COMPLEMENTATION IN THREE FORMOSAN LANGUAGES
—AMIS, MAYRINAX ATAYAL AND TSOU

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ABSTRACT

This dissertation provides a comprehensive description of syntactic constructions involving complementation in three typologically representative Formosan languages—Amis, Mayrinax Atayal and Tsou. Specifically, three types of constructions are discussed: (i) constructions with a full complement clause; (ii) constructions with a shared argument; and (iii) constructions with a “raised” argument. The research questions are centered on four topics: clause linkers, null arguments, serial verb constructions, “raising” phenomena, and split subjecthood.

Cause linkers in these languages are homophonous with various other items. The homophony suggests that these clause linkers may have their origins in the homophonous items. The most likely sources for the clause linkers include: (i) accusative Case marker; (ii) coordinating conjunction; and (iii) verb of saying.

Control constructions come in three types: actor control, patient control, and apparent patient control. The null argument (that is, controlee) needs to be a trigger actor in all control constructions except for Amis patient control. Moreover, the matrix clauses must have an overt trigger argument in all control constructions.

In previous Formosan studies, the constructions with juxtaposed verbs were treated SVC. However, the present study shows that only the relevant constructions in Tsou are SVC and that Tsou has two types of SVCs: same-actor SVC and same-trigger SVC.

Apparent “raising” occurs in constructions with a full complement clause and actor control construction. The trigger argument (also known as “topic”, “pivot”, “focused NP”, and so on) of the full complement clause can be optionally realized as a trigger/accusative argument in the matrix clause. This study shows that this optional “raising” is not an instance of raising, but involves A’-movement of a null operator. Raising in actor control, on the other hand, is shown to be an instance of raising with the embedded patient obligatorily moving into the matrix trigger position.

Like Philippine languages, the subject properties distribute over actor and trigger in Formosan languages. Split subjecthood is also attested in the Formosan complementation, in which the subject properties are carried by actor NPs, trigger NPs, and actor-trigger NPs.
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CHAPTER ONE
INTRODUCTION

1.1 Objectives and research questions
This dissertation provides a comprehensive description of the constructions involving complementation in three representative Formosan languages—Amis, Mayrinax Atayal and Tsou—Austronesian languages spoken by the aborigines of Taiwan. The objectives of the dissertation are three-fold: (i) to give an accurate and comprehensive descriptive analysis of the constructions involving complementation in the three Formosan languages; (ii) to provide some historical accounts for the development of clause linkers and their current status in the three languages, and (iii) to discuss the implications of the findings from the viewpoint of typology of Formosan languages. The syntactic constructions involving complementation fall into three groups: (i) constructions with a full complement clause; (ii) constructions with a shared argument (including control and serial verb construction); and (iii) constructions with a “raised” argument.

My research questions concern three issues: (i) predicates in complementation; b) clause linkers in complementation; and c) null arguments in complementation.

Regarding the predicates in complex sentences, many languages of the world are known to have certain constraints on embedded clauses. For example, in English, embedded clauses with a missing argument must be infinitival. Chang & Tsai (2001) propose an “actor sensitivity constraint” on the embedded predicates in Kavalan and some other Formosan languages. Their work provides inspiration for my study.

My research questions on the predicates in complementation are as follows:

a) Are there trigger and/or tense/aspect constraints on the subordinate predicates in complex sentences?
b) Is there trigger concord or correlation between the matrix predicates and subordinate predicates?
c) What do these findings suggest as to the syntactic structures of these complementation constructions? Does the second predicate belong to a juxtaposed verb/verbal phrase, a conjoined clause or a subordinate clause?
Clause linkers play a significant role in the studies of complementation. Questions concerning the linkers are:

d) What is the syntactic status of the clause linkers? Are they complementizers or the same items as the homophonous elements, such as the accusative Case marker and coordinating conjunction?
e) Where there is no linker, how should the relevant construction be analyzed? Should a phonetically null clause linker be postulated? If so, what is its syntactic category: a complementizer, a conjunction, a Case marker, or something else?
f) If they are not complementizers, can we consider these differences to be evidence for other syntactic items, such as an accusative/oblique Case marker and a coordinating conjunction?
g) If they are complementizers, do they behave the same in these three Formosan languages? If they manifest different syntactic properties, what do the differences suggest as to the properties of the Formosan complementizers?

The questions regarding the missing arguments in the Formosan complementation are as follows:

a) Where can the missing argument occur in the embedded clause, in a position similar to that of the embedded subject in other languages like English or somewhere else?
b) Is there a trigger/Case marking constraint on the missing argument of the embedded clause?
c) Is there a trigger/Case concord or correlation between the embedded missing argument and its coreferential matrix argument?
d) What do their properties suggest as to the syntactic structures of the relevant complementation constructions?

1.2 Language profiles

Formosan languages, spoken by the indigenous peoples of Taiwan, include at least thirteen living languages and eleven extinct languages. The thirteen living languages are Amis, Atayal, Seediq, Bunun, Kavalan, Paiwan, Saisiyat, Puyuma, Rukai, Thao, Tsou, Kanakanavu and Saaroa; and the eleven extinct languages are Basay (including

1 The Case written with a capital C refers to the abstract notion which is distinct from the morphologically marked case. Abstract Case is present even in languages which lack morphological case, such as Chinese.
2 The list of Formosan languages does not include Yami though Yami is also spoken by the indigenous Tao people of Taiwan. Yami is the only language of Taiwanese aborigines that does not fit in with the other Formosan languages, as it shares linguistic similarities with the Iatan language spoken in the Batanes Islands of the northern Philippines. It is subgrouped with other Batanic languages under the Malayopolynesian branch.
Ketagalan), Kulon, Qauqaut, Hoanya, Makatao, Babuza (or Favorlang), Pazeh (or Pazih), Popora, Taokas, Siraya, and Taivoan. In order to cover the majority of clausal complement types found across Formosan languages, three typologically representative Formosan languages are selected for this study—Amis, Mayrinax Atayal and Tsou.

1.2.1 Amis: Central dialect

Amis (Chinese:阿美語) is spoken by the Amis people, one of the fourteen officially recognized peoples of Taiwan’s aborigines. Among all the Formosan ethnic groups, Amis is noted for its large population. In the year 2009, the Amis people numbered 183,799, which was approximately 36.4% of Taiwan’s total indigenous population of 504,531. Note that the census figures only reflect ethnicity, not the number of speakers. The indigenous languages in Taiwan are all endangered since the intergenerational transmission rates have been very low in the past few decades. Generally speaking, only those over 50 are proficient in Amis.

The traditional territories of the Amis people cover the areas ranging from Hualien County in the north and southward through Taitung County to a small region of Pingtung County in the southeastern part of the island, as seen in Figure 1.1. Geographically, the Amis people distribute over the long narrow valley between the Central Mountain Range (中央山脈) and the Coastal Mountain Range (海岸山脈), the Pacific coastal plain eastern to the Coastal Mountains, and the Hengchun Peninsula (恆春半島). The Amis people are primarily farmers and/or fishermen depending on whether their villages are located by the Eastern Coast (東海岸). Due to economic reasons, the majority of the young and middle-aged Amis has moved to urban areas and developed urban communities in many cities of Taiwan. The urban aborigines of Amis comprise the majority of Amis today.

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3 The Atayal dialects are very diverse. The Squiliq and C’uli’ dialects of Atayal are mostly mutually unintelligible and sometimes considered as separate languages. Among the Atayal dialects, the Mayrinax dialect is unique, as it is conservative (e.g., preserving many archaic grammatical markers), and innovative (e.g., having separate male and female registers which have different vocabulary). To be specific, it is referred as “Mayrinax Atayal” or “Mayrinax” instead of “Atayal” in this dissertation.

4 These figures are from the census of 2009 published by the Council of the Indigenous Peoples, Executive Yuan, Taiwn (R.O.C.).
Figure 1.1. Distribution of Formosan languages and Yami (from Li 2004:6).
According to Blust (1999), Amis is one of the Austronesian languages in the East Formosan subgroup, one of the ten primary branches that split directly from Proto-Austronesian (PAN). East Formosan is further divided into three subgroups: Northern, Central, and Southwest. Amis belongs to the Central branch of the East Formosan subgroup (see Figure 1.2).

Figure 1.2. Austronesian language subgrouping (after Blust 1999).

As for the internal classification of Amis, Tsuchida (1982) proposes that there are five major dialects of Amis: (i) Sakizaya (撒奇萊雅群); (ii) Northern/Nanshi Amis (北部/南勢阿美群); (iii) Tavalong-Vata’an (太巴塱-馬太鞍群); (iv) Central/Haian Amis (中部/海岸阿美群); and (v) Southern/Peinan and Henchun Amis (南部/卑南恆春阿美群). The distribution of the five dialects is illustrated in Figure 1.1.

The Amis people call themselves “Pangcah”, which means ‘human’ or ‘people of our kind’. Meanwhile, the term “Amis” is widely and officially used in today’s Taiwan. The word “Amis” also means ‘north’. According to Yuan (1969), the name Amis was first used by the Puyumas to refer to their northern neighbor. Distinct from most of the indigenous peoples of Taiwan, the Amis people are traditionally matrilineal. However, the younger generations have switched to the patrilineal system under the impact of modern sinicization.

The data used in this study were gathered from the Dong-hsin (東興) community of the Central Amis dialect. The Dong-hsin community, named “Malalo’on” in Amis, is a
small community with around 200 Amis people in the southern part of Hsinshe village (新社村), a coastal village of Hualien County. Hsinshe is the largest settlement of Kavalan, another indigenous people of Taiwan. In addition, it is about 5 kilometers north of Fengbin (豐濱), one major settlement of Central Amis. The marriage between Amis and Kavalan is rather common in this area. Most of the villagers are bilingual in Amis and Kavalan. Note that only the villagers whose ages are above 50 can speak Amis and Kavalan. The younger generations of Amis are not proficient in Amis and some of them do not speak Amis at all.

### 1.2.2 Atayal: Mayrinax Dialect

Atayal (Chinese: 泰雅語) is an Austronesian language spoken by the Atayal people of Taiwan. Among the fourteen officially recognized peoples of Taiwanese aborigines, Atayal is the third largest group with a population of 80,061. The number of Atayal native speakers is much less than the number of the population, as Atayal is an endangered language with a fairly low rate of intergenerational language transmission. The Atayal people aged over 50 normally are proficient in Atayal. Most under 50 speak Mandarin Chinese and/or Hakka instead.

The Atayal people live in the central and northern areas of the Central Mountain Range (中央山脈) in Taiwan (see Figure 1.1). The Atayal society is patrilineal. They originally lived by hunting, fishing, gathering, and cultivating crops. Today, the majority of the younger generations reside in metropolitan areas.

In terms of its genetic relationship in the Austronesian language family, Atayal and Seediq belong to the Atayalic branch, one of the ten major subgroups directly split from PAN (see Blust 1999), as shown in Figure 1.2. According to Li (1981, 1982, 1997), Atayal has two major dialectal branches—Squliq and C’uli’. Squliq and C’uli’ are

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5 The figure is from the census of 2009 published by the Council of the Indigenous Peoples, Executive Yuan, Taiwan (R.O.C.).

6 Hakka is a Chinese language spoken in Taiwan. In Taiwan, Hakka is mainly spoken by Hakka people who comprise the second largest ethnic group in Taiwan, about 15-20% of the population. After Min-Hakka Clan Wars (閩客械鬥) in the 18th century and late 19th centuries, many Hakka people moved to lands up in the hills or remote mountainous regions/areas in Taiwan. Today many Hakka continue to live in these areas. Some of their locations, especially in Taoyuan, Hsinchu, Miaoli, and Taichung Counties, are contiguous to the communities of the Atayal people. Thus, most Atayal people in these areas can speak Hakka. For instance, all my Mayrinax Atayal consultants are fluent speakers of Hakka.
cognates meaning ‘human’ or ‘people of our kind’. Li (1997:3) demonstrates the internal relationships of the Atayalic subgroup with representative dialects, as shown in Figure 1.3.

Figure 1.3. Major branches and dialects of Atayalic subgroup (adapted from Li 1997:93).

Compared to Squiql dialects, C’uli’ dialects are more conservative and preserve a number of archaic linguistic features. Among C’uli’ dialects, the Mayrinax dialect is known to be the most conservative dialect with approximately 50 native speakers. Its most notable characteristic is that the lexicon displays gender differences, where women’s speech is a more conservative variety, and men’s speech is innovative (Li 1982).

Because Mayrinax Atayal has many fine distinctions in its complementation constructions, it is included in my research. The Mayrinax dialect is spoken in the Yuandun (圓墩) community of Jinshui village (錦水村), Tai’an Township, Miaoli County. The name ‘Yuandun’ is a Chinese name given in the period of Republic of China rule after 1945. The Atayal people of the Yuandun community call themselves “Mayrinax” or “Matu’uwal”. The Yuandun community includes two dispersed settlements over the two banks of Wenshui Stream (汶水溪): the left bank is called “Tabilas” and the right bank is called “Cahian”. In the period of the Empire of Japan, some C’uli’ Atayal people in Shiuejian (雪見) and Shukuan (曙光) were gradually moved to Cahian (beginning in 1925) because their communities were located in the
depths of the mountainous areas near Dabajian Mountain (大霸尖山). The Mayrinax Atayal people call the newly immigrated C’uli’ people “Kinhakul”, which means ‘the person who eats leaves’. The mixed settlement of the Mayrinax and newly immigrated C’uli’ in Cahian formed today’s Sapulu (砂埔鹿) village. Compared to the conservative Mayrinax dialect, the C’uli’ dialect spoken by the newly immigrants was relatively simple. The Mayrinax people aged above 60 can speak both dialects (in fact, languages). However, the newly immigrated C’uli’ people cannot speak Mayrinax. In addition, the intergenerational transmission rate of the Mayrinax dialect is fairly low. Generally speaking, only those over 60 are proficient in Mayrinax.

1.2.3 Tsou: Tapangu/Tfuya dialects

Tsou (Chinese: 邹語) is an Austronesian language spoken by the Tsou people of Taiwan. Tsou is defined differently in terms of ethnic and linguistic perspectives. To be exact, the Tsou language is one of the languages spoken by the Tsou people. The languages spoken by the Tsou people include Tsou (or Tsou proper), Kanakanavu, and Saaroa. According to Blust (1999), all of the three languages belong to the Tsouic subgroup, directly branching from PAN, as shown in Figure 1.2.

The Tsou people mainly scatter in the mountainous areas of south-central Taiwan and, administratively, cover three counties—Chiayi County, Nantou County, and Kaohsiung County (see Figure 1.1). Based on their distributions, the Tsou people are divided into North Tsou and South Tsou. Tsou is spoken by North Tsou, and Kanakanavu and Saaroa by South Tsou. The North Tsou, also called Alishan Tsou, is distributed in the area of Mt. Ali (or Alishan) of Nantou and Chiayi Counties; the South

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7 The Atayal and Saisiyat people, two groups of Taiwanese aborigines, believe that Dabajian Mountain is their holy mountain. In the Atayal mythology and folklore of some tribes, this mountain was said to be the homeland of the Atayal people.

8 In the oral history of Tsou and Thao, it is said that the Thao people (one Formosan people who live in the side of the Sun Moon Lake of Nantou County) was originally one branch of the Tsou people. The ancestors of Thao originally inhabited in the area of Mt. Ali. One day they saw a white deer and started chasing it until they arrived in the area of Sun Moon Lake. Then, the deer ran into the water, leaving the Thao people staying there afterwards. Note that the Thao ancestors used to live on the island in the middle of Sun Moon Lake about one century ago. Today they live on the side of Sun Moon Lake instead. However, it is still controversial among the Formosan historians whether Thao is a branch of the Tsou people. Moreover, there is no linguistic evidence that supports this point. Linguistically, Thao and Tsou are two separate languages, not dialects.
Tsou is due south of the North Tsou, administratively belonging to Kaohsiung County. The Tsou people used to live by hunting, fishing, gathering, and cultivating crops. In the modern times, some of the young Tsou people have moved to different metropolitan areas of Taiwan. For those who stay in the traditional territory, they mainly rely on growing high-mountain tea, wasabi, jelly fig, bamboo shoots, plums, flowers (mainly fragrant lilies), high-mountain vegetables, etc. The Tsou society is patrilineal and famous for a fully-fledged clan system among Formosan peoples.

North Tsou constitutes the majority of the Tsou people. Among the villages of North Tsou, there are four major dialects: Tapangu, Tfuya (or T'fuesa), Luhtu (or Luhtsu/Duhtu), and Imutsu (or Limutsu). The last dialect became extinct in the early twentieth century since all the speakers migrated to other areas. The living dialects of Tsou today are Tapangu, Tfuya, and Luhtu. Luhtu is a moribund dialect, which is spoken in about 30 families of the Jiumei community (久美社區), Wanmei Village (望美村), Hsinyi Township (信義鄉), Nantou County (Li 1992:31). The Luhtu speakers are surrounded by the Bunun people, another Formosan people. The speakers of Tapangu and Tfuya dialects scatter in seven major villages of Alishan Township, Chiayi County. The seven villages include the so-called “South Three Villages” (Saviki, Sinvi and Cayamavana) and “North Four Villages” (Dadauya, Tapangu, Tfuya and Dadangia). Note that the purported south-north distinction does not correspond to a dialectal difference between Tapangu and Tfuya. There is no clear geographical boundary between the Tapangu and Tfuya dialects. The Tapangu dialect is spoken in Tapangu (Chinese:達邦 ‘Dabang’), Niae’ucna (里佳 ‘Lijia’), Saviki (山美 ‘Shanmei’), and Sinvi (新美 ‘Xinmei’), while the Tfuya dialect is spoken in Tfuya (特富野 ‘Tefuye’), Cayamavana (茶山 ‘Chashan’), Dadauya (樂野 ‘Leye’) and Dadangia (來吉 ‘Laiji’).

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9 High-mountain tea refers to any tea grown in the alpine tea zones, higher than 1000 meters above sea level in Taiwan.
10 Niae’ucna (Chinese: 里佳 ‘Lijia’) is included in Tapangu since it split from Tapangu in its historical development.
Compared to other Formosan peoples, the Tsou people (including North Tsou and South Tsou) are a highly endangered ethnic group with a very small population of 6,783\textsuperscript{11}. The Tsou language is highly endangered with the number of the native speakers estimated to be one third of the total population. Generally speaking, the Tsou people aged above 60 can speak Tsou fluently. For those younger than 60 or so, they tend to use Mandarin Chinese instead, since they do not have good control of Tsou. Kanakanavu and Saaroa are among the most endangered Formosan languages, neither of them having more than 10 speakers.

Li (2006) shows that Tsou’s grammatical structure is unique among the Formosan languages\textsuperscript{12}. In terms of complementation, it is the only language that mainly uses a clause linker homophonous with a coordinating conjunction to link main clauses and subordinate clauses. For this unique feature, Tsou is chosen as one of the target languages of this study. The data used in this dissertation are mostly from the Tsou speakers residing in the Dabang village (達邦村) and one from Lijia village (里佳村). Because of the marriage between Tsou villages and other reasons in modern times, the villagers of Dabang are not necessarily the speakers of Tapangû dialect.\textsuperscript{13} My language consultants of the Dabang village speak both Tapangû and Tfuya dialects. As for the consultant of the Lijia village, he is also a speaker of the Tapangû dialect, as the ancestors of Lijia originally lived in the Dabang village and later moved to Lijia. The dialectal differences between Tapangû and Tfuya are not significant, as they are only limited to some phonological variations (Li 1979).

1.3 Literature review

Previous studies on Formosan complementation focus mainly on describing complementation phenomena in individual languages. These include: Amis (Wu 1994,

\textsuperscript{11} The figure is from the census of 2009 published by the Council of the Indigenous Peoples, Executive Yuan, Taiwan (R.O.C.).
\textsuperscript{12} According to Li (2006:4), the morphosyntactic characteristics unique to Tsou include the following: (i) every clause obligatorily takes an auxiliary verb; and (ii) the auxiliary and main verbs of a clause show voice concord (that is, trigger concord).
\textsuperscript{13} About sixty or seventy years ago, the marriage between Tapangû and Tfuya villagers was not common. In the past, Tapangû and Tfuya villages competed and fought for hunting, fishing and water rights since the two villages were geographically close to each other.
2000, 2006; En-hsing Liu 2003), Atayal (Lillian Huang 1993, 1995a, 2000a; Ting-chun Chen 2010), Bunun (Zeitoun 2000a), Kavalan (Yung-li Chang 2000a), Paiwan (Tang 1999; Hsiu-chuan Chang 2000), Puyuma (Teng 1997, 2008; Lillian Huang 2000b), Rukai (Ching-hua Kuo 1979; Zeitoun 2000b), Saisiyat (Mei-li Yeh 2000; Huang, Su & Sung 2004; Wang 2010), Seediq (Yung-li Chang 2000b), Thao (Lillian Huang 2000c), Tsou (Zeitoun 2000c; Lin & Su 2001; Lin 2002, 2009; Huei-ju Huang 2003, 2010; Ya-yin Chang 2004), etc. So far, there have been several studies providing the typological comparison involving Formosan complementation, including Lillian Huang (1997), Chang & Tsai (2001), Yung-li Chang (2006a, 2006b, 2009, 2010), Tsai (2007) and Yeh & Huang (2009), etc.

Examining the theories used, these previous studies can be generally divided into three groups: (i) the functional/cognitive/discourse approach; (ii) the Role and Reference Grammar (RRG) approach; and (iii) the generative approach.


The serial verb construction (SVC) taken as a cross-Formosan syntactic structure was first proposed by Lillian Huang (1997). Mainly following a semantic criterion, Lillian Huang (1997) treats the verb juxtaposition with a shared argument as an instance of SVC (regardless of the condition) whether there is an intervening linker or not. Hence, the SVC can be commonly found in the Formosan languages. Another cross-Formosan study on SVC is Yung-li Chang 2006a. Different from Lillian Huang’s (1997) point of view, Yung-li Chang (2006a) argues that the SVC analysis holds for the Formosan languages which have verb juxtaposition without a clause linker, such as Kavalan and
Tsou, while it does not hold for other Formosan languages with an overt clause linker between the juxtaposed verbs, such as Paiwan. Furthermore, Yung-li Chang (2006b, 2009, 2010) extends the SVC analysis to the adverbial verb constructions (AVC) in Formosan languages.\(^{14}\) A wide range of adverbial concepts in Formosan languages, such as sentential adverbs and degree/quantifier words, are expressed in the forms of verbs (cf. Starosta 1988). An adverbial expression and its lexical verb are merged into a verbal complex without an intervening linker, constituting an AVC. Yeh & Huang 2009 is an advanced work on cross-Formosan SVCs, which investigates the compositional structures of the triple verb serialization in four Formosan languages—Kavalan, Saisiyat, Squliq, and Tsou.

Another recently developed approach to complementation in Formosan languages is discourse analysis. On the basis of the functional/cognitive accounts, discourse analysis examines syntactic phenomena using corpus-based natural discourse data and even involves some qualitative studies based on natural data (cf. Shuanfan Huang 1999; Huang, Su & Sung 2004). Examples of discourse analysis applied to investigate Formosan complementation are Lin & Su (2001), Lin (2002), Huei-ju Huang (2003, 2010), Huang, Su & Sung (2004), Yeh & Huang (2009), Wang (2010), etc. In addition to these two approaches, Zeitoun (2007) and Teng (2008) examine complementation in Mantauran (Rukai) and Puyuma, respectively, based on Noonan’s (1985) model of complementation strategies and structures.

