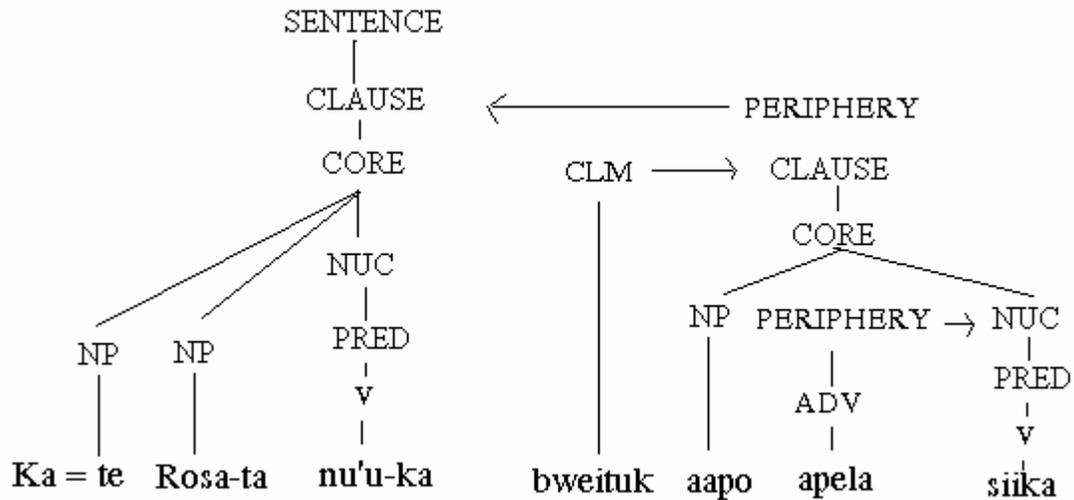


Figure 8.2: Constituent projection for ad-clausal subordination

Van Valin (2005) points out that the semantics-to-syntax linking algorithm as established in (3) cannot correctly assign a *because*-clause to the CLAUSE periphery, because in step 5d1 all the adjuncts PPs are linked to the CORE periphery. If reason and concessive clauses occur in the CLAUSE periphery, then the corresponding reason and concessive adjuncts PPs, e.g., *Chris was happy despite the bad weather*, should also be in the CLAUSE periphery. Consequently, he re-formulates the step 5d1 as follows:

(6) Revision of step 5d1 (Van Valin 2005: 212-213):

- d. Assign the XP(s) or LS in LS(s) other than that of the predicator in the nucleus to
  1. a periphery (default)
    - a. If the representation is **pred'** (NP/LS, LS<sub>MAIN</sub>), where **pred'** is a pre-(post-)positional predicate, then assign the P + NP/Core/Clause to the periphery CORE.
    - b. If the representation is LS<sub>MAIN</sub>, **pred'/CONNECTIVE'** NP/LS, then assign the P + NP or CLM + Clause to the periphery CLAUSE.

This says that if the semantic representation is of the type of a circumstance (i.e., the spatial or temporal parameters of an event), then the predicative pre- or postposition plus its object, be it an NP, a core or a clause, is an ad-core modifier and is assigned to the CORE periphery. If, on the other hand, the semantic representation is of the type of a reason (i.e., the motivation or cause for an action or event) or concessive (i.e., the content of the main clause holds unexpectedly, given the content of the subordinate clause), or the corresponding representation involves the predicative prepositions *because of* and *despite*, then the resulting adjunct PP is linked to the CLAUSE periphery.

A completely different type of clausal/sentential subordination is observed with certain mental predicates taking a right-extraposed complement. We have seen that, although the complement clause of indirect perception, cognition and propositional attitude verb *suale* ‘trust in’ may appear embedded in the main clause, the preferred position for the complement is in the right detached position. When the complement clause appears in the right-detached position, the matrix predicate takes a resumptive pronoun as a core argument and there is a pause between the main clause and the linked clause. Compare the two examples in (7).

- (7) a. Peo-Ø [ kaba’i-ta enchi jinu-ka-‘u] suale-n.  
 Peo-NOM horse-ACC 2SG:ACC buy-PRFV-CLM believe-PASTC  
 ‘I believed that you had bought a horse.’

a’. **believe’** (1sg, [[**do’** (2sg, Ø)] CAUSE [BECOME **have’** (2sg, kaba’i)])

- b. Peo-Ø a<sub>i</sub> suale-Ø [ kaba’i-ta enchi jinu-ka-‘u]<sub>i</sub>  
 Peo-NOM 3SG:ACC believe-PRES horse-ACC 2SG:ACC buy-PASTP-CLM  
 ‘I believe it, that you bought a horse.’

b’. **believe’** (1sg, [3sg, [**do’** (2sg, Ø)] CAUSE [BECOME **have’** (2sg, kaba’i)]])

In the LS of the matrix predicate, the LS of the complement unit links internally independently of the matrix logical structure, but as a whole it is part of the matrix logical

structure in the semantics. The two LSs differ in that in (7a') the linked unit functions as a syntactic core argument of the matrix core, whereas in (7b') it is the resumptive pronoun that acts as a direct core argument. According to their morpho-syntactic properties, when the complement is embedded, the matrix predicate and its complement yield a (daughter) core subordination. Hence, the linkage is asymmetrical since a larger unit is linked to a smaller unit. When the complement appears in the preferred position outside the clause, the linkage type depends on whether or not the complement is placed in the post-core slot (clausal subordination) or in the right-detached position (sentential subordination); in the latter case, the matrix core takes a resumptive pronoun. In both cases, the linkage is symmetrical since the complement clause is outside the matrix core. When the linked unit appears outside the clause, the number of syntactic slots for arguments within the core remains without change: the resumptive pronoun fills in the relevant core argument position of the matrix core. The semantics-to-syntax linking for the subordinate clause *I believe it, that you bought a horse* in (7a) is given below.

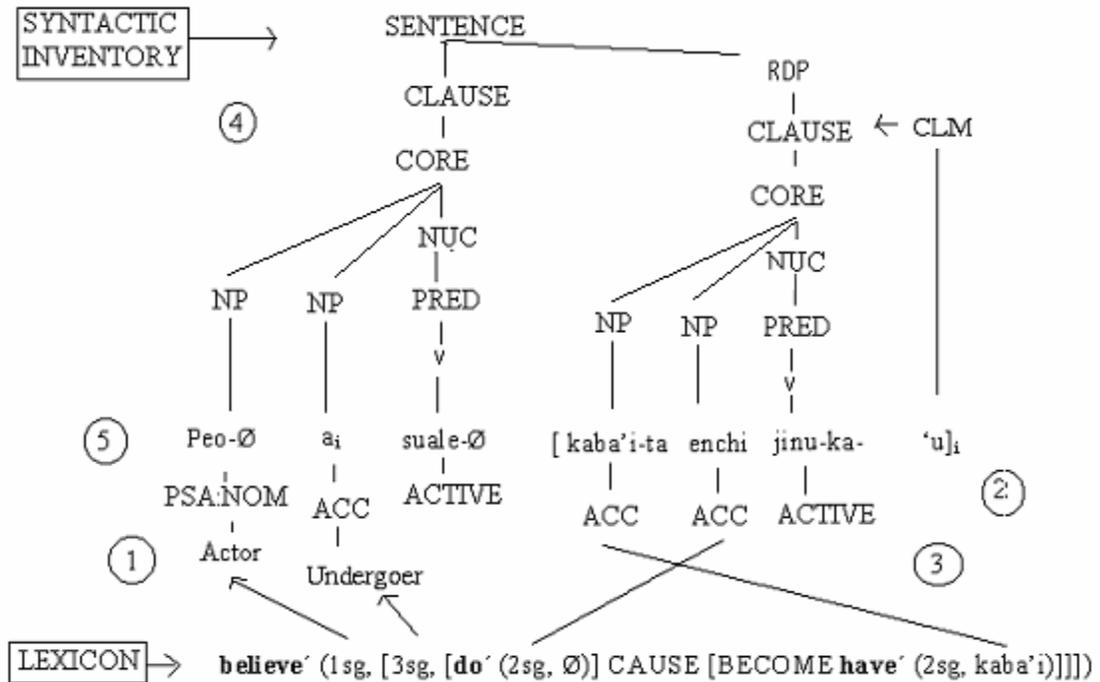


Figure 8.3: Semantics-to-syntax linking for sentential (daughter) subordination

There is one more specific characteristic that needs to be established for clausal subordination: the fact that the highest ranking argument of the linked verb can appear as a direct core argument of the matrix predicate. This device is observed for certain instances of direct perception, the mental verbs *suale* ‘trust in’, *ju’uneeya* ‘to know’ and *mammate* ‘realize’ when coding first-hand knowledge. In the construction in (8), the semantic content of the direct perception verb is coded by the complement clause in the right-detached position. But, instead of taking a resumptive pronoun as indirect perception predicates do, the matrix core copies out the embedded-PSA of the perceived event as a direct core argument. The occurrence of the PSA of the complement filling a syntactic slot on the main core specifies that the speaker acquired the knowledge at ‘first-hand’, rather than inferred or deduced from evidence. Each of the LSs in (8a’) links separately but the construction as a whole imposes a constraint on the linking. However,

since there is no pause between the matrix predicate and its complement clause, it appears in the post-core slot.

- (8) a. Goyo-Ø enchi<sub>i</sub> jikka-k [ enchi<sub>i</sub> kuta-ta chukta-ka-‘u]  
 Goyo-NOM 2SG:ACC hear-PRFV 3SG:ACC wood-ACC cut-PRFV-CLM  
 ‘Goyo heard you that you had cut the wood.’

a’. **hear**’ (Goyo, 2sg, [**do**’ (2sg, Ø) CAUSE [BECOME **cut**’ (kuta, 2sg)]])

Whereas cross-constructional and cross-linguistic generalizations are captured in terms of the general principles and constraints that constitute the linking algorithm in RRG, language-specific features of constructions are represented in constructional schemas. For the semantics-to-syntax linking, the constructional schemas supply the language specific and construction specific details which are required for the correct encoding of meaning in the morphosyntax. A first approximation to explain the occurrence of the highest ranking argument of the linked verb as the undergoer of matrix predicates is proposed in the constructional schema in Table 8.4.