Using the framework of Role and Reference Grammar (RRG), Wu (2006) examines control phenomena in Amis. RRG denies that grammatical relations (e.g., subject, object, and indirect object) are language universal (see Van Valin & LaPolla 1997, Van Valin 2005). In RRG, the privileged syntactic argument is recognized as the only syntactic function. The privileged syntactic argument is a cover term for controllers and pivots. Controller refers to the argument that triggers verb agreement, serves as the antecedent of the anaphoric expression, or controls the interpretation of a missing argument in a linked unit; whereas pivot refers to a missing argument in a linked core, such as the controlee of the control construction, the raised element in raising constructions or the target of relativization constructions. Wu (2006) identifies three types of control constructions in

\(^{14}\) Note that this dissertation topic concentrates on the typical SVCs in Tsou, therefore, not including AVCs.
Amis: try-type, persuade-type, and promise-type. Wu (2006:393) argues that the Amis controller-pivots can be explained in terms of their semantic roles.

The generative studies involving Formosan complementation mainly cover three constructions: (i) constructions with a finite complement clause; (ii) control constructions (or nonfinite complement clauses); and (iii) serial verb constructions (SVCs). The constructions with a finite complement clause and control constructions are treated as a bi-clausal structure of complementation, while SVCs are treated as a monoclausal structure of verb juxtaposition. Tang (1999) is the first generative study on Formosan complementation, distinguishing finite complement clauses from nonfinite complement clauses in Paiwan. The finite and non-finite clausal complements are syntactically marked with two different clausal linkers in Paiwan: tu for finite clauses and a for non-finite clauses.

The control analysis of two verbs with a coreferential argument has been proposed for Paiwan (Tang 1999), Tsou (Chang & Tsai 2001; Ya-yin Chang 2004; Lin 2009), and Amis (En-hsing Liu 2003). The control constructions are further divided into three types: try-type, promise-type, and persuade-type. In all types of control constructions, the embedded clause is assumed to have a covert subject (PRO), which is coreferential with either the matrix actor (promise-type) or matrix patient (persuade-type). Furthermore, Chang & Tsai (2001) propose an “actor-sensitivity” constraint for object control in some Formosan languages, such as Kavalan and Tsou. According to Chang & Tsai (2001), the term “actor sensitivity” refers to a constraint in which the actor must override other arguments in the same clause. If a Formosan language obeys that constraint, the embedded verbs of patient control might undergo causativization in order to switch the controller from the matrix patient to the matrix actor.

The previous studies provide ample data and analyses on complementation and relevant constructions in Formosan languages. Their contributions are undoubtedly invaluable in two aspects: (i) they cover the preliminary and even advanced issues, mostly based on single Formosan languages or single syntactic constructions; and (ii) the diverse analyses in the existing literature shed light on capturing the significant syntactic properties of Formosan complementation. The findings of the previous studies serve as a solid foundation for the present study. This dissertation patches some major gaps in each
of the three Formosan languages and, furthermore, to provide comprehensive accounts on the basis of a cross-Formosan comparison. Three issues that have never been widely discussed in the previous studies are: (i) identifying the syntactic categories of the clause linkers and, furthermore, discussing relationships between the clause linkers and homophonous morphemes with other functions; (ii) examining the syntactic properties/constraints of the complement clauses and empty categories (or gaps) in the complementation constructions; and (iii) clarifying the complementation constructions with a “raised” argument. As the existing studies use various theoretical frameworks which incorporate different criteria, assumptions and labels, it is impossible to make straightforward generalizations on Formosan complementation based on their claims. For instance, the same constructions have different names in different approaches: e.g., what is called the cognition-utterance construction in the functional/cognitive approach (e.g., Lillian Huang 1995a) corresponds to two separate categories in Lin’s (2002) study: verb juxtaposition and ho-marked complementation. The examples are illustrated in (1.1) and (1.2).

(1.1) Mayrinax Atayal: Lillian Huang (1995a:223; glosses mine)
a. Cognition-utterance construction:
   forget-LT.NFUT-3S.NOM LNK beat<PERF.PT> T child
   ‘He forgot to beat the child16.’

b. Cognition-utterance construction:
   forget-LT.NFUT-3S.NOM LNK beat<AT.NFUT <PERF> ACC child
   ‘He forgot that he had beaten a child (before).’

(1.2) Tsou: Lin (2002:48; glosses mine)
a. Verb juxtaposition:
   mi?-o ta?paeo?u tufku.
   AT.NFUT-1S.T forget.AT AT.wash.clothes
   ‘I forget to wash clothes.’

15 The angle brackets are used to enclose infixes and their glosses.
16 In this dissertation, an underline is used to indicate the most prominent argument of the clause in the English translation, such as the child in this LT sentence (1.1). This is because there is no direct correspondence in English to express the most prominent argument (i.e., trigger) of the clause in the Formosan languages.
Based on syntactic criteria, I will provide a unified and comprehensive analysis of cross-Formosan complementation by comparing the three typologically representative languages—Amis, Mayrinax Atayal and Tsou.

1.4 Theoretical background
Considering that these target languages are all endangered, one important task of this dissertation is to document in as much detail as possible the syntactic phenomena relating to Formosan complementation in the three languages. The other objective is to provide a typological comparison of the relevant phenomena in the three languages. Although there have been quite a few studies on complementation in Formosan languages, most of them focus on a single language. Furthermore, they adopt different theoretical frameworks, thereby using different terms and criteria based on various different assumptions. Hence, it is difficult to make a uniform comparison of the complementation phenomena in various Formosan languages based on the previous studies. This dissertation aims at providing a comparison of three typologically representative Formosan languages by analyzing the relevant phenomena in the same approach, using exactly the same terminology and the same set of criteria. To this goal, I adopt the generative framework when describing the complementation constructions with a missing argument (or gap), as it offers useful analytical tools to capture the syntactic properties of the empty categories, especially with respect to generalizations and constraints.

In generative syntax, it is assumed that grammar includes an empty category, a nominal element that does not have any phonological content and is, therefore, unpronounced. It may be referred to as a covert noun or null argument in the following chapters, in contrast to the overt arguments. The empty categories fall into four types: NP-trace, pro, PRO, and wh-trace.

**NP-trace** is a gap generated by A-movement (or NP-movement), where an argument moves to a position in which a thematic role is potentially assigned. A-movement is
typically attested in passive and raising constructions in languages like English. Take English raising for example:

(1.3) Raising-to-Subject (RtoS):
   a. *It seems [ Anne to comprehend their plight ].
   b. Anne seems [ t_i to comprehend their plight].

Example (1.3) is understood as a Raising-to-Subject sentence involving A-movement.\textsuperscript{17} The embedded subject Anne in (1.3a) fails to receive Case since the infinitive clause does not assign nominative Case (NOM). As seen in (1.3b), Anne obligatorily moves to the matrix subject in order to satisfy the Case filter (i.e., the requirement that all overt NPs must have Case). The trace left by the moved argument Anne, as indicated by an italic “t” in (1.3b), is an NP-trace which is coreferential with the moved argument.

**Pro (“small pro”)** refers to a pronoun without phonetic properties when it is either inferable from the verbal morphology or the context. In the existing literature, pro is known as a “null subject” of tensed clauses in languages such as Italian and Chinese. Languages which allow the occurrences of the “null subject” are called pro-drop languages. However, the motives for pro-dropping in Italian and Chinese are different. In languages like Italian, where subjects can be dropped, it is because the verbs in these languages are inflected for person, number, and/or gender information, as in (1.4).

(1.4) Italian: pro-drop (Haegeman 1994:451)
   a. Gianni ha parlato.
      Giannni 3S.PRS spoken
      ‘Gianni has spoken.’
   b. (pro) Ha parlato.
      3S.PRS spoken
      ‘(S/he) has spoken.’

\textsuperscript{17} O’Grady (2005:76–80) proposes an alternative analysis for the seem-type pattern in an emergentist approach to syntax. Instead of the traditionally viewed raising in Generative Grammar, he rejected the raising analysis for the seem-type pattern. Rather, the seem-type pattern behaves like the control operation of the try-type pattern.
A number of languages, including Chinese, Japanese, Vietnamese, and Korean, allow pro to occur in the subject position\(^\text{18}\) though they have no agreement morphology like Italian, as illustrated in the following Chinese example:

\begin{equation}
\text{(1.5) Chinese: pro-drop (Cheng-Teh Huang 1989)}
\text{張三說pro來了}
\Rightarrow
\text{Zhangsan say(s/he) come ASP}
\text{‗Zhangsan says that (s/he) came.‘}
\end{equation}

The null subject in (1.5) is licensed by a discourse topic, as it is pragmatically inferable from the context (Cheng-The Huang 1984, 1989).

**PRO (“big pro”)** refers to a covert subject of a non-finite embedded clause, whose existence is required by the Extended Projection Principle (EPP)\(^\text{19}\) and theta-Criterion (\(\theta\)-Criterion)\(^\text{20}\) and whose reference is provided by a matrix argument (controller). The earliest analysis of the control construction referred to the relevant phenomenon as “Equi-NP deletion” (Rosenbaum 1967). It has been observed that there are two kinds of control constructions, subject control and object control. If the matrix subject controls the reference of the PRO, the pattern is called subject control. An example of subject control is illustrated below.

\begin{equation}
\text{(1.6) John promised me [PRO to go away].}
\end{equation}

In (1.6), the verb *promise* is a subject control verb whose subject *John* controls the reference of PRO in the nonfinite complement clause. On the other hand, object control

\(^{18}\text{Note that pro is not necessarily a null subject of tensed clauses. It is also reported that pro can occur in the direct object position of tensed clauses in several languages, such as Italian (Rizzi 1986) and Chinese (Cheng-Teh Huang 1984). However, the existence of the direct object pro is not accepted by all generativists.}

\(^{19}\text{EPP claims that all clauses must have a subject. Under such a theoretical assumption, the inflection phrase (IP) of a nonfinite clause must have a covert subject, that is, PRO.}

\(^{20}\text{The Theta Criterion (or \(\theta\)-Criterion) is a formal device in Government and Binding Theory to enforce one-to-one correspondences between arguments and the theta roles. Without the existence of PRO, all the sentences involved with control should be ruled out by \(\theta\)-criterion. For instance, the matrix subject *John* in the sentence *John tried to catch the cat* bears two \(\theta\)-roles. The two actor roles are assigned from the matrix verb *try* and from the embedded verb *catch*, respectively.}
refers to the complementation construction in which the matrix object controls the reference of PRO, as in (1.7).

(1.7)  John\textsubscript{i} persuaded Susan\textsubscript{j} [PRO\textsubscript{i,j} to leave].

Unlike an NP-trace and its antecedent which shares a \( \theta \)-role, PRO and its controller have separate \( \theta \)-roles.

**Wh-trace** is a phonetically empty category generated by a moved \( wh \)-element. The syntactic operation in which a \( wh \)-element moves is, thus, called \( wh \)-movement. Different from the A-movement, \( wh \)-movement is an instance of A’-movement where the moved element lands in an A’-position (to which a theta-role is never assigned). For example:

(1.8)  

a. Isaac Newton discovered gravity.

b. [What \textsubscript{i} did Isaac Newton discover [t\textsubscript{i}]]?

When the direct object is a \( wh \)-word like *what* in (1.8b), it obligatorily moves to the sentence-initial position (a specifier position of CP) and leaves behind a \( wh \)-trace. Unlike A-movement, this movement is not motivated by Case reasons, and hence the movement takes place from a Case-marked position.

Based on the clearly defined distinctions of the empty categories in the generative framework, we are able to analyze data from the three different languages, to provide accurate comparison of the complementation phenomena involving empty categories and, furthermore, to make typological observations.

**1.5 Data sources**

The data cited in this dissertation are collected from my own fieldwork conducted in 2008–2010 unless noted otherwise. The data collection on the three target languages is briefly introduced in the following paragraphs.
1.5.1 Amis: Central dialect

Amis is the language on which I have worked the longest, starting in 1995. I finished my MA thesis on Amis cleft constructions advised by Dr. Li-may Sung (National Taiwan University) in 1999. The data were from the Ciwkangan community of Changkuan village, Chang-bin Township, Taitung County (台東縣長濱鄉長光村). My principal informants were Ms. Jin-mei Li (李金妹) born in 1945 and Mr. Jin-long Chen (陳金龍) born in 1955. Between 2004 and 2007, I spent every summer and winter break, gathering data on Central Amis from the Dong-hsin community of Hsin-she Village, Fengbin Township, Hualien County (Chinese:花蓮縣豐濱鄉新社村). I also gathered some data of the Sakizaya dialect from its neighboring community Jici (磯崎) with Dr. Paul Jen-kuei Li (Academia Sinica). My language consultants were a couple from the Dong-hsin community: Mr. ‘emuy Kulang (謝有來) born in 1937 and Mrs. Ipay Arik (林金花) born in 1943. Both were born and raised in the Dong-hsin community. In 2009–2010, I conducted fieldwork in the Dong-hsin community on three separate occasions: (i) August 29–September 3, 2009; (ii) June 23–28, 2010; and (ii) July 27–31, 2010.

1.5.2 Atayal: Mayrinax dialect

I joined a project on Seediq, an Atayalic language in 1997, which was led by Dr. Shuanfan Huang (National Taiwan University). I worked with the Seediq language consultant, Mr. Ming-cheng Kuo (郭明正) for one semester and had one fieldwork trip in the summer of 1997. With the guidance of Dr. Paul Jen-kuei Li, I conducted preliminary fieldwork on Mayrinax Atayal in 2007 in the Yuandun community of Jinshui village, Tai’an Township, Miaoli County (Chinese:苗栗縣泰安鄉錦水村). My principal informant was Mr. Watan na’ Ba’ay (湯元豐) born in 1939. He is the current chief of the Matu’uwal (or Mayrinax) in the Yuantuan community, who succeeded the position of his father after his father (Mr. Ba’ay na’ Payang) passed away. Other language consultants of Mayrinax Atayal include: Ms. Tapas na’ Ba’ay (黃湯辰妹) born in 1936; Mr. Abesan na’ Ba’ay (湯元基) born in 1942; and Ms. Namiko na’ Uqih (黃美

1.5.3 Tsou: Tapangu and Tfuya dialects

I assisted Dr. Paul Jen-kuei Li with checking some data in his Tsou texts in the summer of 2007. During that summer, I tried to capture the basic grammar of Tsou and collected some data on Tsou complex sentences. The data were gathered from the Dabang and Lijia villages, Alishan Township, Chiayi County (Chinese: 嘉義縣阿里山鄉達邦/里佳部落). As introduced in Section 1.2.3, there are some native speakers of Tfuya living in the Dabang community mainly because of marriage between villages. My principal language consultants of the Tapangu dialect were Mr. Uong ‘e Yasiung (安振昌) born in 1935 and Ms. Taniv ‘e Tapangu (方桂美) born in 1950. Other language consultants of Tapangu include Dr. Ming-hui Wong (汪明輝) and Ms. Shia-yun Du (杜夏雲). My principal language consultants of the Tfuya dialect were Ms. Moto ‘e Yaisikana (安石瑛珠) born in 1939 and Ms. Sayungu ‘e Tiaki’ana (鄭金鳳) born in 1939. Other language consultants of the Tfuya dialect include Mr. Hsing-shih Wong (汪幸時) and Mr. Jung-kuei Chuang (莊榮貴). In 2008–2010, I conducted four fieldwork trips in the Dabang and Lijia tribes: (i) August 07–August 15, 2008; (ii) August 19–August 29, 2008; (iii) July 27–August 11, 2009\(^2\); and (iv) July 6–12, 2010.

\(^2\) In my fieldwork trips to collect data on Tsou, one significant event that needs mentioning is that all the roads/bridges connected to the Dabang village were broken because of the mudslides caused by typhoon Morakot in August 7–10, 2009. All the villagers, my friend (Ms. Mei-ling Liu) and I were caught there without electricity and water supply. The Dabang village was in a very dangerous situation since none of us could foresee if the mudslide would come into our village. Luckily, it did not. With the aid of the good-hearted Tsou people, my friend and I survived on their food and water supply. On August 11, 2009, the weather became much better with a clear sky. In the afternoon of that day, my friend and I got on an army helicopter sent by the government of Taiwan and returned to the Chiayi Airport one hour later. We returned to our homes of Taipei, respectively, on the very same day, but my car was still left high in the Dabang village of Alishan Township, Chiayi County. However, I still needed to head for the Donghsin village in Hualien County to conduct my fieldwork on Amis in August 29–September 3, 2009. It would have been very inconvenient to stay there without any transportation of my own—so, I spent nine hours
1.6 Organization

This dissertation is organized as follows. Chapter 2 provides some basics on the grammar of Amis, Mayrinax Atayal, and Tsou relevant to the discussion of the Formosan complementation. Each sketch grammar of the three languages mainly covers word order, trigger system, tense and aspect, pronominal marking system, and personal pronominal system. Chapter 3, 4 and 5 focus on the syntactic properties and constraints on complementation and relevant constructions in Amis, Mayrinax Atayal, and Tsou, respectively. The constructions involving complementation include: (i) complementation with a full complement clause; (ii) control (including actor control, patient control, and apparent patient control); (iii) raising (in the actor control); (iv) apparent raising (“raising-to-trigger” and “raising-to-accusative”); and (v) serial verb construction. In addition, Chapter 4 and Chapter 5 explore the syntactic properties of clause linkers and, furthermore, identify their syntactic categories in Mayrinax Atayal and Tsou, respectively. The purpose of Chapter 6 is to summarize the findings in Chapter 3–5 from a typological perspective, specifically centering on three topics: (i) typological classification of three major constructions involving Formosan complementation; (ii) possible accounts for the historical development of the complementation constructions and the relevant clause linkers; and (iii) split subjecthood. The end of Chapter 6 will discuss how the research questions of this study have been answered, how the goal of this study has been achieved, and what issues can be extended as research questions for future study.
CHAPTER TWO
A SKETCH GRAMMAR OF AMIS, MAYRINAX ATAYAL
AND TSOU

This chapter provides some basics on the grammar of Amis, Mayrinax Atayal, and Tsou relevant to our discussion of the Formosan complementation phenomena in the following chapters. These basics include: word order, trigger system, tense and aspect, prenominal marking system, and personal pronominal system.

2.1 A sketch grammar of Amis

This section introduces some concepts of Amis grammar, which are essential for the discussion of the Amis complementation in Chapter 3. The sketch grammar is mainly based on the previous studies on Amis, including Fey (1986), Teresa Chen (1987), Ya-jiun Huang (1988), Zeng (1991), Yan (1992), Tsukida (1993), Wu (1994, 1995, 1996, 2000, 2001, 2003, 2006; etc.), Lillian Huang (1995b, 1996), Tsai-hsiu Liu (1999), En-hsing Liu (2003), Chu (2005), Cheng-chuen Kuo (2008), Shen (2008), Yi-ting Chen (2010), etc. The examples cited in this section are collected from the Dong-hsin (東興) community of Central Amis. Though Central Amis is well studied in the existing literature, the Dong-hsin dialect has some local features distinct from dialects spoken in other villages of Central Amis. The major differences are mainly phonological rather than grammatical. For instance, the sound /l/ in the southern part of the Central Amis is pronounced as /v/ in Dong-hsin. Most of the pharyngealized glottal stops /ʔ/ in other dialects of Central Amis correspond to the normal glottal stop /ʔ/ in the Dong-hsin dialect.

2.1.1 Word order

Like most Formosan languages, Amis is a predicate-initial language. No matter whether the sentence is transitive or intransitive, the verb consistently occurs in sentence-initial position, as illustrated in (2.1).

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22 Almost all Formosan languages are predicate-initial languages; exceptions include Thao and Saisiyat.
(2.1) a. Amis: Intransitive sentence
tayrə\textsuperscript{23} tu ci\textsuperscript{a}ra i pusuŋ.  
AT.NPST-go ASP 3S.T OBL Taitung 
‘He went/has gone to Taitung.’
b. Amis: Transitive sentence
mi-la\textsuperscript{op} kura wawa tuni wacu anini. 
AT\textsuperscript{24}-chase T.that child ACC this dog now 
‘That child is chasing this dog now.’

In equational sentences, the nominal predicate precedes the subject, as shown in (2.2). Thus, Amis is better analyzed as a predicate-initial language.

(2.2) a. u paçcah\textsuperscript{25} ci\textsuperscript{a}ra.  
PRED\textsuperscript{26} Amis 3S.T 
‘He is an Amis.’
b. ci aki ci\textsuperscript{a}ra.  
PRED Aki 3S.T 
‘He is Aki.’

2.1.2 Trigger system
Like other Formosan\textsuperscript{27} and Philippine languages, Amis has a set of verbal affixes which permits a range of arguments to serve as the syntactically prominent noun phrase (NP) of

\textsuperscript{23} Amis has four vowels /i, u, a/ and seventeen consonants /p, t, k, ŋ( or ŋ), v, s, x, h, c, m, n, ŋ, ŋ, l, r, w, y/. The barred /l/ represents a voiceless lateral fricative, and the symbol /ɬ/ refers to a pharyngealized glottal stop. Its occurrences are rare in the Dong-hsin dialect.

\textsuperscript{24} The past/non-past and future/non-future distinctions carried by the AT and PT markers, respectively, are overridden whenever there is a temporal and/or aspectual expression in the clause, such as anini ‘now’, na- ‘(perfective marker)’, and tu ‘(aspectual marker)’. Under such a condition, the AT/PT verbs are not indicative of TAM interpretations involving the past/non-past distinction. The TAM information of the clauses is determined by the temporal and/or aspectual expression. Therefore, the AT/PT verbs remain unmarked for the past/non-past and future/non-future distinctions in our glossing whenever there is a temporal and/or aspectual expression in the same clause.

\textsuperscript{25} The romanization spelling for the word paçcah is “Pangcah”. The velar nasal /ŋ/ is conventionally spelt ng. This word is what the Amis people call themselves, while the term “Amis” which means ‘north’ was first used by the Puyuma aborigines located south of the Amis. In the historical development, the word Amis (or Amei ‘阿美’ in Mandarin Chinese) became the proper name for outsiders to address the Amis people or Amis language.

\textsuperscript{26} In previous studies, Wu (1994) and Lillian Huang (1995b) treat the prenominal markers u and ci, which precede the predicate nominal in (2.2a) and (2.2b), respectively, as “neutral Case markers”. However, the markers before a noun or a noun phrase (namely, the prenominal markers) can be better understood as a predicate marker. In this study, we treat them as predicate markers instead of neutral Case markers. For more discussion, please refer to Section 2.1.4.
the clause. The prominent NP can bear any of the following semantic roles: actor (or agent), patient (or theme), location, and instrument. In the Austronesian linguistic literature, the prominent NP has been called focused NP, trigger, pivot, topic, etc. In the previous Amis studies, the verbal morphology has been analyzed as indicating transitivity and ergativity (e.g., Teresa Chen 1987), focus marking (e.g., Wu 1994, 1995, 1996; Lillian Huang 1995b, 1996; Cheng-chuen Kuo 2008; etc.), and voice inflection (e.g., Zeng 1991, Tsai-hsiu Liu 1999, En-hsing Liu 2003, Wu 2006; etc.). In all of these analyses, the prominent NPs are analyzed as subjects. However, the syntactic behaviors of the prominent NPs are not exactly the same as those of the well-recognized subject in European languages like English. This is because the subject properties distribute over the prominent NP (regardless of semantic roles) and the actor NP (regardless of the prominence) in Amis. Specifically, while the trigger NP shows some “subject” properties (e.g., relativizability), other “subject” properties (e.g., control of a reflexive reference) are demonstrated by the actor NP. Schachter (1976, 1993) suggests the notion of subject does not exist in Tagalog. Like Tagalog, Amis also demonstrates the split-subject phenomenon. Thus, we use Schachter’s (1993) term “trigger” to refer to the prominent NP instead of the problematic notion “subject” in this study.

In this study, following Schachter (1993), the prominent NP is referred to as “trigger”, as this NP triggers verbal agreement. The verbal morphology encodes the thematic (θ) roles of the trigger NPs. The Amis verbal morphology system can be divided into four types: Actor Trigger (AT), Patient Trigger (PT), Location Trigger (LT)\textsuperscript{28}, and Instrument Trigger (IT), as shown in the following table:

\textsuperscript{27} All Formosan languages have a similar trigger marking system, except for Rukai. Rukai is analyzed as possessing an active/passive voice system like English (Li 1973; Ching-hua Kuo 1979; Zeitoun 2000b, 2007; Chen-fu Chen 2008; etc.).

\textsuperscript{28} In Wu’s (2006) active/undergoer voice analysis, AT and PT are regarded as active voice and undergoer (that is, passive) voice, respectively, and LT and IT markers are analyzed as morphological complexes which can be decomposed into an applicative affix and some co-occurring affix(es) which helps indicate the semantic role of the trigger NP, such as goal, patient and location. For example, for LT markers, the suffix -an is taken to be an applicative marker and the prefixes pi- and ka- as a semantic marker. The same analysis holds for the IT markers. The sa- affix is the applicative marker, while the others (pi-, ka-, ka-...<sum>...-an) are the co-occurring semantic labels. The applicative analysis for the LT and IT markers is problematic. The major problem is that it seems to be impossible for each of the single affixes -an and sa- to be responsible for two grammatical processes, that is, passivization and applicativization (cf. Foley 1998).
Table 2.1. Amis verbal morphology system (adapted from Lillian Huang 1996; Tsi-hsiu Liu 1999; Wu 1994, 2000, 2006; etc.)

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Actor Trigger (AT)</th>
<th>Patient Trigger (PT)</th>
<th>Location Trigger (LT)</th>
<th>Instrument Trigger (IT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>on the verb</td>
<td>mi-, ma-, &lt;um&gt;, Ø</td>
<td>ma-, òn/ka-,...-òn</td>
<td>pi-...-an (mi-...-an)</td>
<td>sa-pi-...-ka-...-&lt;um&gt;...</td>
</tr>
</tbody>
</table>

The trigger common noun phrases are always preceded by a marker *ku* regardless of their θ-roles, such as the actor *wawa* ‘child’ in (2.3a), the patient *ʔ défini* ‘mouse’ in (2.3b), the location *kurọ* ‘urn’ in (2.3c), and the instrument *ʔiluc* ‘spear’ in (2.3d).

(2.3)  

a. Amis: AT sentence  
k<um>aʔon ku wawa tu titi.  
eat<AT.NPST> T child ACC meat  
‘The child eats/is eating/will eat meat.’

b. Amis: PT sentence  
ma-kiwat nu wawa ku ñ défini.  
PT.NFUT-hook NOM child T mouse  
‘The child hooks/hooks a mouse.’

c. Amis: LT sentence  
pi-cilah-an nu matuʔasay tu kuwaʔ ku kurọ.  
PT-pickle-LT NOM old.man ACC papaya T urn  
‘The old man pickles papayas in an urn.’

d. Amis: IT sentence  
sa-piʔału̯p nu kapah tu vavyu ku ʔiluc.  
IT-PT-hunt NOM young.man ACC pig T spear  
‘The young man hunts a pig with a spear.’

The four AT markers are lexically conditioned allomorphs. Amis verbs are divided into four types depending on which AT marker they can co-occur with. The differences among the four AT types (*mi-type*, *ma-type*, *<um>-type*, and Ø-type) are both semantic and syntactic. The examples of the four AT types are given below:

(2.4)  

a. *mi-type verb* (Tsai-hsiu Liu 1999:19)  
mi-iaʔup kura wawa ci panay-an.  
AT.NPST-chase T.that child ACC Panay-ACC  
‘That child chases/is chasing/will chase Panay.’
b. *ma*-type verb: (Tsai-hsiu Liu 1999:19)

\begin{verbatim}
\text{ma-vuti\text{\textipa{ʧ}} tu caŋra.}
\end{verbatim}

\text{AT-sleep ASP 3P.T}

‘They slept/have slept.’

c. *<um>*-type verb: (Tsai-hsiu Liu 1999:19)

\begin{verbatim}
\text{r<um>aliw ci aki tu tusa a ra\text{\textipa{lw}.}}
\end{verbatim}

\text{sing<AT.NSPT> T Aki ACC two LIG song}

‘Aki sings/is singing two songs.’

d. *Ø*-type verb: (Tsai-hsiu Liu 1999: 20)

\begin{verbatim}
\text{ala\text{\textipa{la} ca ofa\text{\textipa{l}.}}}
\end{verbatim}

\text{AT.NPST-sick T Ofad}

‘Ofad and his people are sick.’

According to Yan (1992), the *mi*-type (that is, *ni* in Yan’s study on Southern Amis) verbs have the highest transitivity compared to other types of AT verbs. Wu (2006:100) observes that “*mi*-verbs can be characterized to be (syntactically) transitive verbs with a more dynamic nature, e.g., *mi-nanum* ‘(go to) drink (water)’ from *nanum* ‘water’ and *mi-palu*? ‘(go to) beat someone’ from *palu?* ‘beat’, *<um>* verbs are mostly intransitive, physical activities that are less dynamic, e.g., *k<um>aʔen* ‘eat’ from *kaʔen* ‘eat’ and

\begin{verbatim}
\text{r<um>akat ‘walk’ from rakat ‘walk’, and *ma*-verbs are frequently associated with involuntary activities or states, e.g., *ma-kərkər* ‘shiver’ from *kərkər* ‘shiver’ and *ma-ulah* ‘like’ from *ulah* ‘like; love’.”
\end{verbatim}

Note that Wu (2006) does not include Ø morphology in the AT markers. The Ø-marked AT verbs are syntactically intransitive and low in semantic transitivity, e.g., *tayra* ‘go (AT)’ and *a\text{\textipa{la}la* ‘be ill (AT)’}. In terms of the degree of intransitivity among the AT intransitive verbs, there is no significant difference among the *ma*-verbs, *<um>*-verbs, and Ø-verbs. The selection of the intransitive AT markers is mainly idiosyncratic.

Table 2.2 shows that the four types of verbs have a different paradigm for the four trigger markings.

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29 The romanization for the male name *ofad* is “Ofad”. The romanization spelling for the lateral fricative /l/ is “d”. In this study, we follow this conventional usage in our glossing and translation.
Table 2.2. Morphological paradigm of Amis four verb types (mainly adapted from Tsi-hsiu Liu 1999 and Wu 2006)

<table>
<thead>
<tr>
<th>Verb type</th>
<th>Actor Trigger (AT)</th>
<th>Patient Trigger (PT)</th>
<th>Location Trigger (LT)</th>
<th>Instrument Trigger (IT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>mi</em>-type</td>
<td><em>mi-</em></td>
<td><em>ma-, -ən</em></td>
<td><em>pi-...-an</em> (mi-...an)</td>
<td><em>sa-pi-</em></td>
</tr>
<tr>
<td><em>ma</em>-type</td>
<td><em>ma-</em></td>
<td><em>ka-..., -ən</em></td>
<td><em>ka-..., -an</em></td>
<td><em>sa-ka-</em></td>
</tr>
<tr>
<td><em>&lt;um&gt;</em>-type</td>
<td><em>&lt;um&gt;</em></td>
<td>*ma-, -ən, <em>&lt;um&gt;</em>-...-an</td>
<td><em>ka-...</em>&lt;um&gt;*-...-an</td>
<td><em>sa-ka...</em>&lt;um&gt;*-...</td>
</tr>
<tr>
<td>Ø-type</td>
<td>Ø</td>
<td>---</td>
<td><em>ka-..., -an</em></td>
<td><em>sa-ka-</em></td>
</tr>
</tbody>
</table>

Examples in (2.5) for *mi*-type verbs illustrate the trigger paradigm.

(2.5) a. **mi-?ałup** ku kapah tu vavuy.
    AT.NPST-hunt T young.man ACC pig
    ‘A young man hunts/is hunting/will hunt a pig.’

b. **ma-?ałup** nu kapah ku vavuy.
    PT.NFUT-hunt NOM young.man T pig
    ‘A young man hunts/hunted a pig.’

c. **?ałup-ən** nu kapah ku vavuy.
    hunt-PT.FUT NOM young.man T pig
    ‘A young man will hunt a pig.’

d. **pi-?ałup-ən** nu kapah kura lutuk tu vavuy.
    LT-hunt-LT NOM young.man T that mountain ACC pig
    ‘A young man hunts a pig in that mountain.’

e. **sa-pi-?ałup** nu kapah ku ?iluc tu vavuy.
    IT-hunt-IT NOM young.man T spear ACC pig
    ‘A young man hunts a pig with a spear.’

Note that there are two PT forms which carry different tense and aspect information, such as *ma-?ałup* ‘hunt (PT.NFUT)’ in (2.5b) and *?ałup-ən* ‘hunt (PT.FUT)’ in (2.5c).

2.1.3 Tense, aspect, and mood
The TAM system in Formosan languages is generally understood to demonstrate a two-way contrast of future vs. non-future (also known as realis vs. irrealis) (see Ogawa & Asai 1935; Tsuchida 1976, 1980; Lillian Huang 1995a, 2000b, 2000c; Zeitoun 1996,

30 This gap results from the fact that the Ø-marked AT verbs are intransitive. For instance, it is impossible to have any PT form for the Ø-type AT verb *tayra* ‘go (AT), such as *ma-tayra* and *tayra-ən*.
This future/non-future dichotomy is attested in the Mayrinax Atayal and Tsou. However, Amis manifests a complicated situation in that it demonstrates a past/non-past dichotomy in addition to the future/non-future dichotomy. In Amis, tense and aspect information is indicated by an AT/PT marker and/or other grammatical marking(s) rather than having independent tense and aspect marking (TAM) (cf. Wu 1994, 2006). As shown in Table 2.3, the PT markers ma- and -ən/ka-...-ən are portmanteau morphs and show a two-way contrast of future (ma-) vs. non-future (-ən/ka-...-ən).

Each of the mi-type, ma-type, and <um> type verbs can be attached with two different PT markers to express the future/non-future contrast. For example, the PT suffix -ən shows that the event will take place in the future, as in (2.6a). The PT prefix ma- indicates that the action happened, happens (frequently) or is happening, as in (2.6b).

(2.6) a. laʔup-ən nura wacu kura kayin. chase-PT.FUT NOM.that dog T.that girl ‘That dog will chase that girl.’

   b. ma-laʔup nura wacu kura kayin. PT.NFUT-chase NOM.that dog T.that girl ‘That dog chased/chases/is chasing that girl.’

On the other hand, the AT verbs are interpreted as carrying present or future tense when there is no time adverb or aspecual marker. The AT verbs are given a past tense

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31 Thanks to Paul Jen-kuei Li for reminding me of this future/non-future dichotomy in the previous studies (personal communication, March 30, 2011).

32 In Dong-hsin dialect, there is no corresponding non-future tensed PT form for the ma-type verbs. However, the PT marker maka- of ma-type verbs (e.g., ma-ulah ‘like (AT)’/maka-ulah ‘like (PT)’) can be found in other dialects of Central Amis. But my language consultants of Dong-hsin dialect do not accept this PT form of ma-type like *maka-ulah ‘like (PT)’. They indicate that the correct form should be an LF form for the ma-type verbs like ka-ulah-an ‘like (LT)’.
interpretation only when it co-occurs with a postverbal particle *tu* or it is prefixed with a perfective marker *na-.* Zeitoun et al. (1996) state that Amis AT markers are related to non-past events. Thus, the AT paradigm shows a past vs. non-past contrast. Wu (2006:117–122) also observes that each of the four AT markers is associated with a particular TAM interpretation, which involves a non-past event, as shown in Table 2.4.

Table 2.4. TAM interpretations of Amis verbs affixed by different AT markers. (adapted from Wu 2006:118)

<table>
<thead>
<tr>
<th>Verb type</th>
<th>TAM Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>mi</em>- type</td>
<td>on-going or future</td>
</tr>
<tr>
<td><em>ma</em>- type</td>
<td>on-going</td>
</tr>
<tr>
<td>&lt;um&gt; type</td>
<td>on-going</td>
</tr>
<tr>
<td>Ø type</td>
<td>on-going or future</td>
</tr>
</tbody>
</table>

All the four AT trigger markers are also used to express factual and/or habitual events, as shown in (2.7)–(2.10).

(2.7) **mi-la?up kura a wacu tura kayin (turumiamial).**
AT.NPST-chase T.that LIG dog ACC.that girl every.day
‘That dog chases that girl (every day).’

(2.8) **r<um>aliw ci sawma lipahak (turumiamial).**
sing<AT.NPST> T Sawma AT.happy every.day
‘Sawma sings happily (every day).’

(2.9) a. **ma-talaw kisu tu wacu.**
AT.NPST-be.afraid 1S.T ACC dog
‘You are afraid of a dog.’

b. **ma-tayal ci mama aku i umah (turumiamial).**
AT.NPST-work T father 1S.POSS OBL field every.day
‘My father works in the field (every day).’

(2.10) a. **salunjan ci ipay (turumiamial).**
AT.NPST-beautiful T 1pay every.day
‘Ipay is beautiful (every day).’

b. **tayra ci aki i takaw (turumiamial).**
AT.NPST-go T Aki OBL Kaohsiung every.day
‘Aki goes to Kaohsiung (every day).’

It should be noted that, however, the temporal interpretations of the verbs affixed with the two AT markers *mi-* and *<um>*, are mainly context-dependent. The TAM information as
postulated by Wu (2006) is overridden if the context favors a particular TAM interpretation, as shown in (2.11) and (2.12).

(2.11) a. **mi-laʔup** kura wacu tura kayin inacila.
    AT-chase T.that dog ACC.that girl yesterday
    ‘That dog chased that girl yesterday.’

b. **mi-laʔup** kura wacu tura kayin anini.
    AT-chase T.that dog ACC.that girl now
    ‘That dog is chasing that girl now.’

c. **mi-laʔup** kura wacu tura kayin anuʃavak.
    AT-chase T.that dog ACC.that girl tomorrow
    ‘That dog will chase that girl tomorrow.’

(2.12) a. **r<um>aliw** ci sawma inacila.
    sing<AT> T Sawma yesterday
    ‘Sawma sang yesterday.’

b. **r<um>aliw** ci sawma anini.
    sing<AT> T Sawma now
    ‘Sawma is singing now.’

c. **r<um>aliw** ci sawma anuʃavak.
    sing<AT> T Sawma tomorrow
    ‘Sawma will sing tomorrow.’

In daily conversation, these verbs are assigned with different temporal interpretations based on the contexts even without time adverbs.

Regarding the TAM interpretations for the AT verbs affixed with *ma*- and Ø- affixes, the on-going reading applies only to the dynamic AT *ma*-type verbs (e.g., *ma-vutiʔ* ‘sleep (AT)’ and *ma-tayal* ‘work (AT)’) and Ø-type verbs (e.g., *tayra* ‘go (AT)’ and *tayni* ‘come (AT)’, but not to the stative AT *ma*-type and Ø-type verbs, as illustrated in (2.13) and (2.14). Note that the future tense interpretation can be only obtained in the dynamic Ø-marked AT verbs, such as *tayra* ‘go (AT)’ in (2.13b).

(2.13) **Dynamic AT verbs:**

a. **ma-vutiʔ** ci ina isu.
    AT.NPST-sleep T mother 2S.POSS
    ‘Your mother is sleeping/*will sleep.’
b. tayra ci aki i vakų.
   AT.NPST-go T Aki OBL Fengbin.33
   ‘Aki is going to/will go to Fengbin.

(2.14) Stative AT verbs:
   a. ma-vana? kaku.
      AT.NPST-know 1S.T
      ‘I know/*am knowing/*will know.’
   b. fančal ci ipay a ci avas.
      AT.NPST-good T Ipay CONJ T Avas
      ‘Ipay and Avas are good/*are being good/*will be good.’

A morphological device (that is, partial reduplication) is also used to express a future event.34 The partial reduplication is composed of the first consonant of the verb stem and an invariant low vowel /a/, such as ma-, ra-, ma-, and ta- in (2.15). The partial reduplication discussed above is the Ca-reduplication in the Austronesian literature (cf. Blust 1998 and Laura Chang 1998). Amis speakers use verbs with Ca-reduplication in sentences like (2.15) when they have an intention to do something before they speak or when the event will happen.

(2.15) a. ma-mi-la?up kura wacu tura kayin.
      FUT-AT-chase T.that dog ACC.that girl
      ‘That dog is about to chase that girl.’
   b. ra-r<um>ańw ci sawma.
      FUT-sing<AT> T Sawma
      ‘Sawma is about to sing.’

33 The Chinese name for the place name vakų is 豐濱 ‘Fengbin’, which is the biggest town near the Dong-hsin village.
34 In Wu’s (2006:124–126) analysis, Ca-reduplication is treated as an irrealis mood in Amis, which ‘can either express a not-yet happening event/state in the future or non-happening event/state in the past.’ Her data are as follows:

(2.1) a. pa-palu-on ni sᵃʳᵃ Ø-ci kuyu. (Wu 2006:126, glosses mine)
      RED-beat-PT NOM Sera T Kuyu
      ‘Sera will beat Kuyu.’
   b. ma-mi-nanum kaku, mi-tapaȚ kisu. (Wu 2006:126, glosses mine)
      RED-AT-drink 1S.T AT.NPST-call 2S.T
      ‘When I was about to drink water, you called (me). (So I didn’t drink.)

The data can still be explained in terms of the future tense, especially (2.1a). The dividing line between irrealis mood and future tense seems to be unclear in Amis.
c. **ma-ma-vuti? ci mama aku.**
   FUT-AT-sleep T father 1S.POSS
   ‘My father is about to sleep.’

d. **ta- tayra ci aki i takaw.**
   FUT-AT-go T Aki OBL Kaohsiung
   ‘Aki is about to go to Kaohsiung.’

In addition, there is a prefix **a-** for indicating AT-marked future events.

(2.16) 

a. **a-mi-la?up kura wacu tura kayin (anuhuni).**
   FUT-AT-chase T:that dog ACC:that girl later
   ‘That dog will chase that girl later.’

b. ***a-la?up-an nura wacu kura kayin (anuhuni).**
   FUT-chase-PT NOM:that dog T:that girl later

The prefix **a-** is used to express an event which will take place in the near-future and usually co-occurs with the time adverb **anuhuni** ‘later’. The examples in (2.16) show that this future marker **a-** can only be attached to an AT verb, not to a non-AT (NAT) verb.

There is also one grammatical particle **tu** occurring immediately after the verb, indicating perfective aspect (or past tense) in Amis. The occurrence of **tu** can denote an event that has been ended or an event that has occurred, as illustrated in (2.17).

(2.17) 

a. **mi-la?up tu kura wacu tura kayin.**
   AT-chase ASP T:that dog ACC:that girl
   ‘That dog chased/has chased that girl.’

b. **rim<um>a?iw tu ci sawma.**
   sing<AT> ASP T Sawma
   ‘Sawma sang/has sung.’

c. **ma-vuti? tu ci mama aku.**
   AT-work ASP T father 1S.POSS
   ‘My father slept/has slept.’

d. **tayra tu ci aki i takaw.**
   AT-go ASP T Aki OBL Kaohsiung
   ‘Aki went/has gone to Kaohsiung.’
Note that the grammatical particle *tu* carries a communicative function other than its perfective aspect marking. It is commonly used to signal a change of state. The examples in (2.18) show that the speaker has noticed the change of state or has made the change himself.

(2.18)

a.  ma-ural  **tu**.
   *AT-rain*  ASP
   ‘(It) has started to rain.’

b.  pakasu?olin  **tu**  kaku  tisuwanan.
   *AT-believe*  ASP  1S.T  2S.ACC
   ‘I have come to believe you.’

c.  ma-vuti?  **tu**  kunini  a  wawa.
   *AT-sleep*  ASP  T:th:is  LIG  child
   ‘This child has fallen asleep.’

The experiential perfect aspect (or realis mood) is marked by a prefix *na*- in Amis. The marking of *na*- indicates that the event has happened before. The examples are as follows:

(2.19)

a.  tayra  **tu**  kura  wawa  i  taypak.
   *AT-go*  ASP  T:th:at  child  OBL  Taipei
   ‘That child went/has gone to Taipei.’

b.  **na**-tayra  kura  wawa  i  taypak.
   *PERF-AT-go*  T:th:at  child  OBL  Taipei
   ‘That child has been to Taipei (before).’

2.1.4 Prenominal marking system

Noun phrases in Amis are always preceded by a particle, such as *u, ku, tu, nu,* and *i* for common nouns and *ci/ca* for proper names. These particles have been treated as Case

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35 According to Li and Thompson (1981), the Chinese grammatical particle *le* (了) is also used either as a perfective aspectual marker or as a mood marker to indicate a change of state, as shown in (2.ii).

(2.ii)  Chinese:

a.  他  去  了  巴黎
   ta  chu  le  bali.
   3S  go  ASP  Paris
   ‘He has gone to Paris.’

b.  他  哭  了
   ta  ku  le.
   3S  cry  ASP
   ‘He cried/has cried.’ (Note: he has just started crying.)
markers in the Amis literature. In this study, they are called prenominal markers rather than the Case markers because these markers contain more than just Case information, such as noun classification (proper noun/common noun) and number (singular/plural).\[36\]

(2.20) a. mi-vutiŋ kʊ kapah i liyar.
\(\text{AT.NPST-go.fishing} \quad \text{T} \quad \text{young.man} \quad \text{OBL} \quad \text{sea} \)
‘A young man goes/is going/will go fishing at sea.’

b. mi-vutiŋ ci ofał i liyar.
\(\text{AT.NPST-go.fishing} \quad \text{T} \quad \text{Ofad} \quad \text{OBL} \quad \text{sea} \)
‘Ofad goes/is going/will go fishing at sea.’

c. mi-vutiŋ ca ofał i liyar.
\(\text{AT.NPST-go.fishing} \quad \text{T.PL} \quad \text{Ofad} \quad \text{OBL} \quad \text{sea} \)
‘Ofad and his people go/are going/will go fishing at sea.’

In (2.20) the preceding marker varies according to the properties of the trigger NP it co-occurs with, such as \textit{kʊ} for the common noun \textit{kapah} ‘young man’ in (2.20a), \textit{ci} for indicating that the proper noun \textit{Ofad} is singular in (2.20b), and \textit{ca} for indicating that the proper noun \textit{Ofad} is plural in (2.20c). Note that the singular and plural meanings of the proper nouns (e.g., ‘Ofad’ and ‘Ofad and his people’) are determined by the articles \textit{ci} and \textit{ca}, not by the form of the proper nouns themselves.

Inspired by Chang et al.’s (1998) pioneering study on Kavalan, Tsai-hsiu Liu (1999) proposes that what have been traditionally viewed “Case” markers in Amis are better analyzed as morphological complexes, which can be further decomposed into a trigger marker and a noun classifier, as illustrated in Table 2.5 and Figure 2.1.

Table 2.5. Amis trigger/Case marking system (adapted from Lillian Huang 1995b; Tsai-hsiu Liu 1999; Wu 2006).