Table 8.4 Constructional schema for clausal subordination and embedded-PSA copying

CONSTRUCTION: Clausal subordination
SYNTAX: Juncture: Clausal Nexus: Subordination Construction type: Syntactic-like [[CL [CORE [... Y <sub>i</sub> NUC] [CL [CORE [ X <sub>i</sub> ... NUC] CLM]]]] Unit template(s): 5d2 (PoCS) PSA: (3ac1) (for each clause) Linking: PSA of CORE 2 is copied out to the non-PSA slot in CORE 1
MORPHOLOGY: CLM: -‘u, -po
SEMANTICS: Direct perception, <i>suale</i> ‘believe, trust in’, <i>ju’uneeya</i> ‘know’, <i>mammate</i> ‘realize’ when coding first-hand knowledge.
PRAGMATICS: Illocutionary force: Unspecified Focus structure: Unspecified

**8.2.3 Linking in core junctures.** Neither nuclear nor clausal junctures have required serious revision of the linking algorithm and this is true also for the core

subordinate juncture-nexus types. An example of (daughter) subordination at the level of core was illustrated in (7a) above. The embedded LS ‘that you had bought a horse’ links internally independently of the matrix LS, but as a whole unit it is part of the linking of the matrix LS. The embedded LS carries clausal operators and hence it will be instantiated as a tensed clause linked to the core. Because there is a larger unit linked to a smaller unit, the linkage is asymmetrical. This asymmetrical core subordinate linkage is the preferred option for the mental predicate ‘*ea* ‘think’ when taking a complement marked by *-benasia*.

However, we have seen that the language presents a strong tendency to avoid asymmetrical linkage, and uses two devices to avoid it. There is a group of predicates that extrapose the complement clause to the post-core slot, reducing the valence of the matrix core by 1 (step 4b2). This is the case of jussive predicates, *bo’obicha* ‘hope (different-PSAs)’, *majae* ‘be afraid’, (*nuen*) ‘*ea* ‘think/feel like’, *junuen’ea* ‘wish, agree’, *june’an* ‘know’ and *etso* ‘deny, hide (same-PSAs)’, and indirect discourse predicates. In all these cases, the matrix core does not take a resumptive pronoun, the complement clause appears in the post-core slot (i.e., directly linked to the clausal node rather than the core node) and, when passivized, it is understood as an impersonal clause. When the complement is placed in the post-core slot, there is a symmetrical clausal subordination.

There is a second group of predicates that may choose between (asymmetrical) core subordination and (symmetrical) sentential subordination by placing the complement clause in the right-detached position and taking a resumptive pronoun. This is the case of indirect perception, mental verbs such as *suale* ‘trust in’, *ju’uneeya* ‘know it’, *kopte* ‘forget’, *wawaate* ‘remember’ and *etso* ‘deny, hide (different-PSAs)’. The crucial point

here is that the language shows a basic principle governing subordinate constructions: in order to avoid asymmetrical linkage, there is strong preference to place the complement clause outside the core, as a direct daughter of either the clause or the sentence node.

A second type of core subordination consists of nominalized complements. Direct perception and psych-action predicates expressing the notion of *dream* and *find*, take a core unit marked by *-m-ta*, when the PSA of the matrix core and the PSA of the linked verb are non-coreferential. The complement is both a semantic and a syntactic argument of the matrix core. Whether or not the complement appears embedded in the main clause or in the post-core slot, the linkage is symmetrical since there is a core unit linked to another core. The semantics-to-syntax linking for the subordinate clause *I dreamed of Peter marrying you* in (9) is in Figure 8.4. Notice that the first argument position of the **dream** is the experiencer ‘1sg’, and the second argument position is the content of the complement ‘Peter marrying you’. The highest ranking argument is the actor; it gets nominative case and hence functions as the active PSA. The complement unit as a whole is assigned accusative case, and is assigned a semantic macrorole.

(9) a. Nepo [ Peo-ta enchi kuna-ka-m-ta ] teenku-k.  
 1SG:NOM Peo-ACC 2SG:ACC marry-PERFV-NMLZ-ACC dream-PRFV  
 ‘I dreamed of Peter marrying you!’

b. **do** [1sg, [**dream** (1sg, [**do** (Peo, [**marry** (Peo, 2sg))])]]]



- c. Joan-Ø ye'e-ka [ Peo-ta ketunke kubai-ta pona-o]  
 Joan-NOM dance-PRFV Peo-ACC before drum-ACC play-CLM  
 'Juan danced before Pedro would play the drum.'

In RRG, the relation of temporal adverbial subordinate clause to the core it modifies is the same as that of a peripheral PP modifying a core. That is, in a clause like *Juan danced after the ceremony*, the relationship of the PP *after the ceremony* to the core *Juan dance* is the same as that of the subordinate clause *after Pedro played the drum* to the core it modifies. This is an example of asymmetrical ad-core subordination, because the subordinate clause modifies the matrix core, which occurs in the CORE periphery. Step 5d1a as presented in (6) handles this construction type.

Actually, temporal adverbial clauses in Yaqui overtly distinguish same-PSAs and different-PSAs by adding the suffix *-kai* to the former. The same-PSA versions of the temporally-related constructions given in (10) are illustrated below. The clause in (11a) expresses simultaneous events. The next two examples refer to sequential events.

- (11) a. [Unison-po estudiaroa-ka(i)] nim amigo-Ø muuku-k.  
 Unison-LOC learn-CLM 1SG:GEN friend-NOM die(SG)-PRFV  
 'When/while studying at the Unison, my friend died.'
- b. Joan-Ø ye'e-ka [ kubai-ta po-pon-su-kai ].  
 Joan-NOM dance-PRFV drum-ACC RED-play-FINISH-CLM  
 'Juan danced after playing the drum.'
- c. Joan-Ø ye'e-ka [ ketunke kubai-ta pona-kai ].  
 Joan-NOM dance-PRFV before drum-ACC play-CLM  
 'Juan danced before playing the drum.'

All these constructions show the following properties: (i) the PSA of the main clause is the same as the PSA of the linked unit; (ii) the linked unit lacks a syntactic argument, its PSA; (iii) the linked verb must be a bare form; and (iv) the linked unit must be marked by *-kai*. These constructions are very similar to the English clauses *Max brushed his*

*teeth after drinking a cup of coffee, Chris spoke to his broker before buying more stocks*, where the objects of the prepositions *after* and *before* are ‘subjectless’ gerunds, which are a type of ad-core subordination. We may extend this analysis and claim that the Yaqui constructions in (11) are instances of ad-core subordination. In contrast to the English examples, however, the argument sharing is obligatory in Yaqui, since the *-kai* clause cannot take a PSA. Three more examples are shown below. The clause in (12a) exemplifies the manner in which the motion event is carried out, whereas the clause in (12b) illustrates the means by which an action is carried out. The last construction is also an example of simultaneous actions, but here the matrix core is a verb of saying and the linked unit shows a core coordinate linkage.

- (12) a. Joan-Ø    yepsa-k        [ bwite-kai ]  
           Juan-NOM arrive-PRFV    run-CLM  
           ‘Juan arrived running.’
- b. [Tasa-ta    bwise-kai ] Aurelia-ta-u        ne        a        bwise-k.  
           cup-ACC    take-CLM    Aurelia-ACC-DIR    1SG:NOM    3SG:ACC    take-PRFV  
           ‘Taking the cup, I passed it to Aurelia.’
- c. Em        achai    enchi;    tejwa-k    [ enchi;    Ivan-ta    bekta-sae-kai ].  
           2SG:GEN father    2SG:ACC    order-PRFV    2SG:ACC Ivan-ACC    shave-ORDER-CLM  
           ‘Your father told you while ordering you to shave Ivan.’

In order to explain this obligatory shared argument, we need the theory of control. In a control construction, 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. The matrix core argument interpreted as being the same as the missing syntactic argument in the linked unit is the controller; the missing syntactic argument in the linked unit is the pivot. In a construction like *David tried to play the saxophone*, the controller is the ‘subject’ of the matrix core. In a clause like *Alfredo persuaded Dena to kiss him*,

the controller is the ‘object’ of the matrix core. Since ‘subject’ and ‘object’ have no theoretical status in RRG, this framework provides a semantically-based analysis for control constructions (Foley and Van Valin 1984). This theory applies to matrix verbs which are M(ajor role)-transitive; if the matrix verb is M-intransitive, then the single argument will be the controller by default.

(13) Theory of control

1. Causative and jussive verbs have undergoer control.
2. All other (M-)transitive verbs have actor control.

That is, the choice of the controller is tied to the semantics of the verb. In sentences involving causative and jussive verbs, the undergoer of the matrix core is the controller of the missing syntactic argument in the linked core. Observe the core coordinate types below. It is the undergoer of the matrix core *-sae* ‘order’ and *-’ii’aa* ‘want’ which is shared with the linked core, the core argument which functions as a semantic argument in the logical structure of each core. When these constructions are passivized, it is the undergoer of the matrix core, the cause, which functions as the passive-PSA.

- (14) a. Empo Ivan-ta ubba-ne-sae-k.  
 2SG:NOM Ivan-ACC bathe-EXPE-ORDER-PRFV  
 ‘You ordered Ivan to bathe later on’
- b. Aurelia-Ø kari-ta enchi tu’ute-’ii’aa-Ø.  
 Aurelia-NOM house-ACC 2SG:ACC clean-want-PRES  
 ‘Aurelia wants you to clean the house.’

The core co-subordinate clauses in (15) below show actor control. In (15a), *bo’obicha* ‘hope’ takes a linked verb marked by *-bae-kai*. In (15b), *teenku* ‘dream’ takes a linked verb marked by *-kai*. Note that (i) the linked unit is missing a syntactic argument, the highest ranked argument, which is the same as the matrix PSA; (ii) the linked unit depends upon the matrix core for TAM information; (iii) although a semantic argument,

the linked unit does not function as a syntactic argument of the matrix core; (iv) this abstract linkage construction avoids passivization.

- (15) a. 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. Lupe-Ø    teenku-k            [ Peo-ta    kuna-kai].  
 Lupe-NOM    dream-PRFV            Peo-ACC    marry-CLM  
 'Last night, Lupe dreamed of (herself) marrying Peter.'

The linked core in the constructions in (14) and (15) will always be 'subjectless', and this is the central fact about the theory of control that the linking system must accommodate. Because there is an obligatorily shared semantic argument in these constructions, one of the arguments in the embedded logical structure is not filled by lexical material but is co-indexed with the controller in the matrix logical structure:

- (16) Lexical representations for  
 a. Undergoer control in (14a):  
 [do' (2sg, [order' (2sg, Ivan<sub>i</sub>)])) CAUSE [do' (y<sub>i</sub>, [bathe' (y<sub>i</sub>)])]
- b. Actor control in (15a):  
 do' (Aurelia<sub>i</sub>, [hope' (Aurelia<sub>i</sub>, [eat' (y<sub>i</sub>, wakabaki)])]

The examples in (14) are undergoer control constructions because the undergoer of the matrix core, the second highest ranking argument, is the controller of the *y* argument in the linked core. The examples in (15) are actor control constructions since the actor of the matrix core must be interpreted as being the same as the actor, the *y* argument, in the linked unit. In order to capture the fact that there is a syntactic argument slot missing in the linked core, RRG places a universally-valid qualification to the syntactic template selection principle in (4) in the linking algorithm, namely, the occurrence of the core as the linked core in a non-subordinate core juncture reduces the number of core slots by 1.

(17) Syntactic template selection principle (preliminary version)

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 positions in the semantic representation of the core.

b. Universal qualification of the principle in (a)

The occurrence of a core as the linked core in a non-subordinate core juncture reduces the number of core slots by 1.

c. Language-specific qualifications of the principle in (a):

1. Passive voice reduces the number of core slot by 1.

2. The occurrence of a syntactic argument in the post-core slot reduces the number of core slots by 1.

The principle in (17b) does not specify which syntactic slot is missing, since that is a construction-specific feature. Thus, given the logical structures in (16) and the revised formulation on syntactic template selection in (17), the linking algorithm proposed so far can handle without modification the cases of core coordination involving jussive predicates, as well as core co-subordination involving psych-action predicates such as *bo'obicha* 'hope' and *teenku* 'dream'. Even though the *y* argument in the embedded logical structure in (16) is not directly linked to an expression in the syntax, it is co-indexed with *Ivan*, for the former, and with *Aurelia*, for the latter, which are linked to the syntax, thereby satisfying the completeness constraint. Figure 8.6 illustrates the semantics-to-syntax linking for the core cosubordinate clause *Aurelia hopes to cook the wakabaki* in (15a).

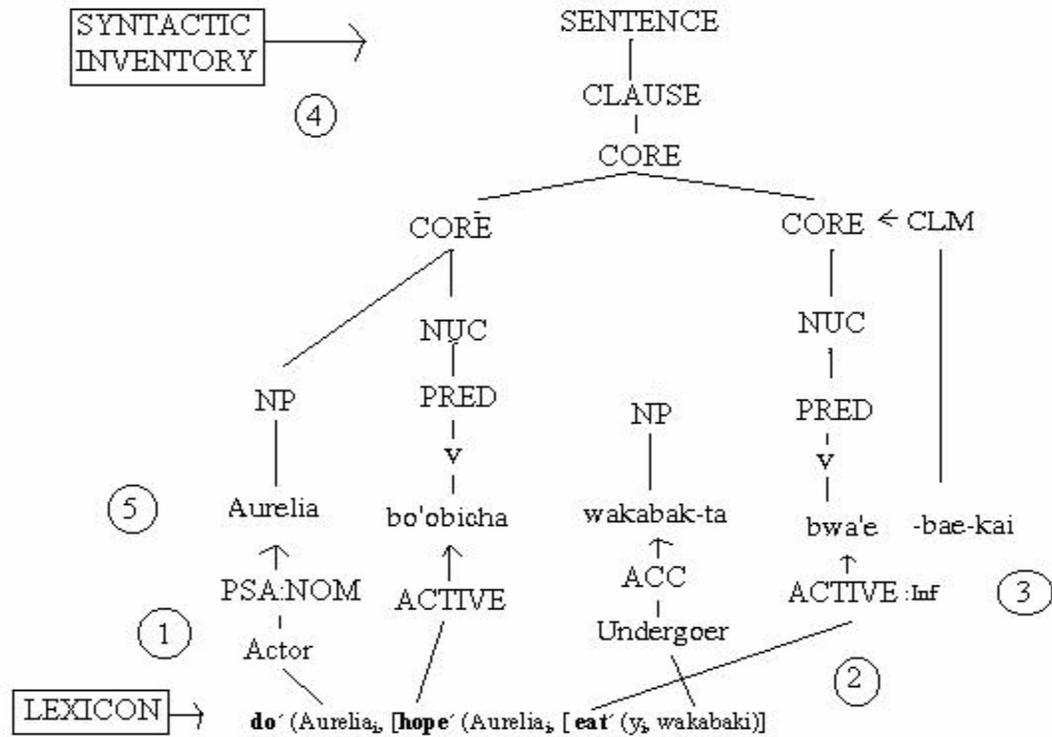


Figure 8.5: Semantics-to-syntax linking in Yaqui core co-subordinate control construction in (15a)

The temporally related constructions in (11) and (12) can also be handled with the theory of control. The *-kai* unit involves actor control, since the matrix actor is the controller of the missing syntactic argument in the linked core marked by *-kai*. Unlike core co-subordination in (15), the examples in (11) and (12) express the temporal setting of the event expressed by the core, and hence they are some sort of modifiers at the core level. Figure 8.6 illustrates the linking for the ad-core subordinate clause *Juan danced before playing the drum* in (11c).

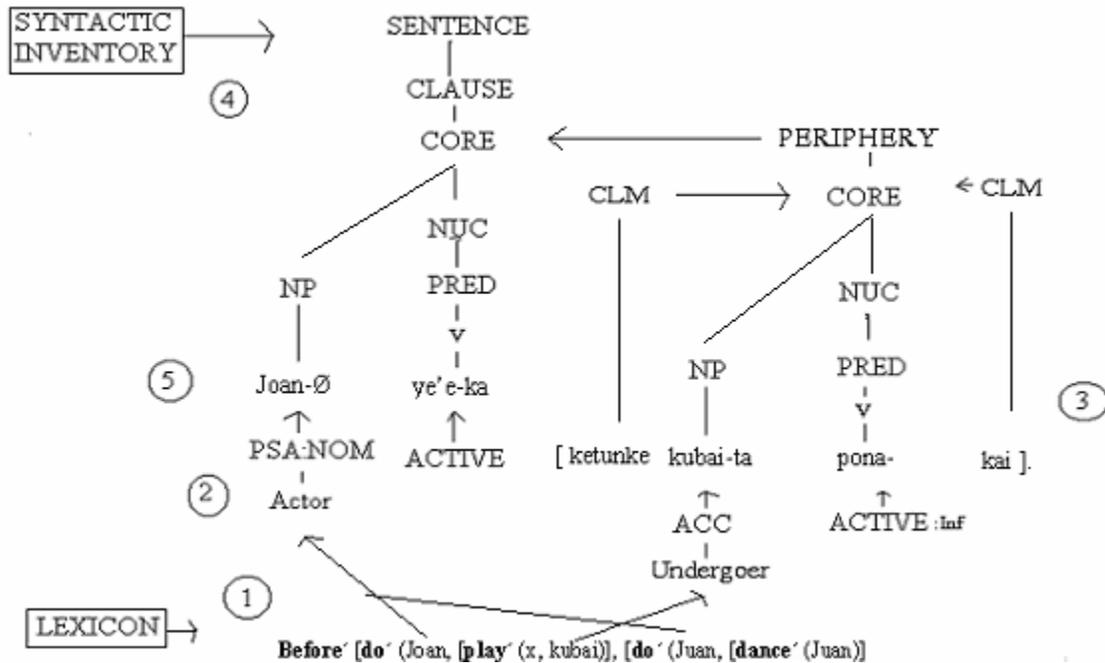


Figure 8.6: Semantics-to-syntax linking in Yaqui ad-core subordinate control construction in (11c)

Because undergoer and actor control relations are represented by different constructions, I would like to postulate two constructional schemas. Table 8.5 provides the constructional schema for undergoer control. Table 8.6 specifies the properties of both constructions type showing actor control, core co-subordination as well as ad-core subordination.

Table 8.5 Constructional schema for Yaqui undergoer control constructions

CONSTRUCTION: Yaqui obligatory undergoer control constructions
SYNTAX: Juncture: Core Nexus: Coordination Construction type: Morphological [CL [CORE ARG ARG [CORE [... NUC]] ...NUC ] Unit template(s): Core 1: 16a,c Core 2: 16a,b,c PSA: Core 1: Controller = Semantic controller following (13) Core 2: Pivot = invariable syntactic pivot Linking: Default
MORPHOLOGY: none
SEMANTICS: Causative and jussives
PRAGMATICS: Illocutionary force: Unspecified Focus structure: Unspecified

Table 8.6 Constructional schema for Yaqui non-subordinate actor control constructions

CONSTRUCTION: Yaqui obligatory control constructions
<p>SYNTAX:</p> <p>Juncture: Core</p> <p>Nexus: co-subordination <i>or</i> ad-core (peripheral) subordination</p> <p>Construction type: Syntactic-like</p> <p>[[CL [CORE ARG ARG [...NUC]] [CORE [... NUC] CLM] <i>or</i> [[CL [CORE ARG ARG [...NUC] ← (CLM) [CORE [... NUC] CLM]]</p> <p>Unit template(s): Core 1: 16a,c Core 2: 16a,b,c</p> <p>PSA: Core 1: Controller = Semantic controller following (13) Core 2: Pivot = invariable syntactic pivot</p> <p>Linking: default</p>
MORPHOLOGY: CLM: <i>-kai</i> ( <i>ketunke</i> )
SEMANTICS: Psych-action predicates <i>bo'obicha</i> 'hope', <i>teenku</i> 'dream' <i>or</i> Temporally-related events
<p>PRAGMATICS:</p> <p>Illocutionary force: Unspecified</p> <p>Focus structure: Unspecified</p>

There is one more syntactic construction that needs to be discussed in terms of linking properties, the raising or 'matrix-coding' construction. The clause in (18a) illustrates the direct perception verb *jikka* 'heard'. The clauses in (18b-c) show the mental predicates *-maachia* 'believe' and *-'ea* 'think', respectively. The clause in (18d) exemplifies the indirect quotation verbal form *-tia*. The first two examples are core co-subordination, since the linked verb cannot carry operator information; the last two are examples of core coordination.

- (18) a. Maria $\emptyset$  Ivan-ta kuba-ta pona-jikka-k.  
 Maria-NOM Ivan-ACC drum-ACC play-hear-PRFV  
 'Maria heard Ivan play the drum.'
- b. Ne Peo-ta kaba'i-ta jinu-maachia- $\emptyset$ .  
 1SG:NOM Peo-ACC horse-ACC buy-believe-PRES  
 'I believe Peter buy a horse.'
- c. Ne Peo-ta kaba'i-ta jinu-ka-t-'ea-n.  
 1SG:NOM Peo-ACC horse-ACC buy-PRFV-CLM-think-PASTC  
 'I thought Pedro bought a horse.'