<table>
<thead>
<tr>
<th>Marking</th>
<th>(Trigger)</th>
<th>Nominative</th>
<th>Accusative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Noun</td>
<td>k-</td>
<td>n-</td>
<td>t-</td>
</tr>
<tr>
<td>Personal Proper Noun</td>
<td>Ø</td>
<td></td>
<td>-an</td>
</tr>
</tbody>
</table>

\[36\] In this respect, the Amis prenominal article can be analyzed as a determiner inflected for Case, whose function is to co-occur with NPs to express a wide range of semantic differences, such as number and quantity.
Figure 2.1. Amis noun classifier system (adapted from Huang 1995b; Tsai-hsiu Liu 1999; Wu 2006).

The complete set of the Amis prenominal markers are listed in Table 2.6 below:

<table>
<thead>
<tr>
<th>New Analysis (Liu &amp; Tonoike in preparation)</th>
<th>Predicate (Pred)</th>
<th>Trigger (T)</th>
<th>Nominative (Nom)</th>
<th>Accusative (Acc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional analysis (e.g., Wu 1994 and Lillian Huang 1996)</td>
<td>Neutral (Neu)</td>
<td>Nominative (Nom)</td>
<td>Genitive (Gen)</td>
<td>Accusative (Acc)</td>
</tr>
<tr>
<td>Common noun</td>
<td>u</td>
<td>ku</td>
<td>nu</td>
<td>tu</td>
</tr>
<tr>
<td>Proper noun</td>
<td>Singular</td>
<td>ci</td>
<td>ci</td>
<td>ni</td>
</tr>
<tr>
<td></td>
<td>Plural</td>
<td>ca</td>
<td>ca</td>
<td>na</td>
</tr>
</tbody>
</table>

The predicate markers $u$, $ci$, $ca$ occur with the predicate NPs. In the previous studies, Wu (1994) and Lillian Huang (1996) treat them as “neutral Case markers”. However, they carry information other than Case (e.g., number and noun class). The particles $kulci/ca$ are used to mark the prominent NP (e.g., trigger) in a clause. Traditionally, the pronominal NPs are treated as subjects and, hence, $kulci/ca$ as nominative Case markers. However, as discussed in Section 2.1.2, the particles $kulci/ca$ are better analyzed as trigger markers rather than the nominative Case markers.

The nominative markers $nulnilna$ are used to indicate non-trigger actors. They have been called genitive markers in the literature (e.g., Lillian Huang 1995b, 1996; En-hsing Liu 2003; Wu 1994; among others), as the same forms are also used to express possessors in possessive constructions. For instance, the marker $nu$ is used to indicate a non-trigger actor $nu$ $kapah$ ‘a young man (NOM)’ in (2.21a) and a possessive NP $nu$ $paŋcah$ ‘of Amis’ in (2.21b).
In the genitive analysis, the construction with a “genitive” non-trigger actor must be considered to be a nominal construction, with the NAT verbs being analyzed as verbal nouns (Starosta, Pawly & Reid 1982), similar to English examples such as *his arrival at the airport. Note that in English, the genitive NP cannot occur as the subject of a verbal construction, such as *his arrived at the airport.

I argue, however, that the relationship between the two usages (prenominal markers for possessive NPs and non-trigger actors) is homophony, not polysemy, as there is evidence to suggest that NAT sentences are not nominal constructions. In Amis, the verbal elements in a nominal construction (e.g., pseudo-clefts) generally take different morphological marking from their verbal counterparts in the simple declarative sentences. For example, the verb ma-kaʔon in the declarative sentence like (2.22a) is obligatorily suffixed with a nominalizer -ay when it occurs in a nominalized clause of a pseudo-cleft as shown in (2.22b).

(2.22) Amis:

a. ma-kaʔon nura wawa ku vutiŋ.  
PT.NFUT-eat NOM.that child T fish  
‘That child ate/eats/is eating a fish.’

b. [NP u vutiŋ ] [NP ku ma-kaʔon-ay nura wawa ].  
PRED fish T PT.NFUT-eat-NMZ NOM.that child  
‘What that child ate/eats/is eating is a fish.’

However, as can be seen in the examples above, the verb in a simple declarative NAT sentence like (2.22a) is not suffixed by -ay. Thus, the relevant construction is verbal, and, accordingly, the premoninal markers nu-nilna cannot be treated as genitive markers.

Instead, they are better analyzed as nominative markers. Following Liu & Tonoike (in preparation), the actor is taken to be an argument occupying a position that is assigned
nomina{tive} Case. The nominative analysis for the non-trigger actors is based on the fact that the position of the actor in the non-actor trigger (NAT) construction is fixed (always following the sentence-initial predicate) and consistently preceded by the marker nu, ni or na. Furthermore, it can account for the fact that actor NP carries subject properties.\textsuperscript{37} For instance, there is no subject control but actor control in Amis. As will be discussed in Section 3.2.1.1, the actor NP in the matrix clause controls the reference of the missing argument in the embedded clause. The synchronic analysis of Amis prenominal markers does not claim that nominative prenominal markers and genitive prenominal markers were historically separate, homophonous morphemes. Rather, I propose that the nominative markers are a result of reanalysis. It is quite likely that NAT sentences were historically nominal, as proposed by Starosta, Pawley & Reid (1982), and have been reanalyzed as a verbal construction. Such reanalysis is not uncommon crosslinguistically. For example, Japanese nominative marker -\textit{ga} was originally a genitive marker in old Japanese.\textsuperscript{38}

It should be noted that not all researchers who treat \textit{nu/nai/na} as genitive markers consider NAT sentences to be nominal.\textsuperscript{39} Rather, some of them treat the genitive markers to be polysemous, marking possessors as well as ergative actors. Under the ergative analysis, the dyadic PT sentences are treated as the canonical transitive construction, with the trigger NP marked as absolutive and the genitive NP, ergative. Meanwhile, the dyadic AT sentences are taken to be an intransitive construction (that is, antipassive construction) in which the trigger actor is regarded as absolutive and the patient, oblique. Accordingly, the accusative markers in the present study (i.e., \textit{tu/ci...am/ca...an}) are analyzed as oblique markers in some previous studies which treat Amis as an ergative language, such as Tsukida (1993), Wu (1994, 2006) and Cheng-chuen Kuo (2008).\textsuperscript{40}

\textsuperscript{37} To be exact, the subject properties distribute over trigger and actor in Amis and other Formosan languages.
\textsuperscript{38} Thanks to Yuko Otsuka for bringing this point to my attention (personal communication, March 8, 2011).
\textsuperscript{39} Meanwhile, some studies (e.g., Starosta, Pawley & Reid 1982 and Starosta 2002) show that there is some overlap between the nominal analysis and ergative analysis. In such analysis, the actor in an NAT sentence is considered to be simultaneously a genitive NP in a nominal construction and an ergative NP in a canonical transitive construction of an ergative language.
\textsuperscript{40} Also see Rau & Grimes (1994), Lillian Huang (1994), Liao (2004), and others for the analysis treating other Formosan languages (mainly, Squliq Atayal) as an ergative language.
However, Tsai-hsiu Liu (2008) has shown that Amis is better analyzed as an accusative language rather than an ergative language because dyadic AT sentences are no less transitive than dyadic PT sentences based on Hopper & Thompson’s (1980) criteria for semantic transitivity. In addition, the present study also demonstrates that PT sentences have a more limited distribution than AT sentences and therefore, AT is the canonical transitive construction, rather than a derived intransitive construction (i.e., antipassive) (cf. Payne 1982). For instance, the matrix clause and embedded clause cannot be both PT-marked in Amis actor control constructions (cf. Section 3.2.1.1). In contrast, no distributional restriction of AT-marked clauses is attested in Amis actor control. The distributional facts suggest that AT sentences cannot be regarded as antipassive constructions in Amis.41 Therefore, Amis is better treated as an accusative language in which both dyadic AT and dyadic PT verbs are treated as transitive verbs which assigns accusative Case to their patients (or themes).

Let’s look at the particles for the common nouns to demonstrate the differences among these markers discussed above.

(2.23)  

a. Amis: Equational sentence

| u  | ɲayŋay  | ciŋra. |
| PRED | Hakka42 | 3S.T |

‘He is a Hakka.’

b. AT monadic pattern:

tayra  tu  ku  vaʔinayan  i  taypak.  
| AT.go  | ASP  | T  | man  | OBL  | Taipei  |

‘A man went/has gone to Taipei.’

c. AT dyadic pattern:

mi-paluʔ  ku  vaʔinayan  tu  wawa.  
| AT.NPST-beat  | T  | man  | ACC  | child  |

‘A man beats/is beating/will beat a child.’

---

41 In fact, the restricted usage of the PT-marked sentences in the control operation is also found in Mayrinax Atayal and Tsou.
42 The Hakka people (‘客家人’ in Mandarin Chinese) speak the Hakka language and belong to a subgroup of the Han Chinese people. In Taiwan, Hakka people comprise about 15-20% of the population and are descended largely from Guangdong, mainland China. Nowadays they form the second largest ethnic group in Taiwan.
d. PT dyadic pattern:
PT: NFUT-beat NOM man T child
‘A man beat/beats a child.’

e. LT dyadic pattern:
pi-cilah-an nu va?inayan tu kuwa ku kur.
LT: pickle-LT NOM man ACC papaya T urn
‘A man pickles papayas in an urn.’

f. IT dyadic pattern:
sa-pi-vaca? nu va?inayan ku savun tu riku.
IT: PI-wash NOM man T soap ACC clothes
‘A man washes clothes with a soap.’

The particle u precedes a predicate nominal, such as u  ‘Hakka (PRED)’ in (2.23a).
The trigger NPs are consistently preceded by ku, such as ku va?inayan ‘a man (T)’ in
(2.23b)–(2.23c), ku wawa ‘a child (T)’ in (2.23d), ku kur ‘an urn (T)’ in (2.23e), and ku
savun ‘a soap (T)’ in (2.23f). In (2.23d)–(2.23f), the non-trigger actor NP va?inayan
‘man’ is preceded by nu. Note that the actor va?inayan ‘man’ in both AT sentences
(2.23b) and (2.23c) cannot be marked by nu. According to Liu & Tonoike (in
preparation), the nominative Case marker (assigned to the actor NP) is suppressed when
it co-occurs with a trigger marker.43 The accusative Case marker tu always occurs with a
non-trigger patient (or theme), such as tu wawa ‘a child (ACC)’ in (2.23c), tu kuwa ku
papaya (ACC)’ in (2.23e), and tu riku ‘clothes (ACC)’ in (2.23f). The same situation
holds for oblique NPs. For instance, the oblique NP is normally preceded by a particle i,
such as the location adverb i liyar ‘at sea’ in (2.20). When the location NP kur ‘urn’ in
(2.23e) is highlighted, the oblique marker is suppressed due to presence of the trigger

43 This co-occurrence constraint is also found in Japanese between certain Case markers (e.g., ga for subject
and o for object) and some focus markers (e.g. wa for topic, mo ‘also’, and shika ‘only’), as shown in (2.iii).

(2.iii) Japanese: Co-occurrence restriction of *ga-wa (Lee 2002: 651)
a.* Taroo ga wa kita yo.
   Taro NOM TOP came FP
   ‘As for Taro, he has come.’
b. Taroo wa kita yo.
   Taro TOP came FP
   ‘As for Taro, he has come.’
marker *ku*. Though there is a gap of the oblique instrument marker in Amis, we assume that the same situation holds for the highlighted instrument *savun* ‘soap’ in (2.23f).

### 2.1.5 Personal pronominal system

Table 2.7 lists the Amis personal pronouns, each of which has paradigmatic variations for trigger, nominative Case, and accusative Case.

<table>
<thead>
<tr>
<th></th>
<th>Trigger</th>
<th>Nominative</th>
<th>Accusative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st person</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>singular</td>
<td>kaku</td>
<td>aku</td>
<td>takuwanan</td>
</tr>
<tr>
<td>2nd person</td>
<td>kisu</td>
<td>isu</td>
<td>tisuwanan</td>
</tr>
<tr>
<td>singular</td>
<td>ciŋra</td>
<td>nira</td>
<td>ciŋranan</td>
</tr>
<tr>
<td>3rd person</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>singular</td>
<td>kita</td>
<td>ita</td>
<td>kitanan</td>
</tr>
<tr>
<td>1st person</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>plural inclusive</td>
<td>kami</td>
<td>niyam</td>
<td>tamiyanan</td>
</tr>
<tr>
<td>plural exclusive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd person</td>
<td>kamu</td>
<td>namu</td>
<td>tamuanan</td>
</tr>
<tr>
<td>plural (2P)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd person</td>
<td>caŋa</td>
<td>naŋra</td>
<td>caŋraan</td>
</tr>
<tr>
<td>plural (3P)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following examples illustrate the paradigm of the third person singular pronoun:

(2.24)  

a. AT monadic pattern:

\[
\text{ma-lasan tu ciŋra.} \\
\text{AT-get.drunk ASP 3S.T} \\
\text{‘He got drunk.’}
\]

b. AT dyadic pattern:

\[
\text{mi-sakasak ku huwak ciŋraan/ciŋranan.} \\
\text{AT-NPST-tread.on T duck 3S.ACC} \\
\text{‘A duck treads/is treading/will tread on him.’}
\]

---

44 Amis makes a distinction between the inclusive and exclusive first person plural pronouns, such as the trigger first person plural inclusive *kita* and exclusive *kami*. The inclusive *kita* ‘we (incl.)’ includes the audience (or listener), while the exclusive *kami* ‘we (excl.)’ does not. In order to avoid lengthy translation, I do not mark the distinction in the translation, but the contrast is always distinguished in the glossing.
c. PT dyadic pattern:
sakasak-ɔn nira ku huwak.
tread.on-PT,FUT 3S,NOM T duck
‘He will tread on a duck.’
d. LT dyadic pattern:
pi-cilah-an nira tu kuwaŋ ku kurəŋ.
LT-pickle-LT 3S,NOM ACC papaya T urn
‘He pickles papayas in an urn.’
e. IT dyadic pattern:
sa-pi-vacaʔ nira ku savun tu rikuŋ.
IT-PT-wash 3S,NOM T soap ACC clothes
‘A man washes clothes with a soap.’

In the AT sentence (2.24a), the trigger form of the third person singular pronoun is cigra, as it is the trigger NP. When it is the actor in the non-AT sentences like (2.24c)–(2.24e), the nominative form nira is used. The accusative form of the third person singular pronoun can be either cigraan or cigranan, as shown in (2.24b), and is used when it is a non-trigger patient.

2.2 A sketch grammar of Mayrinax Atayal

This section provides the basics of the Mayrinax Atayal grammar, which are relevant to our discussion on Mayrinax Atayal complementation in Chapter 4. For detailed information on the Atayal grammar, see Egerod (1965, 1966), Wolff (1973), Tseng (1987), Starosta (1988, 1999), Der-hwa Rau (1992), Lillian Huang (1993, 1995a, 2000a, 2000d, 2001, 2002), Rau & Grimes (1994), Li (1995), Liao (2004, 2005), and many others. The data come from the author’s fieldwork in the Yuandun (圓墩) community of Mayrinax Atayal. Mayrinax Atayal is an extremely conservative language among the languages of the Atayalic group. Compared to other Atayalic languages, this language preserves many grammatical particles (e.g., prenominal markers and clause linkers). Not only does it preserve many archaic features, but it also has some language-specific phenomena. For instance, Mayrinax Atayal has a distinction between male and female forms on some vocabulary items, mainly content words. Li’s (1982) study lists 107 items which have the F(emale)/M(ale) distinction, such as hapuy hapuniq ‘fire(F/M)’, βuluq/βuliquw ‘star (F/M)’, kurus/kuus ‘rock (F/M)’, etc. But the lexical distinctions
between male and female have no influence on the grammatical structure. That is, no grammatical differences are related to gender in Mayrinax Atayal.

2.2.1 Word order

Like most of other Formosan languages, Mayrinax Atayal is a predicate-initial language. The examples are given below:

Chief T father-1S.POSS
‘My father is a chief.’

(2.26) a. mi-taal cu? mama ku? ulaqi?.
AT.NFUT-see ACC uncle T child
‘The child saw/sees/is seeing Uncle.’

b. mi-taal ku? ulaqi? cu? mama?.
AT.NFUT-see T child ACC uncle
‘The child saw/sees/is seeing Uncle.’

swim<AT.NFUT> T child OBL river
‘The child swam/swims/is swimming in the river.’

b. l<um>aŋuy ?i? luliuyŋ ku? ulaqi?.
swim<AT.NFUT> OBL river T child
‘The child swam/swims/is swimming in the river.’

In the equational sentence (2.25), the nominal predicate tawki? ‘chief’ occurs sentence-initially without any prenominal marker. Simple declarative sentences are all verb-initial. However, the AT and NAT sentences have different ordering of NPs. The ordering of NPs in AT sentences is rather flexible, allowing Verb-Actor-Patient as well as Verb-Patient-Actor, as shown in (2.26), and Verb-Actor-Location as well as Verb-Location-Actor, as shown in (2.27). However, the preferred orders for the AT sentences are Verb-Patient-Actor and Verb-Location-Actor, respectively.

---

45 In Mayrinax Atayal phonemic system, there are three vowels and nineteen consonants (cf. Li 1992; Lillian Huang 1995a). The three vowels are /i, a, u/. The nineteen consonants include: /p, b, m, w, t, r, l, n, c, z, s, y, k, y, x, η, q, h, /l/. In the existing literature of Mayrinax Atayal, the conventional symbols for the bilabial fricative /β/ and velar fricative /h/ are “b” and “g”, respectively. However, the conventional symbol “b” corresponds to the implosive bilabial stop “ɓ” in Tsou. To avoid possible confusion, the present study adopts IPA symbols instead of the conventional symbols.
In contrast, NAT sentences have a relatively fixed word order. Almost all the NAT verbs are directly followed by an actor, not by other argument(s), as shown in (2.28)–(2.29).

    see-LT.NFUT NOM child T uncle
    ‘The child sees/saw Uncle.’

    see-LT.NFUT T uncle NOM child

    swim-LT.NFUT NOM child T river
    ‘The child swims/swam in the river.’

    swim-LT.NFUT T river NOM child

Based on the above information, Mayrinax Atayal tends to have a trigger-final word order.

2.2.2 Trigger system

The verb complex can consist of a root, a trigger marker, a bound tense/aspect marker, and a bound personal pronoun. Like Amis (and other Formosan languages), Mayrinax Atayal has a trigger system, in which the verbal morphology indicates the thematic role of the most prominent NP of the clause. The Mayrinax trigger system is shown in Table 2.8.

<table>
<thead>
<tr>
<th>Verbal morphology</th>
<th>Actor Trigger (AT)</th>
<th>Patient Trigger (PT)</th>
<th>Location Trigger (LT)</th>
<th>Beneficiary/Instrument Trigger (B/IT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>marker</td>
<td>m-, &lt;sum&gt;, ma-&lt;sup&gt;46&lt;/sup&gt;, Ø</td>
<td>-un</td>
<td>-an</td>
<td>si-</td>
</tr>
</tbody>
</table>

The Mayrinax verbal morphology has a set of four trigger markers: Actor Trigger (AT), Patient Trigger (PT), Location Trigger (LT), and Beneficiary/Instrument Trigger (B/IT)<sup>47</sup>. Owing to semantic restrictions, many verbs cannot select the full set of the trigger

<sup>46</sup>The AT prefix <i>ma</i>- normally has two alternative pronunciations <i>m-</i> or <i>ma-</i>. For example, one may hear two AT forms <i>ma-nubwar</i> and <i>m-nubwa</i>r for the verb stem <i>nubwar</i> ‘drink’.

<sup>47</sup>The prefix <i>si-</i> is used to mark a trigger beneficiary/instrument argument in the clause. In the Austronesian literature, a general term “referential trigger” is often used to cover both beneficiary and instrument triggers.
markers. Only some verbs are able to take the full set of the four triggers, such as (?) aras ‘fetch’ in (2.30).

(2.30)  
a. \text{m-aras cu? quasia? ku? makurakis.} \quad \text{AT.AFUT-fetch ACC water T girl}  
\text{‘The girl fetched/fetches/is fetching water.’}  

b. \text{ras-un\textsuperscript{48} nku? makurakis ku? quasia?.} \quad \text{fetch-PT.AFUT NOM girl T water}  
\text{‘The girl fetched/fetches/is fetching the water.’}  

c. \text{ras-an nku? makurakis cu? quasia? ku? \textit{\beta}intan\textsuperscript{49} ka hani.} \quad \text{fetch-LT.AFUT NOM girl ACC water T water.bucket LIG this}  
\text{‘This girl fetched/fetches water in this water bucket.’}  

d. \text{si-?aras nku? makurakis cu? quasia? ku? \textit{\beta}intan ka hani.} \quad \text{IT.AFUT-fetch NOM girl ACC water T water.bucket LIG this}  
\text{‘This girl fetched/fetches water with this water bucket.’}  

d’. \text{si-?aras nku? makurakis cu? quasia? ku? mamaliku-nia?.} \quad \text{BT.AFUT-fetch NOM girl ACC water T husband-3S.POSS}  
\text{‘This girl fetched/fetches water for her husband.’}  

When occurring without any additional morpheme, a verb affixed with a trigger marker can be interpreted as a non-future event which carries past tense, present (progressive), habitual, or factive reading depending on the context. As will be discussed in Section 2.2.3, other TAMs are expressed by an additional morpheme.

Note that there are four different AT markers (\textit{m-}, <\textit{um}>, \textit{ma-} and \textit{Ø}). These AT markers are allomorphs which are lexically conditioned. In Mayrinax, each verb selects its AT marker idiosyncratically, such as \textit{m-}uah ‘come (AT)’ with \textit{m-}, \textit{ma-syaq} ‘laugh (AT)’ with \textit{ma-}, \textit{k<um>} at ‘bite (AT)’ with <\textit{um}>, and \textit{palalu}? ‘rock (AT)’ with a null marker. We will refer to the set of verbs that take \textit{m-} as \textit{m-}~type verbs, the set of verbs that take <\textit{um}> as <\textit{um}>~type verbs, the set of verbs that take \textit{ma-} as \textit{ma-}~type verbs, and the set of verbs that take a null marker as \textit{Ø}~type verbs.

\textsuperscript{48} The PT suffix -un attached to the verb (?) aras causes a syllable reduction. The first syllable (?)u- of the stem is deleted in the PT ras-un (*? aras-un* aras-un). The same reduction occurs in the LT verb ras-an (*? aras-an* aras-an). The first syllable reduction of the stem is very common in the process of suffixation in Mayrinax Atayal.

\textsuperscript{49} This is a borrow word from Taiwanese.
2.2.3 Tense, aspect, and mood

The grammatical devices which are responsible for tense, aspect and mood functions are the trigger markers, some grammatical affixes and few grammatical particles. Most of the temporal and aspectual information is expressed on the verbs by means of affixation. The AT and PT markers are portmanteau morphs which blend trigger marking and TAM into single morphemes. In addition to marking the syntactic agreement of the thematic role of the trigger, the Mayrinax trigger markers carry tense and/or aspect information, as summarized in Table 2.9.