- d. Ramón-Ø go'i-ta ian muk-ne-tia-Ø.  
 Ramón-NOM coyote-ACC today die-EXPE-SAY-PRES  
 'Ramón says that the coyote is going to die today.'

Similar to the English constructions *Sophia believes that Ruth cheated in the exam* vs. *Sophia believes Ruth to have cheated in the exam*, each of these constructions in Yaqui has an alternative form in which there is a complement clause marked by –*u* or –*po*. In both construction types, the core argument which is the 'subject' of embedded LS in the morphological construction functions as a direct core argument of the matrix core. This pattern was originally analyzed as a 'raising' construction in that the NP *Ruth* originated in the embedded clause was moved to the direct object position in the matrix clause (Rosenbaum 1967). These structures resemble the control construction observed for jussive verbs in (11), in the sense that it is the highest ranked argument of the embedded LS that functions as the passive-PSA. It means that, although the content complement is a semantic argument of the matrix core, it does not function as a syntactic argument. Nevertheless, there is a crucial difference between the two: in the logical representation for the clause 'Mary heard Ivan play the piano' in (19b), *Ivan* is not a semantic argument of *hear* but rather the actor of *play* only, because what Mary heard is 'Ivan play the piano'. That is, there is no change in the semantic role of the highest ranked argument in the embedded LS: it is the actor of the embedded core, it is not the undergoer of the matrix predicate.

- (19) a. **hear'** (x , [**do'**(y<sub>i</sub>, [**play'** (y<sub>i</sub>, z))])  
 b. **hear'** (Maria, [**do'**(Ivan, [**play'** (Ivan, kubai))])

As in the control constructions discussed above, there is a core argument position in the matrix core which cannot be filled by a semantic argument from the logical structure of the matrix predicate. The syntactic template selection principles as proposed in (17)

establish the relationship between the number of argument positions in the logical structure of the predicate and the number of core argument positions in the syntactic template of the core that is appropriate for it. In Foley and Van Valin (1984) it was noted that there is a systematic relation between the S-transitivity (i.e., syntactic valence) of a verb when it takes an NP or clausal syntactic argument and that when it functions as a complement-taking predicate in a core juncture; namely, its syntactic transitivity is reduced by one in core junctures. The following examples are from VV&LP (p. 569):

- (20) a. Three core arguments → two  
*Phil told Dana a story* [3] → *Phil told Dana to...* [2]  
*Kim promised Sandy a picture of Chris* [3] → *Kim promised Sandy to...* [2]
- b. Two core arguments → one  
*Eileen remembered her purse* [2] → *Eileen remembered to ...* [1]  
*Beckie wants a new Porsche* [2] → *Beckie wants to...* [1]

Accordingly, not only is the S-transitivity of the linked core reduced to 1 but that in the matrix core is as well. The amended the Universal qualification of the principle in (a) for the syntactic template selection proposed in (17) is below:

- (21) Syntactic template selection principle (revised formulation; VV&LP: 569)
- 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. Universal qualification of the principle in (a)  
The occurrence of a core as either the matrix or the linked core in a non-subordinate core juncture reduces the number of core slots by 1.
- c. Language-specific qualifications of the principle in (a):
1. Passive voice reduces the number of core slot by 1.
  2. The occurrence of a syntactic argument in the post-core slot reduces the number of core slots by 1.

We have seen examples where the occurrence of a complement unit in the post-core slot reduces the number of core slots by 1, e.g., (symmetrical) core subordination. The

fact that the syntactic valence of the matrix core is not reduced when taking a resumptive pronoun and placing the complement in the right-detached position, is not a violation of the principle in (21b) since it only applies at the core level. However, as VV&LP (p. 569) point out, the predicate *believe* does not reduce its syntactic valence, e.g. *Juan believed the story* [2] → *Juan believed Carlos to ...* [2].

The same seems to be true for the Yaqui complement-taking predicates coding direct perception, belief, thinking, and indirect quotation, when embodied by core co-subordination or core coordination. The fact that the highest ranked argument of the embedded LS (its PSA) serves also a core argument of the matrix core may be explained if the embedded-PSA is directly linked to the matrix core, as its syntactic core argument. The actual linking in this construction is the same as that in the other core coordinate linkages. Notice that the undergoer of the direct perception predicate is not the highest ranked argument of the embedded LS (*Ivan*).

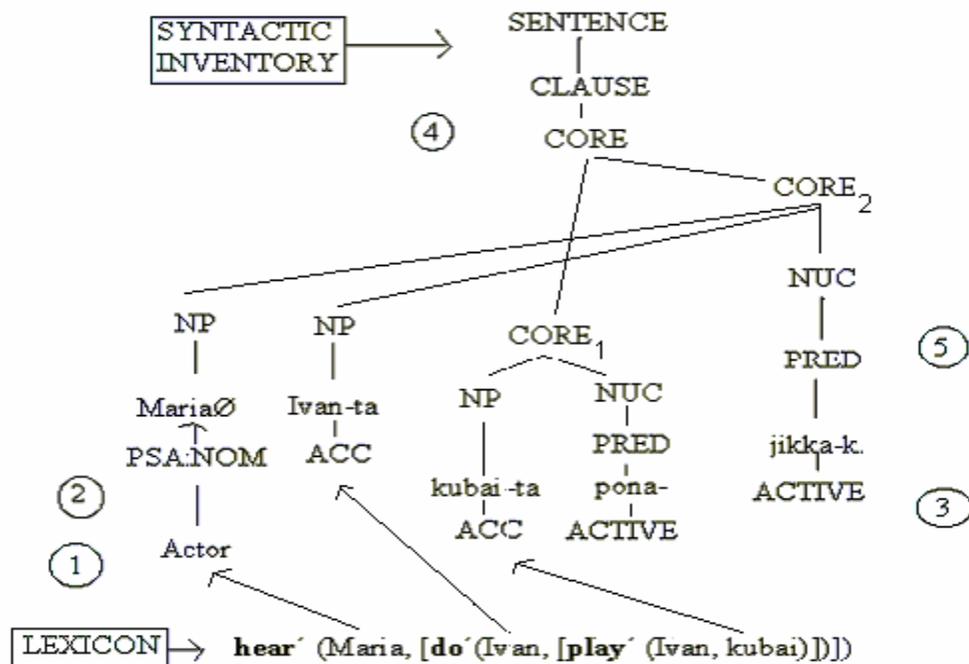


Figure 8.7: Linking from semantics to syntax in a Yaqui core co-subordinate 'matrix-coding as non-PSA' construction in (18a)

Therefore, the core junctures of direct perception and indirect quotation have the same general linking properties as the matrix-coding as non-PSA with mental verbs such as *-maachia* ‘believe’ and *-ea* ‘think’. The constructional schema for the Yaqui ‘matrix-coding as non-PSA’ construction is given in Table 8.7. It would be a violation of the principle in (20b) since the matrix core does not reduce the core slots by 1. As in control constructions, the syntactic pivot is in Core 2, and it is, following the AUH for Yaqui, the highest ranking core macrorole.

Table 8.7 Constructional schema for Yaqui ‘matrix-coding as non-PSA’ construction

<b>CONSTRUCTION:</b> Yaqui ‘matrix as non-PSA’ construction
<b>SYNTAX:</b> Juncture: Core Nexus: Coordination / Co-subordination Construction type: Morphological [CL [CORE ARG ARG [CORE [... NUC]] ...NUC] ] Unit template(s): Core 1: violates (20b) Core 2: Default PSA: Syntactic pivot of CORE 2 (3ac2) Linking: PSA from CORE 2 is directly linked to the CORE 1
<b>MORPHOLOGY:</b> none
<b>SEMANTICS:</b> direct perception, propositional attitude and indirect quotation
<b>PRAGMATICS:</b> Illocutionary force: Unspecified Focus structure: Unspecified

The last peculiarity of the semantics to syntax linking in complex constructions is to determine the domain of case assignment. The basic rules for case assignment in Yaqui are: (a) the highest-ranking core macrorole argument gets nominative case, and (b) the other direct core argument(s) get accusative case. In simple clauses, it means that case marking rules apply to direct syntactic arguments within the core or in the post-core slot. In core junctures, however, there is more than one core in a clause, and so the question arises, do the case marking rules apply to each individual core separately, or do they apply to all of the cores jointly within the clause? If it is the core, then the case

assignment rules would apply in each core independently in a complex sentence, whereas if it is the clause, then they would apply to all of the cores in each clause jointly but would apply independently in each clause. Languages vary with respect to the domain of case assignment: in some it is the clause, while in others it is the core (VV&LP: 577-8).

If the core were the domain for the application of the case marking rules in Yaqui, we would expect that, at least in non-subordination at the level of core, the highest ranking argument in the embedded LS would receive nominative case. This is not the case, however. Regardless of the nexus-juncture type, in all cases of complex sentences there is only one nominative NP: the highest ranking macrorole in the matrix core. Notice that in Yaqui the accusative case is assigned to direct core arguments, rather than to the other macrorole argument. This assignment means that, regardless of their macrorole status and/or its position within the logical structure, all direct core arguments of a clause will be marked as accusative, whereas non-direct core arguments will be marked by postpositions. This suggests that the domain of case marking rules for Yaqui is the clause.<sup>15</sup>

### **8.3 A functional-cognitive explanation for alternative constructions**

We have seen multiple instances where the syntactic-semantic correlation applies, i.e., the stronger the semantic bond between the two events, the more grammatical integration among the two units. We have also seen, however, that at the middle portion of the semantic hierarchy, the matrix predicates may select different juncture-nexus types without a significant change of meaning. Why does the language allow multiple syntactic manifestations for closely related meanings?

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<sup>15</sup> We would still need to establish in which circumstances the highest ranked argument of the embedded LS gets genitive marking when pronominal. This, however, will be part of further studies.

The first possible explanation for multiple instances of the same semantic notion is grammaticalization. Roughly speaking, grammaticalization is characterized as a primarily semantic, context-dependent process involving four interrelated mechanisms: desemanticization (also known as semantic bleaching), extension to new contexts, decategorialization, and loss in phonetic substance (cf. Traugott 1989). We have seen that not only causative and phase verbs have been grammaticalized into verbal suffixes, but the language in general shows a tendency to grammaticalize a matrix verb into a bound form. The first example of this process was observed when jussive predicates such as *sawe* ‘order’, *su’utoja* ‘allow’, *-’ii’aa* ‘want’ can be attached to the linked verb in a core coordinate combination; in this particular case, we may say that the bound forms function as a kind of deontic marker highlighting the speech acts of commanding, prohibiting and permitting. However, they do contribute an argument to the logical structure of the clause, the causer. Other examples of grammaticalized forms are the mental verbs *-maachi(a)*, *-’ean*, *-le*. Although their use as main verbs may be limited, they can be used as deontic and epistemic markers, as well as matrix predicates denoting the type of evidence that the subject has for what is expressed in the complement. The use of *-tea* and *-tia* when attached to the linked verb in an indirect quotation construction is another example.

We cannot deny the importance of grammaticalization. In fact, the study of diachronic changes would be an excellent topic for future studies on tense, aspect and modality in the language. With respect to complex constructions, it is true that meaning change triggers structural change on verbs to such an extent that they may shift from main verbs to affixes, and this can be used as a motivation for the form-function correlation in complementation. However, if we posit the tendency to produce

morphological rather than syntactic constructions as the result of a diachronic change, we may underestimate other factors that may be influencing the complement choice synchronically.

The other possible explanation is closely related to the attitude of the speaker (or experiencer) with respect to the content of the complement: the notion of subjectivity or speaker's relatedness.<sup>16</sup> In Langacker's terms (1985, 1990) *subjectivity* concerns the expression of self and the representation of a speaker's perspective or point of view; *subjectification* refers to the structures and strategies that languages evolve in the linguistic realization of subjectivity. The degree of subjectivity or objectivity encodes, broadly speaking, how involved is the speaker in the conceptualization of an expression's meaning. A construal relation is construed with maximally subjectivity when the speaker remains offstage and implicit, inhering in the very process of conception without being its target. It is construed with maximal objectivity when she is put onstage as an explicit focus of attention. A scale of subjectivity (Achard 2000) would predict that, in the maximally subjective relation, the speaker/conceptualizer is not involved as part of the expression's meaning; in a more objective relation, she is part of the expressions' meaning, but not profiled; in the maximally objective relation, it is profiled object of conceptualization.

Since the speaker represents the point of view from which their respective conceptualizations are structured, these construal relations can be thought of as two axes of a viewing arrangement, along which different viewing configurations will be possible:

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<sup>16</sup> The role of the speakers has been explored before. In her study of the semantics of matrix-coding constructions, Borkin (1984) argues that the core coordinate pattern implies that the actor of the matrix verb has more direct knowledge of or more direct contact with the referent of the matrix code NP than in the alternative subordinate pattern, and this parallels the semantic contrast between the two constructions with perception verbs (VV&LP 571).

the relation between the speaker and the sentence defines the subjective axis, because it contains the main conceptualizing subject; the relation existing between the main subject and the complement defines the objective axis, because it occurs as part of the objective scene (the speaker's conceptualization)'. Since the subjective/objective relation is a matter of degree, we may consider the following hierarchy:

(22) Speaker's construal of the situation:

Highest subjectivity > less subjectivity /less objectivity > highest objectivity

A particular entity within the conceptualization of a linguistic expression is construed objectively when the speaker/conceptualizer conceives of it with a high degree of awareness and subjectively when with a low degree of awareness. In other words, the speaker's construal of the situation involves increase in coding of her attitude, whether of believe, assessment of the truth, or personal commitment to the assertion. For instance, in expressions encoding direct causation, movement, direct perception and certain modals (i.e., know how to, be able), the sentence is conceptualized from the point of view of the speaker. The matrix subject does not act as a conceptualizer with respect to the complement scene, but she is directly involved in the action/event. On the other hand, verbs like *believe* and *think* describe the mental stance/conceptualization of the matrix subject with respect to the complement scene. The speaker reports that conceptualization which she might not even share. Interestingly, deontic vs. epistemic modality reflects the distinction between subjective (e.g., based in the speaker you *must* do it) and objective or less subjective (e.g. he *must* be at home at 6 o'clock). Strongly subjective epistemic may also be considered some sort of evidential in function.

There is one final point I would like to address. As VV&LP point out, the relationship between the syntactic and semantic relations in clause linkage is very

complex and, unfortunately, the semantic side has been much less investigated than the syntactic side. It is quite obvious that in direct causation, there is a close semantic correlation between the causing act and the resulting event; it is also clear that in attributing a statement to somebody, as in the case of direct discourse, there is less semantic cohesion between the utterance and the content it refers to. At the middle portion of the semantic hierarchy, however, there are intermediate cases of semantic integration. In order to better understand the semantic integration of the events, Van Valin (2005) proposes decomposing the semantic hierarchy into a set of interacting sub-hierarchies including but not limited to temporal, causal, participant's mental disposition, and necessarily shared participant.

In some sense, the temporal hierarchy is the most fundamental and it goes on cycles: actions treated as phases of a single event are, by definition, going to be closer to each other semantically than actions treated as distinct events. Thus, direct causation and phase predicates are treated as phases of a single event; whereas verbal causation (jussives) necessarily involves sequential events; direct perception entails simultaneity whereas indirect perception may involve sequentiality. The events may be simultaneous in the expression of own desires; they are sequential in purposes, and they may or not temporally overlap in propositional attitude. Cognition predicates have no entailment about the tense value of the dependent event, i.e. unspecified. In Yaqui, when the two units correspond to phases of a single event, the TAM information coded in the matrix predicate has scope over the two events (i.e., the linked verb must be unmarked). For simultaneous events, the TAM information in the matrix unit also has scope over the two units but, for certain juncture-nexus types, the linked unit may be also marked by the

same TAM operators. For sequential or unspecified events, the matrix unit and the linked unit for most juncture-nexus types may take their own TAM marking. The causal hierarchy is also fundamental to distinguish direct and indirect causal relations. The necessarily shared participant is also related to the semantic properties of the predicates. In phasal relations, the entity finding itself in a certain phase of an event is the same as that bringing about this event. Causative predicates entail that the entity bringing about the caused event is the same one as the one that is affected by the causing event. Whereas desiderative and volitional predicates entail that the matrix and dependent events share a participant (i.e., the experiencer), other psych-action predicates may but not need to share such a participant. Predicates such as *dream*, *hope*, *remember*, and *forget*, may or may not share an argument and, at least in Yaqui, argument sharing determines the complement-type for this predicate group. Predicates such as perception, propositional attitude, knowledge and discourse have no entailment about the participants of the linked unit. In Yaqui, all predicates at the top end of the semantic hierarchy must share a semantic argument, actor or undergoer, such as there must be a missing argument in the construction; predicates at the middle and lower portions may have coreferential arguments, but each of the units must code their own set of core arguments.

Compared to the other sub-hierarchies, the participant's mental disposition hierarchy is the most complex and heterogeneous. As defined by Van Valin (2005), it denotes the experiencer's intention to be involved in a state of affairs, perception of a state of affairs, and different stages of cognition. In (23a) below, the first value works for verbal and non-verbal causation, phases, and certain psych-action predicates coding volition and desire (i.e., deontic modality). The second value mainly encodes perception

of an event through the sense. The third and fourth value reflect different degrees of epistemic value, (e.g., non-presupposed vs. presupposed, non-factive vs. factive, irrealis vs. realis).

Since this particular hierarchy closely correlates with the semantic features of the predicates expressing the main state of affairs, it seems that this hierarchy reflects some sort of inherent epistemic scale in the language, in that the values refer of somebody's commitment towards the truth of some proposition being expressed. If this is so, and closely related to the Speaker's construal of the situation hierarchy proposed above, we may interpret this hierarchy as a cognitive scale involving different aspects including, but not limited to (i) intended event on the part of the speaker, (ii) experiences generated in the speaker's mind (e.g., internal/mental perceived phenomena vs. external/mental phenomena), and (iii) the speaker's measure of subjectivity (e.g., judgment, reasoning, report). A first attempt of a more homogenous participant's mental disposition hierarchy is presented in (23b), where the values are organized in terms of the experience with the content of the state of affairs generated in the main subject's mind.

- (23) a. Participant's mental disposition (Van Valin 2005)  
Intention > perception > belief > knowledge
- b. Participant's mental disposition (revised version)  
Intention > internal/direct experience > mental experience: judgment >  
mental experience: reasoning > non-mental experience: report

Whereas the first value "intention" conveys the participant's own conceptualization of preferences, desires, or emotions coded in the complement, the rest encodes different kinds of mental experiences on the part of the participant (i.e., matrix subject). The second value "internal/direct experience" indicates the state of affairs was not originally generated in the participant's mind (as it is for intentions and desires), but it reflects a

concept formed in her mind by internal/physical/direct contact with another entity and/or event. For instance, perceiving the occurrence of some state of affairs implies both perceiving the whole event and perceiving the individual entities bringing it about it. This unmediated perceived phenomenon is not restricted to direct perception predicates, but it may also encode certain propositional attitude predicates such as *consider*, *remember*, *forget* when calling something up in the mind of the experiencer and the nature of this something refers to her intention or disposition to act, e.g., *he remembered to vote against the president*. The third value encodes both a concept formed in the participant's mind and some sort of degree of subjectivity about that concept: judgment about the propositions referring to the state of affairs, with may or not involve direct experience. Some propositional attitude predicates (*may*, *be certain*, *be possible*) express the evaluation directly; others (*believe*, *think*, *doubt*) convey the evaluation indirectly by expressing the attitude of an experiencer toward the truth of the propositional content. Compared to "intention" and "internal/direct experience", the evaluation expressed by propositional attitude predicates may be more or less subjective (i.e. or less objective), i.e., it originates from some source. As a result, the propositional content of these predicates is never presented either as positively true or as positively false. All that the propositional attitude predicate expresses is that somebody is more or less strongly committed to the likelihood of some propositional content being true and some state of affairs to being realized (Cristofaro 2003: 107). No objective indication is given about whether or not the propositional content is actually true or the state of affairs is actually realized.

The fourth value “mental experience: reasoning” conveys a state of knowledge or process of acquisition of knowledge about a propositional content on the part of an experiencer. Predicates such as *know*, *realize*, *understand*, mostly describe a concept formed in the participant’s mind as a result of a reasoning process of the content of the proposition; they do not imply physically perceived phenomena nor uncertainty, but rather knowledge of a state of affair. Finally, the fifth value “non-mental experience: report” does not entail mental experience or epistemic commitment at all, but the report of the propositional content of somebody’s utterance.