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Tense &amp; aspect</th>
<th>Non-future (past tense/present tense)</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>m-type</td>
<td>m-</td>
<td>pa-, ma-</td>
</tr>
<tr>
<td></td>
<td>ma-type</td>
<td>ma-</td>
<td>pa</td>
</tr>
<tr>
<td></td>
<td>&lt;um&gt;-type</td>
<td>&lt;um&gt;</td>
<td>pa</td>
</tr>
<tr>
<td></td>
<td>Ø-type</td>
<td>Ø</td>
<td>pa</td>
</tr>
<tr>
<td>PT</td>
<td>-un</td>
<td></td>
<td>Ca&lt;sup&gt;ii&lt;/sup&gt;-...-un</td>
</tr>
<tr>
<td>LT</td>
<td>-an</td>
<td></td>
<td>Ca-...-an</td>
</tr>
<tr>
<td>B/IT</td>
<td>si-</td>
<td></td>
<td>Ca-</td>
</tr>
</tbody>
</table>

As shown in Table 2.9, Mayrinax temporal and aspectual frame demonstrates a future/non-future dichotomy reflected in the paradigmatic variations of the four trigger markers. Lillian Huang (1995a:147) indicates that “AF (that is, AT) affixes m-, ma-, <um> and Ø may refer to situations either occurring habitually, having occurred, or actually taking place, and thus manifest either habitual, present progressive, or past events.” In addition, Zeitoun et al. (1996) indicate that no overt distinction between present tense and past tense is reflected in the verbs affixed with AT or PT markers in Mayrinax Atayal and other Formosan languages (e.g., Bunun, Paiwan, Puyuma, and Sasiayat). The verbs affixed with a non-future trigger marker can be interpreted as carrying present (progressive) tense or past tense when there is no time adverb or aspectual marker in the sentence. For instance, the AT verb t<um>utig ‘beat (AT)’ in

---

<sup>50</sup> The Ca- prefix is a reduplicated consonant plus an invariant low vowel /a/. The capital C in the Ca-prefix is not a sound symbol but a reduplicated segment of the stem. The reduplicated segments are all consonants, such as c in ca-cbu?-un ‘will hit the target (PT)’, k in ka-kital-an ‘will see (LT)’, and r in ra-xibar ‘will cut (B/IT)’. Therefore, the capital C is used to indicate the reduplicated consonant in Ca-partial reduplication.
(2.31a) and PT verb *tutįŋ-un* ‘beat (PT)’ in (2.31b) have three possible readings: present progressive, past tense, and habitual reading.

(2.31) Mayrinax Atayal; Zeitoun et al. (1996:25; glosses mine)

   beat<AT.NFUT> ACC child T father
   i. ‘Father is beating the child.’
   ii. ‘Father beat (past) the child.’
   iii. ‘Father (usually) beats the child/children.’

   beat-PT.NFUT NOM father T child
   i. ‘Father is beating the child.’
   ii. ‘Father beat (past) the child.’
   iii. ‘Father (usually) beats the child/children.’

Note that the present progressive reading is preferred to the past tense and habitual reading for the non-future AT/PT verbs when the temporal frame of the sentence is unspecified (Zeitoun et al. 1996:26). The present study shows that this future/non-future dichotomy is attested in all the four trigger paradigms, including AT, PT, LT and B/IT, as shown in (2.32)–(2.39).

(2.32) *m*-type AT verb:

a. m-usa? ku? ?ulaqi?.
   AT.NFUT-go T child
   ‘The child went/goes/is going.’

b. ma-?usa? ku? ?ulaqi?.
   AT.FUT-go T child
   ‘The child will go.’

(2.33) *m*-type AT verb:

a. m-aniq cu? quliŋ ku? naɓakis.
   AT.NFUT-eat ACC fish T old.man
   ‘The old man ate/eats/is eating a fish.’

   AT.FUT-eat ACC fish T old.man
   ‘The old man will eat a fish.’

(2.34) *ma*-type AT verb:

a. ma-nuɓuaŋ ?i? mama?.
   AT.NFUT-drink T uncle
   ‘Uncle drank/drinks/is drinking.’
Future tense is expressed by two means: pa/-ma- prefixes for AT forms and Ca-
partial reduplication for NAT forms. The future-tense marker ma- is limited to co-
occurring with several m-type AT verbs, such as ma-?usa? in (2.32b). Otherwise, the prefix pa- is used to mark future tense for an AT verb, as in (2.33b), (2.34b), (2.35b), and (2.36b). In my corpus, there are only two verbs, uah ‘come’ and ?usa? ‘go’, that select ma- to mark a future AT verb. Ca-reduplication is adopted by all NAT verbs to indicate that the event is about to happen or will happen in the future. The Ca-reduplication is a process involving the reduplication of the initial consonant of the stem (C-) and the addition of an invariant vowel (a-), e.g., ta- in ta-tuti-un ‘hit (PT.FUT)’ in (2.37b), ha-in ha-hihip-an ‘kiss (LT.FUT)’ in (3.38b), and na- in na-nuβuax ‘drink (IT.FUT)’ in (2.39b). PT and LT forms keep their PT/LT markers when Ca-reduplication applies, such as ta-tuti-un ‘hit (PT.FUT)’ in (2.37b) and ha-hihip-an ‘kiss (LT.FUT)’ in (2.38b), but in I/BT forms, the trigger prefix si- cannot occur with Ca-reduplication: e.g., na-nuβuax ‘drink (IT.FUT)’ in (2.39b) instead of *si-na-nuβuax.

It is noteworthy that a verb affixed with a perfective marker <in> can be interpreted as either a past tense or perfective event (Lillian Huang 1995a). The examples are as follows:

   AT.NFUT<PERF>go T child OBL Dahu
   ‘The child has been to Dahu.’

b. m<in>-aniq cu? qulih ku? naβakis.
   AT.NFUT<PERF>-eat ACC fish T old.man
   ‘The old man ate/has eaten a fish.’

c. m<in>a-nuβuax ?i? mama?.
   AT.NFUT<PERF>-drink NOM uncle
   ‘Uncle drank/has drunk.’

d. q<um<in>aluap ku? mamaliku.
   hunt<AT.NFUT><PERF> T man
   ‘The man hunted/has hunted.’

   AT.NFUT.rock<PERF> ACC baby T witch
   ‘The witch rocked/ has rocked a child.

f. t<in>utiq ni? yaβa? ?i? yaya?.
   hit<PT.NFUT><PERF> NOM father T mother
   ‘Father hit/has hit Mother.’
      kiss<PERF>-LT.NFUT  NOM  child  T  mother
     ‘The child kissed/ has kissed Mother.’

      NFUT<IT.NFUT.PERF>drink-1S.NOM  ACC  soup  T  bamboo.spoon
     ‘I drank/has drunk soup with a bamboo spoon.’

The AT forms with the perfective marker <in> retain their AT markers, as shown in
m<in> in (2.40a)–(2.40b), m<in>a- in (2.40c), <um>in>in (2.40d), and Ø...<in> in
(2.40e). Note that there is no difference between present perfective and past perfective in
Mayrinax. As long as the action has been finished, it is consistently marked with the
perfective marker <in> no matter whether the action has been done recently or in the past.
The distinction between present perfective and past perfective relies on context and/or
time adverbs available in the sentence, such as sawni? ‘now; just now’ and cuŋa? ‘in the
past’. As for the NAT infix <in> and the circumfix <in>...an, they indicate that the
action has been finished or had been finished in the past. Note that the perfective infix
<in> alone is also indicative of trigger marking (except for LT), such as t<in>utŋ ‘hit
(PT.NFUT.PERF)’ in (2.40f), and n<in>uβuŋ-‘drink (IT.NFUT.PERF)’ in (2.40h).

Only the LT perfective verbs take both perfective <in> and LT marker -an, such as
h<in>ihip-an ‘in (2.40g). According to Lillian Huang (1995a:152), “the infix <in> in
Mayrinax Atayal is not a marker of absolute past tense, but that of relative past”. For
instance, the infix <in> can occur in a future-tensed sentence or in a conditional sentence,
as shown in (2.41)

(2.41)  Lillian Huang (1995a:152; glosses mine):
      AT.NFUT<PERF>-eat  T  father  TOP  AT.FUT-go  ASP  OBL  tomorrow
      ‘Tomorrow after eating, Father will go then.’

The infix <in> in PT and B/IT verbs is better analyzed as a portmanteau morph which blends perfective
marking and trigger marking into a single morpheme, such as t<in>utŋ ‘hit (PT.NFUT.PERF)’ and
n<in>uβuŋ ‘drink (IT.NFUT.PERF)’. The portmanteau usage of the infix <in> in PT and B/IT verbs
might be due to the dropping of the PT suffix -un and B/IT prefix si- in the historical development. This is
evidenced by the fact that the perfective infix <in> and the LT suffix -an both co-exist in the LT verbs,
such as h<in>ihip-an ‘kiss (LT.NFUT.PERF)’.
In addition to the future/non-future dichotomy, Mayrinax has a set of suffixes to signal an event which is not known to have happened when the speakers are talking. Irrealis events are indicated by three suffixes: -ay for AT and LT verbs, -aw for PT verbs, and -ani for IT verbs. For example:

(2.42) a. **m-usa?-ay/m-usal-ay** ku? ?ulaqi?.
   AT-go-IRR T child
   ‘The child might go.’

   AT-eat-IRR ACC fish T old.man
   ‘The old man might eat fish.’

c. **ma-nuβua-ay** ?i? mama?.
   AT-drink-IRR T uncle
   ‘Uncle might drink.’ or ‘Uncle could drink.’

d. q<um>alup-ay ku? mamaliku.
   hunt <AT>-IRR T man
   ‘The man might hunt.’

e. **palalu?-ay** cu? hβuy` ku? pahυuβ.
   AT-rock-IRR ACC baby T witch
   ‘The witch might rock a baby.’

   hit-PT.IRR NOM father T mother
   ‘Father might hit Mother.’

   hit-LT.IRR NOM father T mother
   ‘Father might hit Mother a little bit.’

   kiss-LT.IRR NOM child T mother
   ‘The child might kiss Mother a little bit.’

   drink-IT.IRR-1S.NOM ACC soup T bamboo.spoon
   ‘I might drink soup with a bamboo spoon.’

The irrealis marker -ay co-occurs with the AT trigger markers, as shown in (2.42a)–(2.42e). On the other hand, the irrealis suffix -ay is indicative of the LT trigger marking, such as tutin-ay in (2.42g) and hihip-ay in (2.42h). The PT irrealis marker -aw also replaces the PT trigger marker -un, as shown in (2.42f). Note that there are two irrealis

52 *hihip-aw is not a possible form in Mayrinax Atayal.
PT and LT forms for the verb stem *tuti* ‘hit’—*tuti*-aw ‘hit (PT.IRR)’ in (2.42f) and *tuti*-ay ‘hit (LT.IRR)’ in (2.42g). The difference between the two forms is whether the affectedness of the patient is total or partial. The PT suffix -aw signals a total affectedness, while the LT -ay refers to a partially affected patient. The IT irrealis marker -ani cannot co-occur with the trigger prefix *si-* , so the irrealis IT verb is *nuβua*-ani, as shown in (2.42i).

In addition to the verbal morphology, there are three aspectual particles: *kia* (proximal progressive), *hanian* (distal progressive), and *la* (currently relevant state). The two progressive markers *kia* and *hanian* precede the main verb. The progressive marker and the main verb are linked by an optional marker *ʔiʔ*.

\[(2.43)\]
\[
\begin{align*}
\text{a. } & \textbf{*kia/hanian} \ (ʔ?i?) \ r<um>aakaap \ cu? \ quru? \ ku? \ ?ulaqi?.
\end{align*}
\]
\[
\begin{array}{llll}
\text{PROG} & \text{LNK} & \text{catch<AT.NFUT>} & \text{ACC} \text{ snake} \text{ T} \text{ child}
\end{array}
\]
\[\text{‘The child is catching a snake (now).’}\]

\[
\begin{align*}
\text{b. } & \textbf{*kia/hanian} \ (ʔ?i?) \ r<um>in>aakaap \ cu? \ quru? \ cu \ hisa?
\end{align*}
\]
\[
\begin{array}{llll}
\text{PROG} & \text{LNK} & \text{catch<AT.NFUT>PERF>} & \text{ACC} \text{ snake} \text{ OBL} \text{ yesterday}
\end{array}
\]
\[\text{ku?} \ ?ulaqi?.
\]
\[\text{T} \text{ child}\]

\[
\begin{align*}
\text{c. } & \textbf{*kia/hanian} \ (ʔ?i?) \ pa-rakaap \ cu? \ quru? \ ?iʔ? \ casan \ ku?\ ?ulaqi?.
\end{align*}
\]
\[
\begin{array}{llll}
\text{PROG} & \text{LNK} & \text{AT.FUT-catch} & \text{ACC} \text{ snake} \text{ OBL} \text{ tomorrow T} \text{ child}
\end{array}
\]

According to Lillian Huang (1995a:156), the *kia*-marked action is close to the speaker, while *hanian*-marked action is distant from the speaker. The progressive marker (i.e., *kia* or *hanian*) only co-occurs with a verb which is not inflected for a tense or aspect marker, such as the perfective <*in*> in (2.43b) and future tense *pa*- in (2.43c). There is no

\[\text{53 The word *kia* has a homonym which is an existential marker, as shown in (2.iv).}\]

\[(2.iv)\]
\[
\begin{align*}
\text{a. } & \textbf{kia} \ \ ku? \ \text{imur}-\text{mu}.
\end{align*}
\]
\[
\begin{array}{llll}
\text{AT.NFUT.exist} & \text{T} & \text{house}-1\text{S.POSS}
\end{array}
\]
\[\text{‘I have a house.’}\]
\[\text{(lit. ‘My house exists.’)}\]

\[
\begin{align*}
\text{b. } & \textbf{kia} \ ?iʔ? \ cuquliq \ ?iʔ? \ \text{imur}-\text{su}?.
\end{align*}
\]
\[
\begin{array}{llll}
\text{AT.NFUT.exist} & \text{T} & \text{person} & \text{OBL} \text{ house}-2\text{S.POSS}
\end{array}
\]
\[\text{‘There is a person in your house.’}\]
\[\text{(lit. ‘A person exists in your house.’)}\]
constraint on the trigger marking of the verbs for the occurrence of the progressive marker.

   PROG LNK hunt<AT.NFUT> T man
   ‘The man is hunting.’

   PROG LNK hit-PT.NFUT NOM father T mother
   ‘Father is hitting Mother.’

   PROG LNK kiss-LT.NFUT NOM child T mother
   ‘The child is kissing Mother.’

d. **kia/hanian**-miʔ si-nubway cuʔ? ʔaŋ kuʔ sasuway.
   PROG-1S.NOM:LNK IT.NFUT-drink ACC soup T bamboo.spoon
   ‘I am drinking soup with a bamboo spoon.’

The examples in (2.44) show that the progressive kia may occur in the four trigger constructions in Mayrinax. The TAM marker la occurs after the verb instead of preceding it. As Li and Thompson (1981:240) proposed for the Chinese sentence final particle le (了), the Mayrinax aspectual marker la may be better described as a marker signaling a “recent change of state” rather than a perfective aspect which takes the whole event as being bounded temporarily, spatially, or conceptually.54

(2.45) a. auni la kuʔ kanayril ka pa-tutiŋ ?iʔ kuiŋ.
   AT.NFUT.come ASP T woman LIG AT.FUT-hit ACC IS
   ‘The woman who will hit me came/has come.’

b. ma-syaq la kuʔ ʔulaqiʔ.
   AT.NFUT-laugh ASP T child
   ‘The child laughed/has laughed.’

c. naʃakis-si la.
   AT.NFUT.become.old-2S.T ASP
   ‘You became old.’

In (2.45a) and (2.45b) the aspect marker la is not used to emphasize that the action has been finished. Take (2.45b) for example. The child might be in a bad mood for a while,

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54 Robert Blust observes that it is very suspicious that the aspect marker la in Mayrinax Atayal might be a borrow word from the Chinese aspect marker le (了) due to language contact (personal communication, March 30, 2011).
and his laughing shows that he has changed his mood now. Also, it is impossible to interpret the action has been ended for an event like *naβakis* ‘became old (AT)’ in (2.45c). In (2.45c) the use of *la* signals that the state of the event has some current relevance to some particular (or implied) situation. When there is no time adverb in a sentence, it is assumed that the statement with the *la* is associated with a change of the current state compared to the previous state.

### 2.2.4 Prenominal marking system

Mayrinax noun phrases are preceded by a particle which indicates Case and noun class. The prenominal marking system is shown in Table 2.10. There are three sets of prenominal markers used for: (i) proper nouns; (ii) definite common nouns; and (iii) indefinite nouns.

<table>
<thead>
<tr>
<th>Marking</th>
<th>Common noun</th>
<th>Proper noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger</td>
<td><em>ku?</em></td>
<td><em>?i?</em></td>
</tr>
<tr>
<td>Nominative</td>
<td><em>nku?</em></td>
<td><em>ni?</em></td>
</tr>
<tr>
<td>Accusative</td>
<td><em>cku?</em></td>
<td><em>?i?</em></td>
</tr>
<tr>
<td>Locative</td>
<td><em>cku?</em></td>
<td><em>?i?</em></td>
</tr>
<tr>
<td>Beneficiary</td>
<td><em>nku?</em></td>
<td><em>ni?</em></td>
</tr>
<tr>
<td>Instrument</td>
<td><em>nku?</em></td>
<td>---</td>
</tr>
<tr>
<td>Comitative</td>
<td><em>cku?, kinku?</em></td>
<td><em>ki?</em></td>
</tr>
</tbody>
</table>

The tripartite distinction is illustrated by the trigger examples *?i? limuy* ‘Limuy (T)’ in (2.46a), *ku? ?ulaqi?* ‘the child’ in (2.46b), and *?a? ?ulaqi?* ‘a child’ in (2.46c).

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55 As discussed in Amis Section 2.1.4, what I call nominative and accusative are treated as genitive and oblique, respectively, by Lillian Huang (1995a) and Li (1995). Liao (2004) convincingly argues that Squliq Atayal is an ergative language. However, I treat Mayrinax Atayal as an accusative language like Amis mainly because Mayrinax dyadic AT constructions do not behave like a derived intransitive construction (i.e., antipassive) as the ergative analysis suggests. If the dyadic PT constructions are the canonical transitive construction, they should display a less restricted distribution (Payne 1982). Moreover, the present study shows that the dyadic AT constructions have a less restricted distribution than the PT dyadic constructions. For instance, the matrix and embedded verb cannot be both PT-marked in Mayrinax actor control constructions (Section 4.2.1.1). The embedded verbs cannot be PT-marked in the patient control (Section 4.2.1.2). However, there are no such constraints for the AT verbs in Mayrinax.
The tripartite division can be found in all the prenominal markings except for the comitative prenominal marking, which only lacks the indefinite form. The comitative marker for the proper nouns is \( ki' \), as shown in (2.47a). Meanwhile, there are two comitative markers for definite common nouns, \( ku' \) and \( kinku' \). The distinction between the two is that the former is unpossessable and the latter possessable. The possessable/unpossessable distinction is unique to Mayrinax among Formosan languages, while it is rather common in the Native American languages. Many Native American languages, such as Tlingit, divide nouns into two open classes: possessable and unpossessable nouns. Though possessable nouns vary from language to language, they normally include farm animals, tools, houses, family members, money, etc. In Mayrinax, unlike other languages, the possessable/unpossessable distinction exists only in the comitative prenominal markers, not in the possessive constructions.

(2.47) Comitative prenominal markers: \( kinku'/cku'/ki' \)

a. \( \text{pumua\text{-}an\text{-}niam} \quad \text{ki'} \quad \text{*cuquliq/*katin/maya?} \)
   cultivate\text{-}LT\text{-}NFUT\text{-}1P\text{-}INCL\text{-}NOM \quad \text{COM} \quad \text{person\text{/}cattle\text{/}Maya?} \\
   \text{ku'} \quad \text{claq.} \\
   \text{T} \quad \text{field} \\
   ‘We cultivate the field with the *person\text{/}cattle\text{/}Maya?.’

\[56\] In Mayrinax there is a gap for a comitative marker for the indefinite common nouns. The Mayrinax informants do not accept \( cu' \) used as a comitative marker for the indefinite common nouns.
b. pumuaʔ-an-niam  
cultivate-LT.NFUT-1P.INCL.NOM  COM  person/cattle/Mayaʔ
kuʔ  claq.
T  field
‘We cultivate **the field** with a certain person*/cattle*/Mayaʔ.’

c. pumuaʔ-an-niam  
cultivate-LT.NFUT-1P.INCL.NOM  COM  person/cattle/Mayaʔ
kuʔ  claq.
T  field
‘We cultivate **the field** with the person/cattle*/Mayaʔ.’

For common nouns, *ckuʔ* is an unpossessable comitative marker, as in (2.47a), while *kinkuʔ* a possessable comitative marker, as in (2.47b). The farm animals, like *katiŋ* ‘cattle’, belong to the possessable things. This accounts for the fact why *katiŋ* is grammatical in (2.47c) and ungrammatical in (2.47b). The noun like *cuquliq* ‘person’ can be either possessable or unpossessable. Thus, it is grammatical in both (2.47b) and (2.47c).

In each noun class, the prenominal markers show syncretism. Take the proper noun set for example. The prenominal marker *(ʔ)iʔ* is used to mark trigger, accusative, and locative NPs, as illustrated in the trigger NP *(ʔ)iʔ watan* in (2.48a), accusative NP *(ʔ)iʔ yaɓaʔ* in (2.48c), and locative NP *(ʔ)iʔ luliyuŋ* in (2.48d). The prenominal marker *(ʔ)i nʔ* is used to mark nominative and beneficiary proper nouns, as shown in *(ʔ)iʔ mamaʔ* (2.48b) and *(ʔ)i yaaɓaʔ-niaʔ* in (2.48e).

(2.48)  Prenominal markers for proper nouns:

a. m<in>-aniq  *(ʔ)iʔ  watan  la .
AT.NFUT<PERF>eat  T  Watan  ASP
‘Watan ate/has eaten.'

b. tal-an  *(ʔ)iʔ  mamaʔ  kuʔ  katiŋ.
see-LT.NFUT  NOM  uncle  T  cattle
‘Uncle looked/looks after cattle.’)
(lit. ‘Uncle saw/sees cattle.’)
c. \textit{t}um ut\textit{ij} \textit{?}\textit{i} ya\textit{ba}\textit{?} ku? mamaliku.
\textit{beat <AT.NFUT> ACC father T man}
\‘The man beat/beats/is beating Father."

d. \textit{kia} \textit{?}\textit{i} \textit{l}um \textit{aquy} \textit{?}\textit{i} tavilas ku? ulaqi?.
\textit{PROG LNK swim<AT.NFUT> LOC Tavilas}\textsuperscript{57} T child
\‘The child is swimming in Tavilas.’

e. \textit{t}um ut\textit{ij} \textit{ni} ya\textit{ba}\textit{?}-nia cu? cuqliq ku? mamaliku.
\textit{hit<AT.NFUT> BEN father-3S.POSS ACC person T man}
\‘The man hit/hits/is hitting a person for his father.’

f. \textit{t}um ut\textit{ij}-cu \textit{ni} ya\textit{ba}\textit{?}-mu cu? cuqliiq.
\textit{hit<AT.NFUT>-1S.T *INS/BEN father-1S.POSS ACC person}
\‘I beat (past)/beat/am beating a person for my father.’
\‘I beat (past)/beat/am beating a person with my father.’

g. ma-tut\textit{ij} \textit{?}\textit{i} maya? \textit{ki} \textit{baicu}?.
\textit{AT.NFUT-fight T Maya? COM Baicu}\textsuperscript{58}
\‘Maya fought/fights/is fighting with Baicu.’