The essential idea is that the semantic cohesion between units expressed in the Semantic Relation Hierarchy follows the interaction of a number of factors, each of which is expressed in these hierarchies. The highest values on the semantic sub-hierarchies will reflect closer semantic relations between the events, whereas the lowest values on all hierarchies will reflect looser semantic integration.

#### **8.4. Summary**

This chapter summarized the semantic and morpho-syntactic properties of Yaqui complex constructions. Based on the data analyzed in this study, and regardless of their formal structures, the language uses seven juncture-nexus types to express a wide range of semantic notions. The semantics to syntax linking algorithm for each of these abstract linkage combination was also established. Furthermore, some thoughts regarding the semantic integration of the events were also laid out. Both, the speaker’s construal of the situation and the revised participant’s mental disposition hierarchies as proposed here are only the first attempt to provide a better understanding of the semantic integration between the events involved in complex constructions. Although both sub-hierarchies

are rather than speculative at this point, I believe this is one of the interesting possibilities which merit some serious investigations in order to account for the syntax-semantic interrelation in complex constructions in general, and the occurrence of alternative constructions, in particular. However, in order to gain a better understanding of the functions of the language, it would be necessary to analyze the occurrence of Yaqui complex constructions from texts and conversation.

## Chapter 9

### CONCLUDING REMARKS

This dissertation has examined the semantic and syntactic representations of complex sentences in Yaqui within the framework of Role and Reference Grammar (Van Valin 1993, 2005; Van Valin & LaPolla 1997). It has asked three basic questions: (i) What are the units involved in complex sentences and what syntactic relations hold between them?, (ii) Does Yaqui follow and support RRG's general assumptions as a theory of universal grammar?, and (iii) Can RRG's theoretical assumptions elucidate Yaqui morpho-syntactic manifestations?

The first section is devoted to the description of the morpho-syntactic properties involved in simple clauses. Chapter 3 established the diagnostic tests for verb classification and demonstrated that this language fully follows RRG's system of aspectual verb classification. Chapter 4 analyzed simple clauses involving one, two and three place verbs in terms of syntactic transitivity and semantic macroroles. The discussions in this chapter provided new insights about the treatment of double object constructions in the language. It was shown that Yaqui supports the postulation of two macroroles but it requires a revision to the actor-undergoer hierarchy in order to predict that, when there is more than one accusative argument in a derived construction, it is the second highest ranking argument which is selected as the undergoer. The linking algorithms for simple clauses, including case marking and postpositional assignment rules, were also provided.

The second section investigated the syntactic-semantic correlation in complex sentences. Chapter 5 examined the syntactic realization of direct and verbal causation.

Chapter 6 analyzed phase, psych-action and purposive clauses. Chapter 7 laid out direct and indirect perception, propositional attitude, cognition, and discourse. In response to the first question, the discussions in these chapters have revealed that Yaqui complex sentences are represented by, at least, seven juncture-nexus types encoding different semantic notions: nuclear co-subordination, core co-subordination, core subordination (daughter and peripheral), core coordination, clausal subordination (daughter and peripheral), clause coordination, and sentential subordination.

Among the defining properties to establish the degree of semantic and syntactic tightness among the matrix predicate and its complement, we found the following: the use of certain complementizers, operator dependency and temporal adverbs, the position and the syntactic status of the complement, and coreferential vs. argument sharing. The idea is that, the more arguments and operators are shared between the two units, the more restricted the use of complementizers is, and the tighter the predicate-complement construction will be.

*The use of complementizers.* At the clause level, the complement is marked by *-po* or *-‘u*. At the core level, the complement may be marked by *-m*, *-t*, *-kai*, or zero. At the nuclear level, there are no complementizers. That is, a construction without complementizers is tighter than a construction marked by *-m*, *-t*, or *-kai*, which is tighter than a construction marked by *-‘u* or *po*.

*Operator dependency.* As typical in the family, Yaqui shows little indication of pure tense suffixes, except for the past continuative. 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. 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*. Furthermore, although the operator information on the linked verb is mainly determined by the semantics of the matrix predicate, there are certain generalizations across the complement types. Accordingly, those constructions in which the linked verb may be fully marked for tense and negation are less tight than those constructions in which the verb is marked only by aspectual suffixes, which are less tight than constructions taking bare forms.

*Position of the complement.* The position of the complement with respect to the main clause is another important property. First of all, it was demonstrated that the so called free word order in Yaqui is much less free in complex sentences. Few predicates take an embedded unit. In fact, the language avoids embedding, especially when there is a larger unit linked to a smaller unit. In order to solve the asymmetrical linkage problem, the complement tends to be placed in the post-core slot or the right-detached position. The preferred position for complement clauses is outside the clause, directly linked to the sentence node. In this sense, Yaqui would be atypical, since, although it is a verb-final language, the unmarked position for complements is to the right, rather than to the left (Dryer 1992). That is, those constructions involving embedded clauses are tighter than those constructions extraposing the complement unit.

*Complement as a core argument.* This property only applies for nominalized and syntactic-like complement types. Those constructions in which the complement is not a syntactic argument are less tight than those constructions in which the complement serves as a syntactic argument. Embedded complements function as syntactic argument of the matrix predicate (i.e., the matrix core cannot take any other core argument), whereas

complements extraposed to the right do not function as syntactic arguments, since there is another accusative argument in the matrix core filling this syntactic function. Regarding morphological structures, all show a syntax-semantic mismatch, since the linked unit is a semantic but not a syntactic argument of the matrix predicate.

*Coreferential vs. argument sharing.* Argument sharing is a property of nuclear and core juncture. In a co-subordinate nexus, the obligatorily shared argument in Yaqui is the actor. Subordination, in contrast, never shows argument sharing in Yaqui, but coreferential NPs. That is, those constructions in which there are two NPs that may be coreferential are less tight than constructions in which there is a missing syntactic argument, such that the two units share that argument. All morphological structures share either a semantic argument or a syntactic argument, so they are significantly tighter than nominalized and syntactic-like complements.

Chapter 8 first recapitulated the juncture-nexus type found in the language, and then laid out the semantics to syntax linking algorithm for complex sentences. It demonstrated that there are some instances of syntax-semantic mismatch. On the one hand, certain matrix predicates are attached to the linked verb in a morphological structure, such as the dependent state of affairs code is a semantic but not a syntactic argument of the matrix core. On the other hand, the fact that the complement unit is placed in the right-detached position means that, although a semantic argument, it is not a syntactic argument of the matrix core. It also discussed the particular cases of ‘raising’ and control observed in morphological structures. Raising is understood as a phenomenon in which the highest ranked argument of the embedded LS (its PSA) serves as a syntactic argument of the matrix core, but not as a semantic argument. Similarly, control constructions can be

described as a phenomenon where the semantic argument of the non-matrix predicate must be interpreted to be the same as one of the arguments of the matrix predicate. Causative and jussive predicates showed undergoer control, whereas some psych-action, propositional attitude and, most interestingly, simultaneous and sequential events may show actor control.

In response to the second question, the establishment of juncture-nexus types has also revealed that the morpho-syntactic and semantic relations expressed by the complex sentences in Yaqui mostly conform to the principle of the Interclausal Relation Hierarchy proposed in RRG. The language provides good evidence for the primary principle governing the syntactic and semantic interaction. The closer semantic relations are embodied by stronger syntactic linkages. The language presents, however, a marked shift from syntactic to morphological structure as we go down the hierarchy, where the looser the semantic relation, the more marked the morphological construction should be. An initial attempt to explain this marked shift as well as the selection of alternative constructions for closely related meanings was provided at the end of chapter 8.

In response to the third question, the theoretical principles of Role and Reference Grammar allowed us to explore the semantic and syntactic interface of complex sentences in Yaqui. The theory of nexus and juncture allowed us to elucidate the syntactic relations between the units involved. The semantic relations arranged according to the relative ‘closeness’ of the events permitted us to better understand the relation of each predicate with its complement. However, it was the formal interaction of the semantic and syntactic representations of the sentence that enabled us to understand the intriguing manifestations of complex sentences in the language.

## REFERENCES

- Adams, Larin K. 1999. Complex events and the semantics of *-ing* sentential complements. Ph. D. diss., Northwestern University.
- Achard, Michel. 2000. Construal and complementation in French. In *Complementation*, edited by Kaoru Horie. Amsterdam: John Benjamins, 91-120.
- Aissen, Judith. 2003. Differential Object Marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21, 435-483.
- Akmajian, Adrian. 1977. The complement structure of perception verbs in an autonomous syntax framework. In *Formal Syntax*, edited by P. W. Culicover, T. Wason and A. Akmajian. New York: Academic press, 427-460.
- Bach, Emmond and Partee, Barbara. 1980. Anaphora and semantic structure. Papers from the Parasession on Pronouns and Anaphora, edited by J. Kreiman and A. Ojeda. Chicago: Chicago Linguistic Society, 1-28.
- Bickel, Balthasar. 2003. Clause linkage typology. Paper presented at the International Role and Reference Grammar Conference, in São Jose do Rio Preto, Brazil.
- 2002. Belhare. In *The Sino-Tibetan Languages*, edited by G. Thurgood and Randy J. LaPolla. London: Routledge, 546-570.
- 1993. Belhare subordination and the theory of topic. In *Studies in Clause Linkage*, edited by K. Ebert. Arbeiten des Seminars für Allgemeine Sprachwissenschaft, no. 12: 23-55. Zürich: University of Zürich.
- Bolinger, Dwight. 1968. Entailment and the meaning of structures. *Glossa* 2.2, 119-127.
- Borgonovo, Claudia. 1996. Gerunds and perception verbs. *Langues et Linguistique* 22, 1-19.
- Borkin, Ann. 1984. *Problems in form and function*. Norwood, NJ : Ablex.
- Burgess, D. 1984. Western Tarahumara. In *Studies in Uto-Aztecan Grammar. Southern Uto-Aztecan Grammatical Sketches* 4, edited by R. Langacker. SIL and UTA.
- Casad, Eugene. 1984. Cora. In *Studies in Uto-Aztecan Grammar. Southern Uto-Aztecan Grammatical Sketches* 4, edited by R. Langacker. SIL and UTA.
- Chung, Sandra and Alan Timberlake. 1985. Tense, aspect, and mood. In *Language typology and syntactic description: Grammatical categories and the lexicon* 3, edited by T. Shopen. Cambridge: Cambridge University Press, 202-258.

- Coseriu, E. 1976 *Das romanische Verbalsystem*, Tübingen, Gunter Narr.
- Corbett, Greville. 1998. Morphology and agreement. In *The Handbook of Morphology*, edited by A. Spencer and A. Zwicky. Oxford: Blackwell, 191-205.
- Coulmas, Florian. 1986. *Direct and Indirect Speech*. Berlin; New York; Amsterdam: Mouton de Gruyter.
- Comrie, Bernard. 1989. *Language Universals and Linguistics Typology*, 2<sup>nd</sup>. Ed. Chicago: University of Chicago Press.
- 1985a. *Tense*. New York: Cambridge University Press.
- 1985b. Causative verb formation and other verb-deriving morphology. In *Language typology and syntactic description: Grammatical categories and the lexicon 3*, edited by T. Shopen. Cambridge: Cambridge University Press, 309-398.
- 1982. Grammatical relations in Huichol. Syntactic and Semantics. In *Studies in Transitivity*, edited by P. Hopper and S. Thompson. New York: Academic Press, 95-115.
- 1976. *Aspect*. New York: Cambridge University Press.
- Cristofaro, Sonia. 2003. Subordination. *Studies in Typology and Linguistic Theory*. Oxford-New York: Oxford University Press.
- Cumrine, Lynne S. 1961. The phonology of Arizona Yaqui, with texts. *Anthropological papers of the University of Arizona 5*. Tucson: The University of Arizona Press.
- Cummins, S. 2000. The unaccusative hypothesis and the impersonal construction in French. *Canadian Journal of Linguistics* 45 (3/4), 225-251.
- Dedrick John. M. and Eugene H. Casad. 1999. *Sonora Yaqui language structure*. The University of Arizona Press.
- Dik, Simon, C. and Kees Hengeveld. 1991. The hierarchical structure of the clause and the typology of perception-verb complements. *Linguistics* 29, 231-259.
- Dixon, R. M. W. 1995. Complement clauses and complement strategies. In *Meaning and Grammar*, edited by F.R. Palmer. Cambridge: Cambridge University Press, 174-220.
- 1991. *A new approach to English grammar, on semantic principles*. Oxford: Clarendon Press.

- 1984. The semantic basis of syntactic properties. Proceedings of the 10<sup>th</sup> Annual Meeting of the Berkeley Linguistic Society, Berkeley: University of California, 583-95.
- Dixon, R. M. W. and Alexandra Y. Aikhenvald. 2002. *Changing valency: case studies in transitivity*. New York: Cambridge University Press.
- Dowty, David. 1979. Word meaning and Montague Grammar. Dordrecht: Reidel.
- Durie, Mark. 1986. The grammaticization of number as a verbal category. Proceedings of the 12<sup>th</sup> Annual Meeting of the Berkeley Linguistic Society, Berkeley: University of California, 355-370.
- Dryer, Matthew. 1992. The Greenbergian word order correlations. *Language* 68: 81-138.
- 1986. Primary objects, secondary objects, and antitativity. *Language* 62, 808-845.
- Escalante, Fernando. 1990. *Voice and Argument Structure in Yaqui*. Ph. D. diss., The University of Arizona.
- 1990. Setting the record straight on Yaqui passives. *International Journal of American Linguistics*: 56, 289-292.
- 1985. A preliminary view of the structure of Yaqui. M.A thesis, The University of Arizona.
- 1984. Mood and modes in Yaqui. *Coyote Papers: working papers in Linguistics* 5, edited by Stuart Davis. Tucson: The University of Arizona Press.
- 1983. Yes/No questions in the Yaqui Indian language. *Coyote Papers: working papers in Linguistics* 4, edited by E. Martin-Callejo-Manandise. Tucson: The University of Arizona Press.
- Estrada, Zarina. 2003. Cambio de valencia: morfología derivativa en construcciones incoativas, aplicativas y causativas en pima bajo. Paper presented at I Seminario de voz. México: Universidad de Sonora.
- 1998. Aspectos lingüísticos del Yaqui. In *Jiak nikpo e'tejoim, pláticas en Yaqui*, edited by Silva Encinas, Alvarez Romero, Buitimea Valenzuela. México: Universidad de Sonora.
- Estrada, Zarina et al. 2003. Diccionario Yaqui-Español y textos. Obra de preservación lingüística. México: Plaza y Valdés.
- Felix, Rolando. 2000. *Las relaciones gramaticales en yaqui: un análisis en el marco de la Gramática del Rol y Referencia*. M.A. thesis, University of Sonora.

- Foley, W. and R. D. Van Valin. 1984. *Functional syntax and universal grammar*. Cambridge: Cambridge University Press.
- Frajzyngier, Zygmunt. 1991. The de dicto domain in language. In *Approaches to Grammaticalization 1*, edited by E. Traugott and B. Heine. Amsterdam: John Benjamins, 219-251.
- 1985. Ergativity, number, and agreement. Proceedings of the 11<sup>th</sup> Annual Meeting of the Berkeley Linguistic Society, Berkeley: University of California, 96-106.
- Frajzyngier, Zygmunt and Robert Jasperson. 1991. That-clauses and other complements. *Lingua* 83: 133-153.
- Freed, A. F. 1979. *The semantics of English aspectual complementation*, Dordrecht, D. Reidel.
- Givón, Talmy. 2001. *Syntax. An introduction*. Amsterdam: John Benjamins.
- 1993. *English Grammar: a functional-based introduction*. Amsterdam: John Benjamins.
- 1980. The binding hierarchy and the typology of complements. In *Studies in Language* 4 (3), 333-377.
- Goddard, Cliff. 2003. Thinking across languages and cultures: Six dimensions of variation. *Cognitive Linguistics* 14 (2/3). Walter de Gruyter, 109-140.
- Goddard, Cliff and Sussana Karlsson. 2003. Re-thinking THINK: Contrastive semantics of Swedish and English. *Proceedings of the 2003 Conference of the Australian Linguistic Society*.
- Guasti, Ma. Teresa. 1989. Romance infinitive complements of perception verbs. *MIT Working papers in Linguistics* 11, 31-45.
- Guerrero, Lilián. 2004. ¿Intransitividad dividida en Yaqui?. *Memorias del VII Encuentro Internacional de Lingüística en el Noroeste*. México: Universidad de Sonora.
- 2004. Complement types of perception verbs in Yaqui. Paper presented at the International Conference on Role and Reference Grammar, in Dublin, Ireland. Available for downloading: <http://linguistics.buffalo.edu/research/rrg.html>
- 2004. Complement-taking predicates in Yaqui. Paper presented at the International Conference Syntax of the World's Languages. University of Leipzig and Max Planck Institute for Evolutionary Anthropology. Leipzig, Germany. Available for downloading: <http://email.eva.mpg.de/%7Ecschmidt/SWL1/participants.html>

- 2003a. Procesos de transitividad y la noción de causa en yaqui. Paper presented at *I seminario sobre voz*. México: Universidad de Sonora.
- 2003b. Verb agreement in the Uto-Aztecan family: the case of Yaqui. Paper presented at International Conference on Role and Reference Grammar, in São Jose do Rio Preto, Brazil.
- 2002a. Macrorole assignment in three-place predicates in Yaqui, *Proceedings from the Niagara Linguistic Society*, edited by T. McClive and T. McDaniels. Buffalo: University at Buffalo, 1-17.
- 2002b. Complex constructions and macrorole assignment in Yaqui. Paper presented at the International Conference on Role and Reference Grammar in Logroño, Spain.
- 2002d. Macroroles and double object constructions in Yaqui. Unpublished ms. University at Buffalo.
- 2001. La noción de causatividad desde dos perspectivas lingüísticas diferentes. In *Convergencias Hispánicas*, edited by E. Scarlett and H. B. Wescott. Newark: Juan de la Cuesta, 273-283.
- 2000. Construcciones causativas del Yaqui desde la Gramática del Rol y Referencia. In *Memorias del V Encuentro Internacional de Lingüística en el Noroeste*. México: Universidad de Sonora, 147-172.
- 1999a. Cláusulas complejas de la lengua yaqui. In *Avances y balances de lenguas yutoaztecas*, homenaje a Wick R. Miller, edited by J.L. Moctezuma Zimarrón and J. H. Hill. México: CONACULTA-INAH.
- Guerrero, Lilián and Robert D. Van Valin, Jr. 2004. Yaqui and the analysis of primary object languages. *International Journal of American Linguistics*. Chicago: The University of Chicago Press, 290-319.
- Haiman, John. 1985. *Natural Syntax: Iconicity and Erosion*. Cambridge: Cambridge University Press.
- Hale, K., L. Jeanne, and P. Pranka. 1991. On suppletion, selection, and agreement. In *Interdisciplinary approaches to languages*, edited by C. Georgopoulos and R. Ishihara. Kluwer Academic Publishers, 225-270.
- Haspelmath, Martin. 1993. More on the typology of inchoative/causative verb alternations. In *Causatives and transitivity*, edited by B. Comrie and M. Polinsky. *Studies in Language Companion* 23. Amsterdam: John Benjamins, 87-120.
- Holisky, Dee A. 1987. The case of the intransitive subject in Tsova-Tush (Batsbi). *Lingua*, 71 (1-4), 103-132.