Table 2.10 shows that there is a gap for the instrument marking of proper nouns. The Mayrinax language consultants cannot accept a sentence which treats a person (mainly expressed by a proper noun) as an instrument. The sentence (2.48f) cannot have an instrumental reading “with my father” for \textit{ni} ya\textit{ba}\textit{?}-\textit{mu}. The prenominal marker for a comitative proper noun is \textit{ki}? as shown in (2.48g). This grammatical gap in the instrument marking for the proper noun may be due to a cognitive restriction of Mayrinax speakers in that their culture disallows treating a person as an instrument. The prenominal marker \textit{ni}? for the proper noun can only be a beneficiary marker, not an instrument marker.

2.2.5 Postnominal marker for topic and null marker for nominal predicate

In Mayrinax, NPs are all preceded by a prenominal marker except for nominal predicates and topics. Topics are marked by a postnominal particle \textit{ya}?, as shown in (2.49b) and

\textsuperscript{57} Tavilas is another village close to Cahian where my major informants Watan Ba’ay and Abesan Ba’ay live. The section of Mayrinax River close to Travilas is also called Travilas.

\textsuperscript{58} The romanization spelling for the personal name \textit{baicu}? is Baicu’, in which the bilabial fricative \textit{/β/} is conventionally spelt \textit{b} in the glossing and translation.
(2.50b). There is a particle *tiku?* ‘this’ preceding the topic. This particle *tiku?* only exists before a topic.

    pick.up<AT.NFUT> OBL school ACC money T child  
    ‘The child found money at school.’  

b. *tiku?* ?ulaqi? \( ρα\),  
    \( r<um>/uα\) cu? papatasan cu? pila?.  
    DET child TOP pick.up<AT.NFUT> OBL school ACC money  
    ‘As for this child, (he) found money at school.’

    pick.up.LT.NFUT NOM child ACC school T money  
    ‘The child found money at school.’  

b. *tiku?* pila? \( ρα\),  
    DET money TOP pick.up.LF.NFUT NOM child OBL school  
    ‘As for the money, the child picked up (it) at school.’

Topic represents given information which is assumed to be referential. In contrast, the nominal predicates of the common NPs are mainly non-referential in that they do not refer to any specific entity. Predicate NPs are unmarked and occur in the sentence-initial position. In (2.51) the nominal predicate *cuquliq* is non-referential and is not preceded by any marker.

(2.51) *cuquliq-cu*.  
    person-1S.T  
    ‘I am a human being.’

### 2.2.6 Personal pronominal system

The Mayrinax personal pronouns can be divided into two classes: free and bound. The free set is composed of trigger and accusative personal pronouns; and the bound set consists of trigger and nominative personal pronouns. The Mayrinax personal pronominal system is shown in Table 2.11.

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59 Paul Jen-kuei Li indicates that the stem for the AT verb \( r<um>/uα\) is *ru*, not *ruα*. The form *ruα* might be an innovative male form with an extra segment -\( α\). (personal communication, May 28, 2011)
Table 2.11. Personal pronouns in Mayrinax Atayal (mainly based on Li 1995 and Lillian Huang 1995a).

<table>
<thead>
<tr>
<th>Person</th>
<th>Free</th>
<th>Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accusative</td>
<td>Trigger</td>
</tr>
<tr>
<td>1st person</td>
<td>?ikuŋ / ?ikuŋ</td>
<td>kuiŋ</td>
</tr>
<tr>
<td>singular</td>
<td>?ikuŋ / ?ikuŋ</td>
<td>kuiŋ</td>
</tr>
<tr>
<td>plural</td>
<td>?icami / ?icami</td>
<td>cami</td>
</tr>
<tr>
<td>inclusive</td>
<td>?icami / ?icami</td>
<td>cami</td>
</tr>
<tr>
<td>1st person</td>
<td>?icimu / ?icimu</td>
<td>cimu</td>
</tr>
<tr>
<td>plural</td>
<td>?icimu / ?icimu</td>
<td>cimu</td>
</tr>
</tbody>
</table>

There are two allomorphs for each of the free personal pronouns. There is no grammatical difference between the allomorphs that have been elicited so far. Take the first person singular for example.

(2.52) Free trigger personal pronouns:

| ma-syaq | kuiŋ / ?ikuŋ |
| AT.NFUT-laugh | 1S.T ASP |
| ‘I laughed.’ |

The first person singular free trigger pronouns are kuiŋ and ?ikuŋ, as shown in (2.52).

The two forms ?ikuŋ and ?i? kuiŋ are used for the first person singular free accusative personal pronouns, as shown in (2.53).

(2.53) Free accusative personal pronouns:

| t<um>utiŋ | ?ikuŋ / ?i? kuiŋ |
| AT.NFUT-beat | 1S.ACC T |
| ‘Father beats/beat/is beating me.’ |

Regarding the bound trigger personal pronouns, there are bound forms for the first person and the second person. The third person does not have a bound trigger form. The
bound trigger pronouns have several allomorphs\textsuperscript{60} except for the first person exclusive plural -\textit{cami} and the second person plural -\textit{cimu}. For instance, -\textit{su?}, -\textit{si}, and -\textit{si?} are the allomorphs for the second person singular trigger pronoun.

\begin{enumerate}[\itemindent=0.5em]
\item Bound trigger personal pronouns:
  \begin{enumerate}[\itemindent=0.5em]
  \item siputu?-\textit{su?} /*su/*si.
      Hakka-2S.T
      ‘You are a Hakka.’
  \item m-\textit{i}jilis-\textit{si}/su la.
      AT.NFUT-cry-2S.T ASP
      ‘You cried/have cried.’
  \item ma-\textit{uah-\textit{si?}} /*su kisa.
      AT.FUT-come-2S.T.OBL today
      ‘You will come today.’
  \end{enumerate}
\end{enumerate}

The form -\textit{su?} is attached to the predicate, such as the nominal predicate siputu? in (2.54a). Taken as a default, -\textit{su?} is applied to all the cases except for the following two conditions. First, the form -\textit{si} occurs instead of -\textit{su?} when it is followed by the aspectual particle \textit{la}, as shown in (2.54b). Second, the form -\textit{su?} and its following grammatical marker \textit{?i}\textsuperscript{\textit{61}} is required to fuse into a portmanteau \textit{si?}, as (2.54c) illustrates.

The other bound personal pronoun set is nominative. There is at least one form for each person, as shown in Table 2.11. Each of three nominative personal pronouns (first person singular, second person singular, and first person plural inclusive) have two allomorphs which are morphologically conditioned. Let us use the first person inclusive plural to demonstrate the variations.

\textsuperscript{60} Table 2.11 lists three allomorphs for each of the first person singular, second person singular and first person inclusive plural trigger bound pronoun. My corpus shows that there is a suspicious allomorph for each of these person pronouns. The bound trigger person pronouns appear to be an infix within the verb \textit{asi}? ‘must’, such as \textit{asi}<\textit{cu}\textit{ki}? ‘I must’, \textit{asi}<\textit{su}\textit{ki}? ‘you must’, \textit{asi}<\textit{ta}\textit{ki}? ‘we must’. A possible inference is that \textit{ki}? was used as a clause linker and fused with the verb stem \textit{asi} as one word in the historical development. These seemingly ‘infix’ allomorphs <\textit{cu}?>, <\textit{su}?> and <\textit{ta}?> might be, in fact, suffixed to the verb stem \textit{asi}. These single words \textit{asi}<\textit{cu}\textit{ki}?,, \textit{asi}<\textit{su}\textit{ki}?,, \textit{asi}<\textit{ta}\textit{ki}? could be decomposed into \textit{asi-cu ki}?,, \textit{asi-su? ki}?,, and \textit{asi-ta? ki}?. This explains why these words, such as *\textit{asi}?-\textit{cu}?, *\textit{asi}?-\textit{su}?, and *\textit{asi}?-\textit{ta}?, are ungrammatical.

\textsuperscript{61} The grammatical marker \textit{?i}? can be a prenominal marker, an adverbial marker, or a clause linker in Mayrinax.
There are two allomorphs (-ta?, and -ti) for the first person plural inclusive nominative pronouns. The nominative personal pronoun -ta?, as shown in (2.55a) is taken as the default and applied to almost all cases. The form -ti occurs only when followed by an aspectual marker la, as illustrated in (2.55b).

2.3 A sketch grammar of Tsou

The purpose of the sketch grammar of Tsou is to give some background knowledge for the discussion of Tsou complementation in Chapter 5. For a further description of the Tsou grammar, readers are referred to Tung (1964), Starosta (1969, 1988), Tsuchida (1976), Zeitoun (1992, 1993, 1996, 2000c), Szakos (1994), Ya-yin Chang (1998, 2004), You-min Chen (2000), Ko (2000), Weng (2000), Lin (2002; 2009), Huei-ju Huang (2003, 2010), Pan (2007), Yung-li Chang (2009), and others. The informants in this study belong to Tapangu and Tfuya dialects. According to Tung (1964:18) and Li (1979), the differences among the the Tsou dialects are mostly phonological and lexical, not grammatical. Tung (1964:3) indicates that “there is scarcely any grammatical discrepancy being observed.” Owing to intermarriage between the Tapangu and Tfuya speakers, the dialectal differences are becoming non-distinctive in contemporary Tsou.

2.3.1 Word order

The syntax of Tsou is unique among the Formosan languages in that the verbs are preceded by an auxiliary verb which carries the tense and aspect (TAM) information.
In (2.56) the sentence-initial position is occupied by an auxiliary verb attached with a bound personal pronoun te-ko ‘you (T) will’, not the main verb uhtan?e ‘come (AT)’. That is, Tsou is not a predicate-initial but an auxiliary-initial language. Note that the verb does not inflect for TAM. Trigger marking appears on both the auxiliary verb and main verb.

As for the basic word order, Zeitoun (2000c:66) states that Tsou prefers a “VOS” word order, in which the “S” is equal to a trigger NP in this study. That is, the trigger NP is normally located in the sentence-final position, as in (2.57a) and (2.58a). In addition, there are some slight differences between the word order of AT and NAT sentences.

(2.57) Tsou: Verb (AT) + Patient + Actor

a. mo b-ou to yosku ?o oko.
   AT.NFUT AT-eat ACC fish T child
   ‘The child ate/eats/is eating fish.’

b. *mo b-ou ?o oko to yosku.
   AT.NFUT AT-eat T child ACC fish

(2.58) Tsou: Verb (PT) + Actor + Patient

a. i-ta_i tusbuk-a ta oko_i ?e sбуku .
   NAT.NFUT-3S.T pick.bamboo.shoot-PT NOM child T bamboo.shoot
   ‘The child picked/picks/is picking bamboo shoots.’

b. *i-ta_i tusbuk-a ?e sбуku ta oko_i .
   NAT.NFUT-3S.T pick.bamboo.shoot-PT T bamboo.shoot NOM child

62 The Tsou phonemic system consists of six vowels /i, e, u, o, a/ and sixteen consonants /p, b, f, v, m, t, d, s, z, n, c, y, k, η, ?, h/ (Li 1992, Zeitoun 2000c; others). The consonants /b/ and /d/ are implosive stops. The /u/ symbol represents an unrounded back high vowel.

63 The subscript symbol “i” is to mark coindexation between the bound personal pronoun and the NP. The co-indexed NP is always the actor in the clause in the AT and NAT sentences (Starosta 1988, Ya-yin Chang 1998 and Chang & Tsai 2001). But the coreferential NP needs not be overtly addressed when understood in the context.
The word order for the AT two-argument sentences is “Verb (AT) + Patient + Actor”, as in (2.57a). If we move the actor before the patient as in (2.57b), my informants indicate that such a sentence is not native-like though it is ‘understandable’. On the contrary, the word order is rather fixed and the actor has to precede the patient in the NAT construction, as shown in (2.58).

The structure of an equational sentence can be decomposed into two parts—a nominal predicate and a trigger NP.

(2.59) Tsou equational sentence:

\[(zou) \quad yosku \quad eni.\]

\[
\text{PRED}^{64} \quad \text{fish} \quad \text{this} \quad \text{‘This is a fish.’}\]

In Tsou the trigger follows the nominal predicate, as exemplified in (2.59). Also, there is an optional predicate marker \(zou\) before the nominal predicate \(yosku\) ‘fish’.

2.3.2 Trigger system\(^{65}\)

In Tsou there are four different types of trigger markers—actor trigger (AT)\(^{66}\), patient trigger (PT), locative trigger (LT), and beneficiary/instrument trigger (B/IT). The basic Tsou trigger markers are listed in Table 2.13.

\(^{64}\) There are different analyses for this \(zou\) marker, such as an emphatic marker (Ya-yin Chang 1998) and a copular verb (Pan 2007). My analysis treats \(zou\) as a predicate marker since it is used to indicate a nominal predicate.

\(^{65}\) The previous studies analyze the Tsou verbal morphology mainly as a focus marking (e.g., Zeitoun 1992, Ya-yin Chang 1998, Lin 2002, etc.) or voice device (e.g., Weng 2000, Ya-yin Chang 2004, etc.)

\(^{66}\) The analyses on the Tsou AT markers are diverse in the literature of Tsou syntactic studies due to some complex morphosyntactic variations occurring in the interface of the AT markers and their stems. We sample two different analyses to demonstrate the differences in Table 2.12.

Table 2.12. Three analyses on Tsou AT markers.

<table>
<thead>
<tr>
<th>Analysis</th>
<th>markers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ya-yin Chang (1998)</td>
<td>b-, m-, (&lt;\text{m}&gt;), -i, -\text{u}, -o, Ø</td>
</tr>
<tr>
<td>Zeitoun (2000c)</td>
<td>b-, m-, (&lt;\text{m}&gt;), mu-, mo-, Ø</td>
</tr>
</tbody>
</table>

Among the above two analyses, the most controversial point lies in how they treat the final vowel of an AT verb. Ya-yin Chang (1998) takes the final vowel as an AT suffix or a part of an AT circumfix, while it is analyzed as part of a verb stem in Zeitoun’s (2000c) analysis. My analysis also treats the final vowel as a part of the stem. For instance, the glosses for the verbs \(\text{umnu} \ ‘\text{good (AT)}’\) and \(\text{bonu} \ ‘\text{eat (AT)}’\) are ‘good-AF’ and ‘AF-eat-AF’ in Ya-yin Chang’s (1998) analysis, but they are marked as ‘AT.good’ and ‘AT-eat’ in my glossing. My analysis is mainly based on a fact: the final vowels of the AT verbs are newly added vowels in their historical development. Paul Jen-kuei Li indicates that they can be treated as a kind of “echo vowels” since the newly added final vowels are identical or similar with the vowels of the final
Table 2.13. Tsou verbal morphology system (adapted from Ya-yin Chang 1998, Zeitoun 2000c; etc).

<table>
<thead>
<tr>
<th>Trigger marker</th>
<th>Actor Trigger</th>
<th>Patient Trigger</th>
<th>Locative Trigger</th>
<th>Beneficial/Instrument Trigger</th>
</tr>
</thead>
<tbody>
<tr>
<td>b-, m-, &lt;m&gt;, Ø</td>
<td>-a</td>
<td>-i</td>
<td>-(n)eni</td>
<td></td>
</tr>
</tbody>
</table>

Owing to certain semantic and/or pragmatic restrictions, many verbs cannot take the whole set of the four trigger marking. The variations of the four trigger markers are illustrated in Ya-yin Chang’s (1998) examples below:

(2.60) Variations of four trigger markers: Zeitoun (2005:284; glosses mine)

a. **mo** t<**m**>eaphu to oko ta skayu si ino.
   AT.NFUT put<AT> ACC child ACC cradle T mother
   ‘Mother put/put/is putting the child into a cradle.’

b. i-si teaph-a ta skayu to ino t a oko.
   NAT.NFUT-3S.NOM put-PT ACC cradle ACC mother T child
   ‘Mother put/puts/is putting the child into a cradle.’

c. i-si teaph-i to oko ta ino t a skayu.
   NAT.NFUT-3S.NOM put-LT ACC child NOM mother T cradle
   ‘Mother put/puts/is putting the child into the cradle.’

d. i-si teaph-eni to tacumu to ino t ?e oko.
   NAT.NFUT-3S.NOM put-BT ACC banana T mother T child
   ‘Mother put/puts/is putting bananas (in a cradle) for the child.’

In (2.60) the verbs affixed with a trigger marker are not packed with TAM functions. Rather, the auxiliary verbs carry TAM information, such as the free auxiliary verb **mo** in (2.60a) and the bound auxiliary verb **i**- in (2.60b)–(2.60d). The examples in (2.60) also shows that there is a trigger concord between an auxiliary verb and its main verb in Tsou. That is, an AT verb is preceded by an AT auxiliary verb, while an NAT verb by an NAT auxiliary verb. In Tsou, a set of auxiliary verbs is not marked for specific time and/or syllables of the stems, such as -u in aut/ucu ‘take care of (AT)’ and -o in eabagho ‘beat (AT)’. (personal communication, June 1, 2011) This may account for the reason why there is no circumfix AT trigger marker in other Formosan languages. In addition, the final vowels of the AT verbs alone in Ya-yin Chang’s (1998) analysis have to be treated as AT markers, such as -u in umn-**u** ‘pretty (AT)’ and -o in eabak-o ‘beat (AT)’. It seems to be impossible for the final vowels as a part of AT circumfixs (e.g., -u in b-on-u) as well as AT markers themselves (e.g., -u in umn-u).
aspect reference, but can be interpreted as carrying non-future tense. These auxiliary verbs are listed below: (cf. Ya-yin Chang 1998; Zeitoun 1996, 2000c; Weng 2000, etc).

Table 2.14. Non-future auxiliary verbs in Tsou.

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Actor Trigger (AT)</th>
<th>Non-Actor Trigger (NAT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td>mo (mio)</td>
<td>---</td>
</tr>
<tr>
<td>Bound</td>
<td>mi-</td>
<td>i-/ os-</td>
</tr>
</tbody>
</table>

In Tsou auxiliary verbs and main verbs differ mainly in three respects. First, auxiliary verbs only distinguish the AT and NAT markings, but the main verbs have four different triggers, that is, AT, PT, LT, and B/IT. The AT marker m- corresponds to the AT auxiliary verb mo, while the PT, LT, B/IT markers (i.e., -a, -i, -(n)eni) consistently select an NAT auxiliary verb i-/os-.

Second, most of the main verbs can be decomposed into a trigger affix and a verb stem, but the auxiliary verbs are portmanteau morphemes which have both trigger and TAM functions. In Tsou a main verb is a content word which determines the argument structure of the clause, but an auxiliary verb is a function word used to fulfill a syntactic requirement and to carry TAM information.

The third difference is that there is a clear morphological boundary between the verb root and the trigger morpheme, while auxiliaries are portmanteau morphs. Furthermore, the main verb affixed with a trigger marker is a word and can stand alone. But the auxiliary verbs are subdivided into free and bound auxiliary verbs. For instance, the bound auxiliary verb i- cannot exist alone without being affixed with a bound personal pronoun, such as -si in (2.60b)–(2.60d). Therefore, these sentences will be ungrammatical if we remove the bound personal pronoun -si. But the free auxiliary verb mo in (2.60a) cannot be attached with any bound personal pronoun. The sentence (2.60a) will be ruled out if the auxiliary mo is affixed with a bound personal pronoun, such as *mo-si.

2.3.3 Tense, aspect, and mood
Among the Formosan languages, Tsou is the only language whose main verbs do not inflect for tense and aspect. The TAM information is carried by auxiliary verbs instead.
Zeitoun (1996) indicates that there is a realis/irrealis contrast attested in Tsou auxiliary verbs (known as a future/non-future contrast in the present study), as shown in Table 2.15.

Table 2.15. Tense, aspect, and mood system of auxiliary verbs in Tsou (adapted from Zeitoun 1996 and Ya-yin Chang 1998).

<table>
<thead>
<tr>
<th>Tense &amp; aspect</th>
<th>Non-future</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auxiliary</td>
<td>Remote past</td>
<td>Past/Present (progressive)</td>
</tr>
<tr>
<td>AT Free</td>
<td>moso</td>
<td>mo (mio)</td>
</tr>
<tr>
<td>Bound</td>
<td>mo(h)-</td>
<td>mi-</td>
</tr>
<tr>
<td>NAT Bound</td>
<td>o- /oh-</td>
<td>os- /i-</td>
</tr>
</tbody>
</table>

Like Mayrinax Atayal, the auxiliary verbs *mo* (*mio*), *mi-* , and *os/-i-* indicate a past tense or present (progressive) depending on the context if the temporal frame is not marked by an aspectual marker or temporal expression.67 The difference between *mo* (*mio*) and *mi-* is that the AT bound auxiliary verb *mi-* , as in (2.61b), has to be attached to a bound personal pronoun which is coreferential with the matrix actor, but the AT free auxiliary verb *mo* (*mio*), as in (2.61a), needs no bound personal pronoun.

(2.61)  
a. **mo/mio** tivkocu ta bëvnu si oko.  
AT.NFUT AT.pick ACC flower T child  
‘The child picked/picks/is picking the flower.’

b. **mi-ta** tivkocu ta bëvnu (si oko).  
AT.NFUT-3S.T AT.pick ACC flower T child  
‘The child picked/picks/is picking the flower.’

In (2.61b) the actor -*ta* attached to the auxiliary verb *mi-* is known by the speaker. It is allowed to specify the actor in the same clause, such as *si oko* ‘the child’ in (2.61b). No bound/free distinction occurs in the NAT present auxiliary verbs. Only one bound NAT auxiliary verb expresses non-future tense in Tsou. However, the bound NAT auxiliary verb has two allomorphs, *os-* and *i-.*

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67 Zeitoun (1996) states that “the progressive is inherently implied in AF construction.” But she also notes that “the co-occurrence of an auxiliary verb with different sentential constituents may yield a different interpretation.”
The NAT allomorph os- is used for the first personal and second person singular, while i-
is used for the other personal pronouns, as illustrated in (2.62).

As for the non-future events, there is a set of remote past auxiliary verbs in Tsou.
The AT auxiliary verbs moso and moh- are used to indicate that events have ended for
some time or the actions happened long time ago. A bound/free distinction exists in the
AT remote past auxiliary verbs moso and moh-, as shown in (2.63).

There are two bound allomorphs o- and oh- for marking the NAT remote past tense, as in
(2.64).

---

68 There is a future/non-future distinction between two oblique markers ho and ne in Tsou, e.g., ho hucma ‘tomorrow’/ ne hucma ‘yesterday’. Note that the word humca means ‘the day before or after’, which does not carry specific time reference.
b. **oh-ta/-to**

\begin{tabular}{llll}
\text{NAT.NFUT-3S.NOM/-1P.INCL.NOM} & \text{attack-LT} & \text{T} & \text{wild.pig} \\
\end{tabular}

‘He/We (incl.) attacked the wild pig.’

The NAT remote past marker *oh-* occurs when the nominative personal pronouns are the third person singular *-ta* and the first person plural inclusive *-to*, whereas *o-* is used for the other personal pronouns. The marker *o-* should be treated as the default form for the NAT remote past auxiliary verb since the /h/ in *oh-* seems to be inserted when the attached personal pronoun begins with a dental stop /l/.

Regarding the future-tense auxiliary verbs, they can stand alone without being affixed with a bound person pronoun. That is, the future auxiliary verbs are free morphemes. In (2.65), the coreferential bound personal pronoun *-ta* attached to the AT future auxiliary verb is optional.

\begin{tabular}{llllll}
(2.65) & \text{te-} & \text{ba} & \text{nave} & \text{si} & \text{oko} & \\
\text{FUT-3S.T} & \text{AT-eat} & \text{ACC} & \text{rice} & \text{T} & \text{child} \\
\end{tabular}

‘That child will eat rice.’