- Hopper, Joan B. 1975. On assertive predicates. *Syntax and Semantics* 4, edited by J. Kimball. New York: Academic Press, 91-124.
- Horie, Kaoru. 2000. *Complementation*. Amsterdam: John Benjamins.
- 1990. Complementation in Moroccan Arabic and the cognitive notion of directness /indirectness. *Sophia Linguistica* 28: 37-45.
- 1985. Lexico-syntactic analysis of verbs of cognition, conception and perception. *Sophia Linguistica* 18, 39-48.
- Jackendoff, Ray S. 1976. Towards an explanatory semantic representation. *Linguistic Inquiry* 7, 89-150.
- Jelinek, Eloise. 1998. Voice and transitivity as functional projections in Yaqui. In *The projections of arguments: lexical compositional factors*, edited by M. Butt and W. Geuder. Stanford: CSLI Publications, 195-223.
- 1991. Noun and verb in Yaqui possessive sentences. The 65th Annual Congress of the Linguistic Society of America, in Chicago.
- 1993. Quantification in progressive sentences in Yaqui. *SSILA*, Columbus, Ohio.
- Jelinek, Eloise and Fernando Escalante. 2000. Unaccusative and unergative verbs in Yaqui. *Uto-Aztecan: structural, temporal and geographic perspectives*. México: Universidad de Sonora.
- 1988. 'Verbless' possessive sentences in Yaqui. *In honor of Mary Haas: From the Haas Festival Conference on Native American Linguistics*, edited by William Shipley. The Hague: Mouton de Gruyter.
- 1988. Double accusatives in Yaqui. *Pacific Linguistic Society*.
- 1987. Passive/Impersonals in Yaqui. *Paper presented at CAIL*, Chicago.
- Karttunen, Lauri. 1971. Implicative verbs. *Language* 47: 340-358.
- Kiparsky, Paul and Carol Kiparsky. 1970. Fact. *Progress in Linguistics*, edited by M. Bierwisch and K. E. Heidolph. The Hague: Mouton de Gruyter, 143-173.
- Kirsner, Robert. and Sandra Thompson. 1976. The role of pragmatic inference in semantics: a study of sensory verb complements in English. *Glossa* 10, 200-240.
- Klamer, Marian. 2000. How report verbs become quote markers and complementizers. *Lingua* 110.69-98.

- Koenig, Jean-Pierre and Anthony R. Davis. 2001. Sublexical modality and the structure of lexical semantics representations, *Linguistic and Philosophy* 24: 71-124.
- Labbé, Sophie. 2002. *The infinitive and the gerund as complement of verbs of negative attitude*. M.A. Faculté des Lettres, Université Laval.
- Lambrecht, Knud. 1981. *Topic, antitopic, and verb agreement in non-standard French*. Series 'Pragmatics and Beyond' 2 (6). Amsterdam: John Benjamins.
- Langacker, Roland. Subjectification. *Cognitive Linguistics*. 1 (1): 5-38. 1990 .
- 1977. *An Overview of Uto-Aztecan Grammar*. Studies in Uto-Aztecan Grammar 1, SIL and UTA.
- Levin, Beth. 1993. *English verb classes and alternation: a preliminary investigation*. Chicago: University of Chicago Press.
- Levin Beth and Marla Rappaport-Hovav. 1995. *Unaccusativity: at the Syntax-Lexical Semantic Interface*. Cambridge: MIT Press.
- 2002. What alternates in the dative alternation? Paper presented at the International Role and Reference Grammar Conference, in Logroño, Spain.
- Levy, Paulette. 1994. Verbos con sentido causativo en la construcción transitiva. *II Encuentro de Lingüistas y Filólogos de España y México*. Universidad de Salamanca y Junta de Castilla y León, 347-366.
- Lindenfeld, J. 1973. *Yaqui Syntax*. University of California Press.
- Lyons, John. 1968. *Introduction to theoretical linguistics*. Cambridge: University Press.
- Martínez, Constantino and Terence Langendoen. 1996. Sobre las llamadas cláusulas relativas en yaqui. *Memorias del III Encuentro de Lingüística en el Noroeste*, edited by Z. Estrada, M. Figueroa, and G. López. Mexico: Universidad de Sonora.
- Megerdooian, K. 2001. Event structure and complex predicates in Persian. *Canadian Journal of Linguistics* 46, 97-125.
- Merlan, F. 1985. Split intransitivity: functional oppositions in intransitive inflection. In *Grammar inside and outside the clause*, edited by J. Nichols and A. Woodbury. Cambridge: Cambridge University Press, 324-361.
- Miller, Wick. 1993. *Guarijio: Gramática, textos y vocabulario*. Mexico: Universidad Nacional Autónoma de México.

- Mithun, Marianne. 2000. Valency-changing derivation in Central Alaskan Yupi'k. In *Changing valency: case studies in transitivity*, edited by R.M.W. Dixon and Alexandra Y. Aikhenvald. Cambridge: Cambridge University Press, 84-114.
- 1991. Activity/Agentive case marking and its motivations. *Language* 67 (3).
- 1988. Lexical categories and the evolution of number marking. In *Theoretical Morphology*, edited by M. Hammond and M. Noonan. New York: Academic Press, 211-234.
- Noonan, Michel. 1985. Complementation. *Language typology and syntactic description 2*, edited by T. Shopen. Cambridge University Press, 42-140.
- Nichols, Johanna. 1985. The directionality of agreement. Proceedings of the 11<sup>th</sup> Annual Meeting of the Berkeley Linguistic Society, Berkeley: University of California, 273-286.
- Ojeda, A. 1998. The semantics of collectives and distributives in Papago. *Natural Language Semantics* 6, 245-270.
- Ohuri, Toshio. 2001. Some thoughts on a new systematization of Interclausal Semantic Relations. Paper presented in the International Role and Reference Grammar Workshop, in Santa Barbara, California.
- Perlmutter, M. D. 1978. Impersonal passive and the unaccusative hypothesis. Proceedings of the 4<sup>th</sup> Annual Meeting of the Berkeley Linguistic Society, Berkeley: University of California, 157-189.
- Primus, Beatrice. 1998. The relative order of recipient and patient in the languages of Europe. In *Constituent order in the languages of Europe*, edited by A. Siewirska. The Hague: Mouton de Gruyter.
- Ransom, Evelyn N. 1986. *Complementation: its meanings and forms*. Typological Studies in Language 10. Amsterdam: John Benjamins.
- Rude, Noel. 1996. Objetos dobles y relaciones gramaticales: el caso del yaqui. *Memorias del III Encuentro de Lingüística en el Noroeste*, edited by Z. Estrada, M. Figueroa, and G. López. México: Universidad de Sonora, 491-522.
- Shibatani, Masayoshi. 1996. Applicative and Benefactives: a cognitive account. In *Grammatical constructions: their form and meaning*, edited by M. Shibatani and S. Thompson. Oxford: Clarendon Press, 157-194.
- Shibatani, M. and Pardeshi, P. 2002. The causative continuum. In *The grammar of causation and Interpersonal manipulation*, edited by M. Shibatani. Amsterdam: John Benjamin.

- Shopen, Timothy. 1985. *Language typology and syntactic description*. Three volumes. Cambridge: Cambridge University Press.
- Silverstein, Michel. 1976. Hierarchy of features and ergativity. In *Grammatical categories in Australian languages*, edited by Dixon, R.M.W. Canberra: Australian Institute of Aboriginal Studies.
- Smith, Carlotta. 1997. *The parameter of aspect* (2<sup>nd</sup> ed.). Dordrecht: Reidel.
- Song, Jae-Jung. 1996. *Causatives and causation: a universal-typological perspective*. London: Longman.
- Stump, G. 1998. Inflection. In *The Handbook of Morphology*, edited by Spencer and Zwicky, 13-43.
- Suzuki, Satoko. 2000. De dicto complementation in Japanese. In *Complementation*, edited by K. Horie. Amsterdam: John Benjamins, 33-58.
- Talmy, Leonard. 2000. *Toward a cognitive semantics*. Two volumes. Cambridge: Massachusetts Institute of Technology.
- 1985. Lexicalization patterns: semantic structure in lexical forms. In *Language Typology and Syntactic Description 3*, edited by T. Shopen. Cambridge: Cambridge University Press, 57-149.
- Tenny, C. 1994. *Aspectual roles and the syntax-semantics interface*. Boston: Kluwer Academia.
- Thompson, Sandra and Robert E. Longacre. 1985. Adverbial clauses. In *Language typology and syntactic description 2*, edited by T. Shopen. Cambridge: Cambridge University Press, 171-234.
- Toratani, Kiyoko. 2002. The morphosyntactic structure and logical structure of compound verbs in Japanese. Ph. D. diss., University at Buffalo.
- Toratani, K. 1998. Lexical aspect and split intransitivity in Japanese. Papers from the 34<sup>th</sup> Regional Meeting of the Chicago Linguistic Society. Chicago: University of Chicago Press, 377-391.
- Traugott, Elizabeth. 1989. On the Rise of Epistemic Meanings in English: An Example of Subjectification in Semantic Change. *Language* 65 (1): 31-55.
- Van der Auwera, J. 1985. The predicative relatives of French perception verbs. In *Predicates and Terms in Functional Grammar*, edited by A.M. Bolkestein, C. de Groot, J.L. Mackenzie. Foris publications, 219-234.

- Van Valin, Robert D., Jr. 2005. *Introduction to Role and Reference Grammar*. Cambridge: Cambridge University Press.
- 2001. The Role and Reference Grammar analysis on three-place predicates. Paper presented at the Role and Reference Grammar, in Santa Barbara, California.
- 1993. *Advanced in Role and Reference Grammar*. Amsterdam: John Benjamin.
- 1991. Semantic parameters of split intransitivity. *Language* 66, 221-60.
- 1977. Aspects of Lakhota Syntax. A Study of Lakhota syntax and its implications for universal grammar. Ph. D. diss., niversity of California at Berkeley.
- Van Valin, R., and R. J. LaPolla. 1997. *Syntax. Structure, meaning and function*. Cambridge Textbooks in Linguistics Series. Cambridge University Press.
- Van Valin, Robert D., Jr. and David Wilkins. 1996. The case for 'effector': case roles, agents and agency revised. In *Grammatical Constructions: their form and meaning*, edited by M. Shibatani and S. Thompson. Oxford: Clarendon Press, 289-322.
- Vázquez, Verónica. 2002. Some constraints on Cora causative constructions. In *The grammar of causation and interpersonal manipulation*, edited by M. Shibatani. Amsterdam: John Benjamins.
- 1996. El Participante no sujeto en Cora: orden de palabras, codificación y marcación de número. *Memorias del III Encuentro de Lingüística del Noroeste*. México: Universidad de Sonora, 533-554.
- Vendler, Zeno. 1947. *Linguistics in philosophy*. Ithaca: Cornell University Press.
- Viberg, Ake. 1983. The verbs of perception; a typological study. *Linguistics* 21:1, 123-62.
- Willet, Thomas. 1991. *A reference grammar of Southeastern Tepehuan*. The Summer Institute of Linguistics, and the University of Texas at Arlington.
- Wierzbicka, Anna. 1988. *The semantics of grammar*. Amsterdam: John Benjamins.
- 1987. *English speech act verbs. A semantic dictionary*. Sydney: Academic Press.
- Yang, B.1998. *A Role and Reference Grammar's account of unaccusativity in Korean and Japanese: split intransitivity*. Paper presented at International Role and Reference Grammar Conference, in Santa Barbara, California.