Also, each future auxiliary verb can appear in both AT and NAT sentences. The difference among the future auxiliary verbs is related to time reference. The marker *te-* is used to refer to an event that is going to happen immediately, as in (2.66); *ta-* for an event that will happen later, as in (2.67); and *tena-* for an event that will happen after a couple of days or a longer period of time, as in (2.68).

\begin{tabular}{llll}
(2.66) & a. & \text{te-} & \text{mu} & \text{to wasavi} & \\
\text{FUT-1S.T} & \text{AT-plant} & \text{ACC wasabi} \\
\end{tabular}

‘I will plant wasabi.’

\begin{tabular}{llll}
(2.67) & a. & \text{ta-} & \text{mu} & \text{to wasavi ho hucma} & \\
\text{FUT-1S.T} & \text{AT-plant} & \text{ACC wasabi OBL the.next.day} \\
\end{tabular}

‘I will plant wasabi tomorrow.’
In Tsou future-tense auxiliary verbs are also used to indicate an irrealis mood, as illustrated by nte and nto in (2.69).

The auxiliary nte refers to a situation which may occur, while nto indicates a counterfactual situation in the past (cf. Zeitoun 1996, Weng 2000, and Huei-ju Huang 2003, etc.).

Many Formosan languages display a realis/irrealis dichotomy (cf. Zeitoun et al. 1996). However, irrealis mood is expressed differently among these languages. The differences can be divided into three types. In the first type, future tense and irrealis mood are not morphologically distinguished in some Formosan languages, such as Tsou. The second type is that irrealis mood is marked differently from future tense. The second type is exemplified by Mayrinax Atayal (see Section 2.2.3). The third type is a mix of the first and second types. That is, some irrealis markers and future-tense markers are not morphologically distinctive in some trigger marking(s), while the distinction does exist in

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69 Note that the theme peisu ‘money’ of the verb eaa (or yaa) ‘have (AT)’ is not marked by an accusative marker. This is an instance of noun incorporation. This process of noun incorporation is rather productive and can be found in some frequently used verbs, such as eaa ‘catch (PT), moyai ‘build (AT), mihia ‘sell (AT), mihia ‘buy (PT), s<m>oa ‘get (AT), etc. (Szakos 1998)

70 My informant indicates that the first personal pronoun in (2.69a) is -ʔo since the event is assumed to occur in the immediate future as indicated by the auxiliary verb nte.
the other trigger markings. Paiwan is an example. The future tense marker in Paiwan is consistently marked by one function word uri. Only the AT verbs use uri to indicate irrealis events; and each of the NAT verbs has a different marker other than uri to mark irrealis events (i.e., -aw for PT verbs, -ay for LT verbs, and -an for B/IT verbs).


The auxiliary verb da refers to a habit or an action that occurs frequently. It can stand alone in the sentence-initial position, as in (2.70a), or can be optionally suffixed with a bound personal pronoun, as in (2.70b).

(2.70) a. da (asŋucu) tutpʉtu to tokeuya si mameoi.
   HAB AT.often AT.catch ACC butterfly T old.man
   ‘The old man (often) catches butterflies.’

   b. da-mu (asŋucu) tutpʉt-a ?o tokeuya.
   HAB-2P.NOM AT.often catch-PT T butterfly
   ‘You (often) catch the butterflies.’

The examples in (2.70) show that da creates a habitual reading even without the adverb asŋucu ’often (AT)’. It appears in both AT and NAT sentences, as in (2.70a) and (2.70b), respectively. The auxiliary verb da can also appear in the reading other than habitual, such as ability, personality, and preference.71 For example:

(2.71) a. Ability:
   da-ta m-eeďu pasunayno.
   HAB-3S AT-can AT.sing
   ‘He can sing.’

71 For convenience’s sake, the gloss for the auxiliary verb da is consistently ‘HAB’ even when it is used to indicate a reading other than a habitual reading.
b. Personality:
\[\text{da-ta na?no doenayoyo.}\]
\text{HAB-3S.T AT.very AT.gossip}
\text{‘He is a gossip.’}

c. Preference:
\[\text{da-ta kae6-a ana ta oko, ?e tacumu.}\]
\text{HAB-3S.NOM like-PT eat.PT NOM child T banana}
\text{‘The child likes to eat bananas.’}

Note that present tense is inherently implied by the habitual marker \text{da} if there is no time expression\(^{72}\) or time reference inferable in context, as in (2.70) and (2.71).

The aspectual suffix \text{-da} is a bound morpheme which is obliged to attach to an auxiliary verb and to occur after the clitic pronoun if there is one, as in (2.72).

\[(2.72) \quad \text{a. mo?-u m-um?u to cuc?u ne hucma.}\]
\text{AT.NFUT-1S AT-plant ACC ginger OBL the.previous.day}
\text{‘I planted ginger yesterday.’}

\text{b. mo?-u-da m-um?u to cuc?u ne nut?ucu.}\]
\text{AT.NFUT-1S-ASP AT-plant ACC ginger OBL year}
\text{‘I (often) planted ginger last year.’}

Different from the habitual auxiliary verb \text{da}, the aspectual suffix \text{-da} creates an experiential reading. However, it does not provide any absolute time reference. Rather, it emphasizes an event which occurred at least once based on a relative time scale. The aspectual marker \text{-da} in (2.72b) co-occurs with a past tense auxiliary verb \text{mo-} and turns the simple past event in (2.72a) into a certain kind of experience in the present perfective with a reference point \text{ne nut?ucu ‘last year’}.

In addition to the habitual auxiliary verb \text{da} and experiential suffix \text{-da}, there are two other aspectual markers \text{-cu} and \text{-n?a} in Tsou, as listed in Table 2.16.

\(^{72}\) The sentence with the habitual marker \text{da} can also yield a past habitual reading when there is a past time adverb, such as \text{ne nuana?o ‘in the past’}.\)

<table>
<thead>
<tr>
<th>Aspect Marker</th>
<th>Perfective</th>
<th>Progressive ‘still’</th>
<th>Experiential</th>
</tr>
</thead>
<tbody>
<tr>
<td>-cu</td>
<td>-n?a</td>
<td>-da</td>
<td></td>
</tr>
</tbody>
</table>

The perfective aspect affix -cu has a different function from the past tense marking on the auxiliary verb in that it is used to emphasize a change of state similar to *tu* in Amis and *la* in Mayrinax Atayal.

(2.73)  
a. mi-ʔo uhtanʔe.  
\text{AT.NFUT-1S.T} \text{AT.come}  
‘I came/come/am coming.’

b. mi-ʔo-cu uhtanʔe.  
\text{AT.NFUT-1S.T-ASP} \text{AT.come}  
‘I have come.’

Compared to (2.73a), the speaker of (2.73b) emphasizes that he did take the action and arrived at the destination.

As for the progressive marker -n?a, it is used to indicate that the action is “still” in progress.

(2.74)  
a. mi-su m-ʔọsi.  
\text{AT.NFUT-2S} \text{AT-cry}  
‘You cried/cry/are crying.’

b. mi-su-n?a m-ʔọsi.  
\text{AT.NFUT-2S-PROG} \text{AT-cry}  
‘You are still crying.’

The progressive marker -n?a meaning ‘still’ carries some pragmatic function, such as complaint or surprise in (2.74b), depending on the intention of the speaker.

2.3.4 Prenominal marking system

Tsou prenominal marking system has several language-specific distinctions in contrast to other Formosan languages. Tsou is the only Formosan language that has visible/invisible and near/middle/far distinctions, as shown in Table 2.17. But the common/personal-
proper NPs distinction does not appear in Tsou prenominal markers though many Formosan languages have this distinction, such as Amis and Mayrinax Atayal.

Table 2.17. Tsou prenominal marking system (adapted from Zeitoun 1996, Ya-yin Chang 1998, Pan 2007, etc.).

<table>
<thead>
<tr>
<th>Definiteness (def)</th>
<th>Visibility (vis)</th>
<th>Distance</th>
<th>Trigger</th>
<th>Nominative</th>
<th>Accusative</th>
</tr>
</thead>
<tbody>
<tr>
<td>+def</td>
<td>+vis</td>
<td>near</td>
<td>?e</td>
<td>ta</td>
<td>ta</td>
</tr>
<tr>
<td>+def</td>
<td>+vis</td>
<td>middle</td>
<td>si</td>
<td>ta</td>
<td>ta</td>
</tr>
<tr>
<td>+def</td>
<td>+vis</td>
<td>far</td>
<td>ta</td>
<td>ta</td>
<td>ta</td>
</tr>
<tr>
<td>+def</td>
<td>−vis</td>
<td>near</td>
<td>co</td>
<td>nca</td>
<td>to</td>
</tr>
<tr>
<td>+def</td>
<td>−vis</td>
<td>far</td>
<td>?o</td>
<td>to</td>
<td>to</td>
</tr>
<tr>
<td>−def</td>
<td>−vis</td>
<td>---</td>
<td>na</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

In Tsou the prenominal markers are used to indicate semantic roles of the NPs as well as to mark definiteness, proximity and visibility of the NPs in relation to speakers. Therefore, the term “prenominal” marking system replaces Case marking system. Regarding the prenominal marking system, my version is distinct from others’ in that I use “nominative” marking for the actor NPs in the NAT constructions. Meanwhile, most of the previous studies do not propose the nominative marking (that is, “genitive” in their terminology) for Tsou prenominal system (e.g., Ya-yin Chang 1998, Zeitoun 2000c, Pan 2007, among others). That is, there is only a two-way distinction of trigger/accusative (that is, “nominative/oblique” in their terminology) in their prenominal marking system of Tsou. Their analyses are based on the fact that nominative Case and accusative Case have identical forms except for the nca/to distinction for the definite, near, and invisible NPs. Compare (2.75) and (2.76):

(2.75) a. mo 6-ayto ta tposu ?e oko.
AT.NFUT AT-see ACC book T child
‘The child saw/sees/is seeing the book.’
b. i-ta_i ayt-i ta oko_i ?e tposu.
   NAT.NFUT-3S.NOM see-LT NOM child T book
   ‘The child saw/sees/is seeing the book.’

(2.76) a. mo oasoe to ton?u ?o buhci.
   AT.NFUT AT.eat-stealthily ACC millet T mouse
   ‘A mouse ate/eats/is eating millet stealthily.’

b. i-si_i oasoz-a nca buhci_i ?o ton?u.
   NAT.NFUT-3S.NOM eat-stealthily-PT NOM mouse T millet
   ‘A mouse ate/eats/is eating the millet stealthily.’

The prenominal marker ta seems to be used to indicate either a patient (or theme) of an action in an AT sentence, such as ta tposu ‘the book’ in (2.75a), or an actor in the NAT sentence, such as ta oko ‘the child’ in (2.75b). However, the examples in (2.76) show that the formal distinction is still remained in the near/invisible definite set. The theme of the AT sentence ton?u ‘millet’ is marked by to in (2.76a), but the actor of the LT sentence buhci is preceded by nca in (2.76b). Note that the actor nca buhci ‘mouse’ in (2.76a) is said to be so close to the speaker that he can hear the gnawing sound the mouse is making but he cannot see the mouse since it is hiding somewhere near. Also, he cannot identify which mouse. Therefore, this marking for the particle nca is categorized as near, invisible, indefinite in the prenominal marking system.

Visibility (abbreviated as “vis”) is reflected in the formal distinctions in the Tsou prenominal marking. A [+vis] NP means that that an NP is on the spot when the speaker mentions it. On the contrary, the [−vis] refers to an NP that cannot be seen at the time of utterance, which does not exist on the spot, which appeared in the past, or which would appear in the future. In terms of the proximity variable, there is a tripartite near/middle/far distinction relative to the location of the speaker; and an invisible NP only allows a near/far dichotomy. The last variable involved with the prenominal marking is definiteness (abbreviated as “def”). The [+def] NP refers to an argument which has a particular referent in the context; and [−def] normally has a generic reading of that referent. The trigger NP ?e buhci ‘the mouse (T)’ in (2.77) demonstrates all the six variations mentioned above.
2.3.5 Personal Pronominal system

Tsou personal pronominal system can be mainly divided into two sets: trigger and nominative personal pronouns (cf. Tung 1964, Zeitoun 1992, Szakos 1994, Ya-yin Chang 1998, Zeitoun 2000c; etc.). There are bound and free forms in the trigger personal pronouns, as illustrated by the first person singular pronouns in (2.78).

(2.78) a. zou tsou ( na ) a?o.
PRED person T 1S
‘I am a human being.’

b. mi-?o uhtan?e.
AT.NFUT-1S.T AT.come
‘I came/come/am coming.’
The bound form -ʔo in (2.78b) is attached to the auxiliary mi-, whereas the free form aʔo in (2.78a) occurs in the sentence-final position. There is no accusative set for the personal pronouns since they are not morphologically distinguished from the free form set, as shown in Table 2.18.

### Table 2.18. Personal pronouns in Tsou (adapted mainly from Ya-yin Chang 1998 and Zeitoun 2000c).

<table>
<thead>
<tr>
<th>Person</th>
<th>Free (Trigger/Accusative)</th>
<th>Bound Trigger</th>
<th>Nominative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st person singular</td>
<td>aʔo</td>
<td>-ʔu (far)</td>
<td>-ʔo (near)</td>
</tr>
<tr>
<td>2nd person singular</td>
<td>su</td>
<td>-su</td>
<td>-ko</td>
</tr>
<tr>
<td>3rd person singular</td>
<td>tayni (visible) icʔo (invisible)</td>
<td>-ta</td>
<td>-ta (visible) -si (invisible or far-visible)</td>
</tr>
<tr>
<td>1st person plural inclusive</td>
<td>aʔto</td>
<td>-to</td>
<td>-to</td>
</tr>
<tr>
<td>1st person plural exclusive</td>
<td>aʔmi (2 persons) aʔmia (&gt;2 persons)</td>
<td>-mía (TP)74</td>
<td>-mía (TP)</td>
</tr>
<tr>
<td>2nd person plural</td>
<td>mu</td>
<td>-mu</td>
<td>-mu</td>
</tr>
<tr>
<td>3rd person plural</td>
<td>hinʔi</td>
<td>-hinʔi</td>
<td>-hinʔi (visible) -he (invisible)</td>
</tr>
</tbody>
</table>

However, the free forms are not allowed to occur in the accusative position in most cases, as illustrated in (2.79b).

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73 The bound nominative personal pronouns in the present study corresponds to the “genitive” pronouns in most of the previous studies (e.g., Starosta 1988 and Zeitoun 2000c) and the “oblique” pronouns in some previous studies (e.g., Ya-yin Chang 1998), respectively. But it is problematic to use either “genitive” or “oblique” to refer to non-trigger actors in the NAT sentences. The label “genitive” suggests that the Tsou NAT sentences be nominal. However, it is problematic to treat the Tsou NAT sentences as a nominal construction. For instance, the nominal analysis cannot account for the fact that the NAT auxiliary verbs do carry tense and aspect information. As for the oblique analysis, the non-trigger actors of the NAT sentences are treated as a downgraded oblique in a passive construction. The oblique analysis contradicts the fact that the actor NPs (including both trigger and non-trigger actors) carry certain subject properties in Tsou. Following Tonoike & Liu (in preparation), a non-trigger actor of Tsou is marked as nominative because its fixed word order (right after a main verb if it is a NP or being attached to the auxiliary verb if it is a bound personal pronoun) suggests that it structurally occupy a subject position. In addition, the nominative analysis also matches the fact that actor carries certain subject properties in Tsou.

74 TP represents the abbreviation of Tapangu dialect, which is spoken in five villages of Alishan Township (阿里山鄉), Chiayi County. These are Cayamavana (茶山), Nia’ue’ua (里佳), Saviki (山美), Sinvi (新美), and Tapang (達邦) in Alishan Township.

75 TF stands for the Tfuya dialect, whose speakers scatter around Lalauya (樂野), Pnguu (來吉), and Tfuya (特富野) in Alishan Township.
(2.79) a. mi-ʔo ɓ-ayto ta mameoi.
   AT.NFUT-1S.T AT-see ACC old.man
   ‘I saw/see/am seeing the old man.’

   b. *mi-ʔo ɓ-ayto tayni.
   AT.NFUT-1S.T AT-see 3S
   Intended: ‘I see him.’

(2.80) a. sia na mo ɓ-ayto ta mameoi?
   who T AT.NFUT AT-see ACC old.man
   ‘Who saw the old man?’
   (lit. ‘Who is (the one) that saw the old man?’)

   b. sia na mo ɓ-ayto tayni?
   who T AT.NFUT AT-see 3S
   ‘Who saw him?’
   (lit. ‘Who is (the one) that saw him?’)

The free personal pronouns can still occur in the accusative position of a wh-question, as shown in (2.80b). Note that the accusative personal pronoun tayni in (2.80b) is homophonous with its corresponding trigger personal pronoun tayni. The syncretism of the nominative/accusative personal pronouns suggests that the grammatical relation of trigger/accusative be indicated by word order.

In Tsou, the free trigger first person pronouns have a dual number aʔmi ‘we (two)’ in addition to plural aʔmia ‘we (more than two)’. To my knowledge, this dual/plural distinction only exists in Tsou among Formosan languages. Below are the examples:

(2.81) a. os-ko teodu-i aʔmi.
   NAT.NFUT-2S.NOM see-LT 1P.EXCL
   ‘You see us (two).’

   b. os-ko teodu-i aʔmia.
   NAT.NFUT-2S.NOM see-LT 1P.EXCL
   ‘You see us (more than two).’

In table 2.18 there are two forms for the bound trigger second person plural pronouns, -mia and -mza. The form -mia belongs to Tapang dialect, while -mza is used in Tfuya dialect. The difference between -mia and -mza is purely phonological, not syntactic.
Tsou nominative personal pronouns are bound forms which are suffixed to the sentence-initial auxiliary verb, such as -ta in (2.82a) and -si (2.82b).

\[(2.82) \begin{align*}
\text{a.} & \quad \text{te-} \underline{\text{ta}}_i \quad \text{ana ( ta } \text{o}_k \text{a}_i \text{ ) si navew.} \\
& \quad \text{FUT-3S.NOM eat.PT NOM child T rice} \\
& \quad \text{‘The child (visible) will eat the rice.’}
\end{align*}\]

\[
\begin{align*}
\text{b.} & \quad \text{te-} \underline{\text{si}}_i \quad \text{ana ( to } \text{o}_k \text{a}_i \text{ ) si navew.} \\
& \quad \text{NFUT-3S.NOM eat.PT NOM child T rice} \\
& \quad \text{‘The child (invisible) will eat the rice.’}
\end{align*}\]

Generally speaking, there is a visible/invisible distinction between the third person nominative personal pronouns -tal-si (singular) and -hin?il-he (plural) (cf. Ya-yin Chang 1998). Furthermore, the 3rd person bound trigger pronoun -si can also refer to an visible actor which is very far from the speaker. Such a distinction of visibility is not found in the bound trigger third person pronouns. Thus, -ta (singular) and -hin?i (plural) are the only forms. Also, the coreferential NP can optionally co-occur with the third personal pronoun. The coreferential NP and the bound personal pronoun constitute an agreement relation. The coreferential NPs are not required to be trigger NPs since their markings can be trigger or nominative. However, they have to be actors (Starosta 1988, Ya-yin Chang 1998, and Chang & Tsai 2001).

The nominative forms in the first person and second person singular pronouns vary according to the auxiliary verbs they attach to, as shown in (2.83) and (2.84).

\[(2.83) \begin{align*}
\text{a.} & \quad \text{o-} \underline{\text{?o}} \text{/*-?u peo} \text{ba}-a \quad \text{ta tanimu.} \\
& \quad \text{NAT.NFUT-1S.NOM chase-PT T Tanimu} \\
& \quad \text{‘I chased/chase/am chasing Tanimu.’}
\end{align*}\]

\[
\begin{align*}
\text{b.} & \quad \text{o-} \underline{\text{?u}} \text{/*-?o peo} \text{ba}-a \quad \text{ta tanimu.} \\
& \quad \text{NAT.NFUT-1S.NOM chase-PT T Tanimu} \\
& \quad \text{‘I chased Tanimu (before).’}
\end{align*}\]

\[(2.84) \begin{align*}
\text{a.} & \quad \text{o-} \underline{\text{ko}} \text{/*-su peo} \text{ba}-a \quad \text{?o tanimu.} \\
& \quad \text{NAT.NFUT-2S.NOM chase-PT T Tanimu} \\
& \quad \text{‘You chased/chase/are chasing Tanimu.’}
\end{align*}\]

\[
\begin{align*}
\text{b.} & \quad \text{o-} \underline{\text{su}} \text{/*-ko peo} \text{ba}-a \quad \text{?o tanimu.} \\
& \quad \text{NAT.NFUT-2S.NOM chase-PF T Tanimu} \\
& \quad \text{‘You chased Tanimu (before).’}
\end{align*}\]
(2.85) a. i-ta /-si peoɓaŋ-a ta tanimu.
   NAT.NFUT-3S.NOM chase-PT T Tanimu
   ‘He chased/chases/is chasing Tanimu.’

   b. oh-ta /o-si peoɓaŋ-a ta tanimu.
   NAT.NFUT-3S.NOM chase-PT T Tanimu
   ‘He chased Tanimu (before).’

(2.86) a. i-to peoɓaŋ-a ta tanimu.
   NAT.NFUT-1P.INCL.NOM chase-PT T Tanimu
   ‘We chased/chase/are chasing Tanimu.’

   b. oh-to peoɓaŋ-a ta tanimu.
   NAT.NFUT-1P.INCL.NOM chase-PT T Tanimu
   ‘We chased Tanimu (before).’

(2.87) a. i-mia peoɓaŋ-a ta tanimu.
   NAT.NFUT-1P.EXCL.NOM chase-PT T Tanimu
   ‘We chased/chase/are chasing Tanimu.’

   b. o-mia peoɓaŋ-a ta tanimu.
   NAT.NFUT-1P.EXCL.NOM chase-PT T Tanimu
   ‘We chased Tanimu (before).’

(2.88) a. i-mu peoɓaŋ-a ta tanimu.
   NAT.NFUT-2P.NOM chase-PT T Tanimu
   ‘You (pl) chased/chase/are chasing Tanimu.’

   b. o-mu peoɓaŋ-a ta tanimu.
   NAT.NFUT-2P.NOM chase-PT T Tanimu
   ‘You (pl) chased Tanimu (before).’

(2.89) a. i-hinʔi/-he peoɓaŋ-a ta tanimu.
   NAT.NFUT-3P.NOM chase-PT T Tanimu
   ‘They chased/chase/are chasing Tanimu.’

   b. o-hinʔi/-he peoɓaŋ-a ta tanimu.
   NAT.NFUT-3P.NOM chase-PT T Tanimu
   ‘They chased Tanimu (before).’

The first and second person nominative forms are, respectively, -ʔo and -ko when attached to the present (or unmarked) auxiliary verb os-, as in (2.83a) and (2.84a). But they become -ʔu and -su when the auxiliary verb carries past tense, such as o- in (2.83b) and (2.84b). Compared to the change in the first/second singular nominative personal pronouns, the other personal pronouns remain invariant, as shown in (2.85)–(2.89).
This chapter analyzes Amis complementation constructions with the aim to distinguish different types of complement clauses and to identify the syntactic structures of their clausal linkage. Amis represents one type of syntactic complementation among the Formosan languages—one in which there is no overt clause linker between the matrix clauses and complement clauses. My research on Amis complementation will focus on three topics: (i) the syntactic properties/constraints of the full/defective embedded clauses; (ii) the syntactic structures with apparent verb juxtaposition in actor control and patient control; and (iii) the syntactic structures with a “raised” argument.

In the existing literature, several works involve Amis complementation, including Wu (1994, 2000, 2006), En-hsing Liu (2003), Tsai (2007), etc. Among them, Wu’s (1994) study is the first comprehensive work on Amis complementation from a semantic/functional perspective. Two different analyses—serial verb construction (SVC) and control—have been proposed for the Amis clause/predicate linkage without an overt linker. Wu (1994, 2000) treats the constructions with a shared argument as instances of SVC (including pivotal constructions). Later studies adopt a control analysis to account for the verb-verb sequences in Amis, including En-hsing Liu (2003), Wu (2006) and Tsai (2007). Hence, the structure of the constructions with a shared argument is still a controversial issue. In addition, the complementation constructions with a “raised” argument have never been discussed. The present study aims to examine both SVC and control analyses to see which analysis can better account for the constructions with the verb-verb sequences in Amis. In addition, the present study starts to explore the Amis “raising” constructions.

Note that the three authors do not adopt the same approach. Following the generative framework, En-hsing Liu (2003) first proposed a control analysis for the Amis constructions with an apparent verb-verb sequence. Based on En-hsing Liu’s (2003) findings in Amis control operation, Tsai (2007) proposes that Amis has undergone the process of “conjunctive reduction”. Wu (2006) examines Amis control phenomena from a Role and Reference Grammar (RRG) approach. The details of these analyses will be mentioned when relevant to our discussion in this chapter.
Based on the argument structures of the complement clauses, Amis complementation is divided into two major groups: full embedded clauses, as will be discussed in Section 3.1, and defective embedded clauses, as in Section 3.2. The constructions with defective complement clauses consist of two different syntactic operations: control and raising. Control will be covered in Section 3.2.1 and raising in Section 3.2.2. The Amis control constructions comprise actor control and patient control, as will be introduced in Section 3.2.1.1 and Section 3.2.1.2, respectively. In Amis, there are two complementation constructions involving a “raised” argument—complementation with a full complement clause and actor control construction. “Raising-to-trigger” (“RtoT”) and “Raising-to-accusative” (“RtoA”) are found in the complementation with a full complement clause. “RtoT” and “RtoA” refer to the complementation construction in which the trigger NP is realized as a trigger NP of a non-actor trigger (abbreviated as NAT) matrix clause and as an accusative NP of an AT matrix clause, respectively. As for the raising in the actor control, it refers to an actor control construction in which an accusative patient of the AT embedded clause is obligatorily moved into the trigger position in the NAT matrix clause. As will be shown in Section 3.2.2, a construction involving a “raised” argument is not necessarily an instance of raising, as defined in the Generative Grammar. Both “RtoT” and “RtoA” are not raising, which will be discussed in Section 3.2.2.1. Therefore, both are labeled with quotation marks. Rather, only the raising in the actor control is the genuine raising from the generative perspective, as will be discussed in Section 3.2.2.2.

3.1 Full embedded clauses
3.1.1 Syntactic properties
In Amis full complement clause constructions, the matrix clause is followed by a full complement clause. There is no overt linker between the matrix predicate and full complement clause in Amis. The matrix predicates which can select a full complement clause cover a wide range of verbs, such as predicates of knowledge (e.g., ma-vana? ‘know (AT)’ in (3.1)), utterance predicates (e.g., suwal-ən ‘tell (PT)’ in (3.2)), propositional attitude predicates (e.g., mi-halatən ‘think (AT)’ in (3.3)), predicates of
fearing (e.g., *ma-talaw* ‘fear (AT)’ in (3.4)), and perception predicates (e.g., *ma-nəŋnəŋ* ‘see (PT)’ in (3.5)).

(3.1) **ma-vana**? ku matu?asay Ø [ mi-rəpər ku kapah
AT.NPST-know T old.man LNK AT.NPST-catch T young.man
ACC pig
tu vavuy].

‘An old man knows that a young man caught a pig.’

(3.2) **suwal-ən** nu tau kaku Ø [ ira
tell-PT.FUT NOM someone 1.S.T LNK AT.NPST.exist
ku valiyus ] saan.

T typhoon so.say.PT
‘He will tell me that there is a typhoon (coming). (He) says so.’

(lit. ‘He will tell me that a typhoon exists. (He) says so.’)

(3.3) **mi-halatən** kaku Ø [ mi-vuin-aay ci utay ].
AT.NPST-think 1.S.T LNK AT.go.fishing-AY T Utay
‘I think that Utay is a fisherman.’ or ‘I think that Utay is going fishing.’

(3.4) **ma-talaw** kura matu?asay Ø [ mi-tatuę kunini a
AT.NPST-be.afraid T.that old.man LNK AT.NPST-touch T.that LIG
wawa tunini a ?unər ].

child ACC.this LIG snake
‘That old man is afraid that this child will touch this snake.’

(3.5) **ma-nəŋnəŋ** ni arik Ø [ mi-rəpər kura kapah tu wacu ].
PT.NFUT-see NOM Arik LNK AT.NPST-catch T.that young.man ACC dog
‘Arik sees (that) that young man is catching a dog.’

Note that the matrix predicate which can take a full complement clause is not limited to a verbal predicate. Some nominal predicates are able to select a full complement clause, such as *halatən aku* ‘my thought (or idea)’ in (3.6a).

(3.6) a. Nominal predicate:

**u halatən aku** Ø [ ma-rəpər tu nura wawa ku pusı ].

PRED thought 1.S.POSS LNK PT.NFUT-catch ASP NOM.that child T cat
‘My idea is that that child caught a cat.’

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77 The categorization of these complement-taking verbs is mainly based on Noonan (1985).
The Amis full complement clauses are sentence-like, as evidenced mainly in two ways. There is no restriction either on the trigger marking or on the tense and aspect marking (TAM). The full embedded clauses are not required to take any specific trigger marking.

(3.7)  
a. AT sentence:  
ma-vana? cinya Ø [ k<um>a?a ku wawa tu titi ].  
AT.NPST-know 3S.T LNK eat<AT.NPST> T child ACC meat  
‘He knows that a child will eat meat.’

b. PT sentence:  
ma-vana? cinya Ø [ kiwat-Øn nu wawa ku ?olu ].  
AT.NPST-know 3S.T LNK hook-PT.FUT NOM child T mouse  
‘He knows that a child will hook a mouse.’

c. LT sentence:  
ma-vana? cinya Ø [ pi-cilah-Øn nu matu?asay  
AT.NPST-know 3S.T LNK pi-pickle-LT NOM old.man  
tu kuwa’s ku kuraj ].  
ACC papaya T urn  
‘He knows that an old man pickled papayas in an urn.’

d. IT sentence:  
ma-vana? cinya Ø [ sa-pi-cucuk nu kapah tu vavuy  
AT.NPST-know 3S.T LNK IT-PI-stab NOM young.man T ACC pig  
kui ?iluc ].  
T spear  
‘He knows that the young man stabbed a pig with a spear.’

For instance, ma-vana? ‘know (AT)’ in (3.7) is able to take complements with four different trigger markings. Moreover, no significant TAM constraint is detected in the full complement clauses.
(3.8)  
a. ma-talaw kita Ø [pacük-an nu kaka
ANPST-fear INCL.T LNK butcher-PT.FUT NOM older.brother
nira kura kulu].
3S.POSS T.that bull
‘We fear that his older brother will butcher that bull.’
b. ma-talaw kita Ø [ma-pacuk nu kaka
ANPST-fear INCL.T LNK PT.NFUT-butter NOM older.brother
nira kura kulu].
3S.POSS T.that bull
‘We fear that his older brother is butchering that bull.’

Take the predicate of fearing ma-talaw ‘fear (AT)’ for example. In (3.8) the predicate of fearing ma-talaw subcategorizes for hypothetical situations of the complement clauses which have independent time references from the matrix predicate. Therefore, the complement clause can be inflected for future tense, as in (3.8a), or non-future tense, as in (3.8b).

Another sentence-like property of the full embedded clauses is that its arguments, normally, cannot be omitted. There is no exception even when the embedded trigger NP is coreferential with the matrix NP. Consider the examples in (3.9): (Note that the symbol “∆” indicates a missing argument.)

(3.9)  
a. ma-vana? kura vavahiyan_i Ø [ma-næŋnaŋ nura
ANPST-know T.that woman LNK PT.NFUT-watch NOM.that
va?inayan ciŋra_i].
man 3S.T
‘That woman knows that that man is watching herself/heri.’
b. *ma-vana? kura vavahiyan_i Ø [ma-næŋnaŋ nura
ANPST-know T.that woman LNK PT.NFUT-watch NOM.that
va?inayan ∆_i].
man

The embedded trigger NP ciŋra in (3.9a) can be indicative of the same person or two different persons in the matrix and complement clauses. In (3.9b), the absence of the embedded trigger NP makes this sentence ill-formed.

Repeated again here, the complementation with a full complement clause is distinguished from the control constructions by the criterion that there is no missing
argument in the complement clause. On the contrary, the shared embedded argument in the control constructions must be deleted. Take the Amis actor control construction for example:

(3.10)  

a. Amis actor control:

ma-vana? kura wawaí Ø [ mi-saŋa? ∆₁ / (* ciŋra) tu ?apah].

AT.NPST-can T:that child LNK AT-make 3S.T ACC wine

‗That child can make wine.‘

b. Amis complementation with a full complement clause:


AT.NPST-know T:that child LNK AT.NPST-make 3S.T ACC wine

‗That child knows that he is making wine.‘

The actor control constitutes one type of defective complement clauses in that the coreferential complement actor is deleted, as (3.10a) illustrates. Meanwhile, the shared actor in the embedded clause cannot be recovered by a coreferential personal pronoun, such as ciŋra in (3.10a). In (3.10b), the seemingly coreferential ciŋra in the embedded clause refers to another person other than kura wawa in the matrix cluase. Thus, (3.10b) cannot be analyzed as a control construction. Aside from this, it also implies that the argument structures of the ma-vana? ‘know (AT)’ and ma-vana? ‘can (AT)’ are different.

The predicate of knowledge ma-vana? ‘know (AT)’ selects a full complement clause, as in (3.10b), while the modal predicate ma-vana? ‘can (AT)’ selects a defective complement clause, as in (3.10a). More discussion on Amis actor control will be given in Section 3.2.1.1.

In Amis, the actor control construction and the full complement clause construction belong to two distinct syntactic operations. One type of Amis “raising” constructions is related to complementation with a full complement clause. Compare (3.11a) and (3.11b):

(3.11)  

a. ma-pawan tu kaku Ø [ na-mi-palu? ci aki ci panay-an ].

AT-forget ASP 1S.T LNK PERF-AT-beat T Aki ACC Panay-ACC

‗I forgot that Aki has beat Panay.‘
b. ma-pawan tu kaku ci aki-an, Œ [ na-mi-palu? ____
   AT-forget ASP 1S.T ACC Aki-ACC LNK PERF-AT-beat
   ci panay-an ].
   ACC Panay-ACC
   ‘I forgot that Aki has beat Panay.’

The embedded actor ci Aki in (3.11a) appears in the accusative position of the matrix
clause in (3.11b). Note that the underline “____” in (3.11b) signals a trace left by the
“raised” argument ci Aki-an. The sentence in (3.11b) is an instance of “Raising-to-
accusative” (“RtoA”), which will be discussed in Section 3.2.2.1.

3.1.2 Identification
This section examines the syntactic structures of the complementation with a full
complement clause in Amis. The surface structure of complementation with a full
complement clause seems to be similar to a coordinating construction with two conjoined
clauses. The two structures are both bi-clausal complex sentences. In addition, there is
no overt linker between the two clauses in both constructions, as shown in (3.12).

(3.12)  a. Coordinating structure:
   [ inacila ma-hrōk kami ma-lavi ] Œ [ tayra
   yesterday AT-finish 1P.EXCL AT.NPST-eat.lunch LNK AT.go
   kami i vakun ].
   1P.EXCL OBL Fengbin
   ‘Yesterday we finished eating lunch, (and) we went to Fengbin.’

   b. Subordinating structure:
      cilōmāl tu kaku Œ [ ma-sakørū? kisu ].
      AT.dream ASP 1S.T LNK AT-dance 2S.T
      ‘I dreamed that you were dancing.’

Note that this does not mean that there is no overt coordinating conjunction in Amis.
However, the overt coordinating conjunctions in Amis are only used to link equivalent
constituents other than clauses (En-hsing Liu 2003:52–53). There are three variants of
coordinating conjunction a for linking equivalent constituents: a, a tu and a ci/ci...an.
The distributions of the three variants *a, a tu and a ci/ci...an are as follows. Both *a and a tu are able to connect two adjectival verbs, but a ci cannot, as seen in (3.13).78

(3.13)  takalaw   a / a tu / *a ci / Ø   saluŋan   kisu.
       AT.NPST.tall  CONJ  AT.NPST.beautiful  2S.T
   ‘You are tall and beautiful.’

For connecting two NPs, a tu is used most commonly and a ci/ci...an for personal nouns only. The conjunction a tu is used to link two NPs, such as two trigger NPs in (3.14a)–(3.14c) and two accusative NPs in (3.15a) and (3.15c).

(3.14)  a.  mi-ʔaʔop   ku   matuʔasay   *a / a tu / *a ku / *Ø   wawa.
       AT.NPST-hunt  T  old.man  CONJ  child
   ‘An old man and a child hunt/are hunting/will hunt.’

b.  mi-ʔaʔop   ku   matuʔasay   *a / a tu / a ci / *Ø   aki.
   AT.NPST-hunt  T  old.man  CONJ  Aki
   ‘An old man and Aki hunt/are hunting/will hunt.’

c.  mi-ʔaʔop   ku   matuʔasay   *a / a tu / *a ci / *Ø   ciŋra.
   AT.NPST-hunt  T  old.man  CONJ  3S.T
   ‘An old man and he hunt/are hunting/will hunt.’

(3.15)  a.  ma-ulah   kaku   tu   pawli   *a / a tu / *a ci / *Ø   mami?.
       AT.NPST-like  1S.T  ACC  banan  CONJ  orange
   ‘I like bananas and oranges.’

b.  ma-ulah   kaku   ci   panay-an   *a / *a tu / a ci / *Ø   aki-an.
   AT.NPST-like  1S.T  ACC  Panay-ACC  CONJ  Aki-ACC
   ‘I like Panay and Aki.’

c.  ma-ulah   kaku   tsuwunan   *a / a tu / *a ci / *Ø   ciŋranan.
   AT.NPST-like  1S.T  2S.ACC  CONJ  3S.ACC
   ‘I like you and him.’

Note that the conjunction a tu cannot be analyzed as a combination of a linker *a and an accusative marker tu. If the tu in a tu is treated as an accusative marker for common NPs, it cannot account for the facts that a tu can connect two adjectival verbs like (3.13)79 and

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78 En-hsing Liu (2003:52) indicates that *a is used to connect two adjectival verbs. But she does not mention a tu in her data.
79 In (3.13) the two conjoined adjectival verbs takalaw ‘tall (AT)’ and saluŋan ‘beautiful (AT)’ cannot be analyzed as two nominalized verbs since the nominalized verbs should be suffixed with -ay, such as takalaw-ay ‘the tall one’ and saluŋan-ay ‘the beautiful one’.
two trigger NPs like (3.14). Therefore, *tu* is better not analyzed as an accusative marker. On the contrary, the conjunctions *a ci / a ci...an* are better analyzed as a linker *a* and a trigger/accusative marker *cilci...an* for personal nouns. In (3.14b), *a ci* is used to connect a trigger personal noun, while *a ci...an* is for a conjoined accusative personal noun in (3.15b). Repeated again, none of these coordinating conjunctions discussed above can occur between two linked clauses, as shown in (3.16) and (3.17).

(3.16) a. unini a vavahiyan mi-tañtañ tu həmay Ǿ [ ura PRED.this LIG woman AT.NPST-cook ACC rice LNK PRED.that vaʔinayan mi-ȵiŋuy ].
man AT.NPST-take a.bath
‘This woman, (she) is cooking, and that man, (he) is taking a bath.’

b. *unini a vavahiyan mi-tañtañ tu həmay a/ a tu/ a ci [ ura vaʔinayan mi-ȵiŋuy ].
PRED.that man AT.NPST-take. a.bath

(3.17) a. ma-vana? kaku Ǿ [ tayra i taypak inacila ciŋra ].
AT.NPST-know 1S.T LNK AT.go OBL Taipei yesterday 3S.T
‘I know that he went to Taipei yesterday.’

b. *ma-vana? kaku a/ a tu/ a ci [ tayra i taypak inacila ciŋra ].
AT.NPST-know 1S.T LNK AT.go OBL Taipei yesterday 3S.T

In order to figure out the structure of the complex sentences with a full embedded clause, let us compare it with a coordinating structure with two conjoined clauses. In Amis, a subordinating construction with a complement clause and a coordinating construction with two conjoined clauses differ mainly in three respects:

First, the complement clause occupies an argument position in the complex sentences, while the second clause of a conjoined construction is a parallel independent clause which is not subcategorized for by the verb of the preceding clause. For instance, the sentential complement *tayni ciŋra inacila* ‘he came yesterday’ in (3.18a) is subcategorized for by the complement-taking verb *ma-pawan* ‘forget (AT)’. The whole sentential complement can be replaced by an anaphorical expression *tunini a təmak* ‘this thing (ACC)’ in (3.18b).
(3.18) a. ma-pawan tu kaku Ø/*tu/*tu(ni)ni/*tu(ni)ra [ tayni ciŋra inacila ].
   AT-forget ASP 1S.T LNK AT.come 3S.T yesterday
   ‘I forgot that he came yesterday.’

b. ma-pawan tu kaku tunini [ a ɬəmak ].
   AT-forget ASP 1S.T ACC.this LIG thing
   ‘I forgot this thing.’

Note that a linker homophonous with an accusative marker is used to connect a full complement clause in several Formosan languages, such as cu? in Mayrinax Atayal, qa in Puyuma, and tu in Bunun/Kavalan/Paiwan. However, Amis does not allow a linker homophonous with an accusative marker, such as tu/tu(ni)ni/tu(ni)ra in (3.18a), to appear between the matrix clause and full complement clause.

In contrast, the linked clause of a coordinating construction cannot be replaced by an anaphoric expression since it is located in a non-argument position. Thus, tayni kisu inacila ‘you came yesterday’ in the coordinating conjunction sentence in (3.19a) cannot be substituted by an anaphoric expression, such as tunini a ɬəmak ‘this thing (ACC)’ in (3.19b).

(3.19) a. [ tayni ciŋra anini a rumiał ] Ø [ tayni kisu inacila ].
   AT.come 3S.T now LIG day AT.come 2S.T yesterday
   ‘He came today and you came yesterday.’

b. *[ tayni ciŋra anini a rumiał ] [ tunini a ɬəmak ].
   AT.come 3S.T now LIG day ACC.this LIG thing

Second, the two linked clauses can switch their positions in a coordinating structures but not in a complementation construction. Take English for example.

(3.20) a. Coordination:
   [ I like cats ] and [ you like dogs ].

b. Complementation:
   [ Sandra thinks] that [I like cats].

(3.21) Interchangeability Test:
a. Coordination:
   [You like dogs] and [I like cats].

b. Complementation:
   *[I like cats ]that [ Sandra thinks].
The two clauses linked by the coordinating conjunction *and* in (3.20a) can be switched, as in (3.21a). In contrast, the matrix and complement clauses linked by the complementizer *that* in (3.20b) cannot be switched, as in (3.21b). There are some exceptions for the interchangeability test. When the two clauses linked by the coordinating conjunction have a relation of time sequence, as in (3.22), or cause-effect, as in (3.23), the two clauses cannot be switched.

(3.22) Time sequence:
   a. [ He took a shower ] and [ he went to bed ].
   b. *[ He went to bed ] and [ he took a shower ].

(3.23) Cause-effect sentence:
   a. [ She was not feeling well ] and [ she did not go to work yesterday ].
   b. *[ She did not go to work yesterday ] and [ she was not feeling well ].

Because of these exceptions, this study avoids examining complex sentences whose bi-clauses might constitute a time sequence or cause-effect relation for all the interchangeability tests.

Let’s use the interchangeability test to examine complementation with a full complement clause in Amis. The two clauses within a complex sentence with a full complement clause cannot be switched, as in (3.24).

(3.24) a. [ mi-halat<sub>n</sub> kaku ] Ø [ na-ma-t<sub>ŋ</sub>il tu aku kuŋha? isu ].
   AT.NPST-think 1.S.T LNK PERF-PT-hear ASP 1.S.NOM T voice 2S.POSS
   ‘I think that I have heard your voice.’

   b.* [ na-ma-t<sub>ŋ</sub>il tu aku kuŋha? isu ] Ø [ mi-halat<sub>n</sub> kaku].
   PERF-PT-hear ASP 1S.NOM T voice 2S.POSS LNK AT.NPST-think 1S.T

On the contrary, the two conjoined clauses are exchangeable, as shown in (3.25).

(3.25) a. [ ura wawa, ma-ulah Ø k<sub>um</sub>a?en tu piyan ] Ø
   PRED.that child AT.NPST-like LNK eat<sub>AT</sub> ACC candy LNK
   [ ura matu?asay, ma-ulah Ø k<sub>um</sub>a?en tu ?əpah ].
   PRED.that old.man AT.NPST-like LNK eat<sub>AT</sub> ACC wine
   ‘That child, (he) likes to eat candies, and that old men, (he) likes to drink wine.’
b. [ ura matu?asay, ma-ulaḥ Ø k<um>a?ən tu ?əpah ] Ø
   PRED.that old.man AT.NPST-like LNK eat<AT> ACC wine LNK
ura wawa, ma-ulaḥ Ø k<um>a?ən tu piyan ].
PRED.that child AT.NPST-like LNK eat<AT> ACC candy
‘That old men, (he) likes to drink wine, and that child, (he) likes to
   eat candies.’

Third, it is known that the wh-element cannot be extracted out of a conjoined clause,
but it can be moved out of a subordinate clause, such as a full complement clause.
According to Ross’s (1967) “Coordinate Structure Constraint” (CSC), an element from
one conjunct cannot be moved out of that coordinate structure. Compare the English
examples in (3.26) and (3.27):

(3.26) a. Coordination:
       Mary drinks coffee and Kevin drinks tea.

b. Subordination:
       Mary thinks that Kevin drinks tea.

(3.27) a. Extraction out of a conjunct:
       *What does Mary drink coffee and Kevin drinks ___?

b. Extraction out of a complement:
       What does Mary think that Kevin drinks ___?

The wh-element (e.g., what) cannot be extracted out of a coordinate clause, as in (3.27a).
In contrast, extraction out of the complement that-clause is permissible, as in (3.27b).

Before applying the wh-extraction test, let us have some brief understanding about
Amis nominal interrogatives. Wh-questions are formed in two ways in Amis: wh-in-situ
questions and pseudo-cleft wh-questions. As to the wh-in-situ questions, the wh-element
can remain in its original position, such as (3.28b) and (3.28c).

(3.28) a. k<um>a?ən kura wawa tu vutiŋ.
      eat<AT.NPST> T.that child ACC fish
      ‘That child eats/is eating/will eat a fish.’

b. k<um>a?ən cima tu vutiŋ?
      eat<AT.NPST> T.who ACC fish
      ‘Who eats/is eating/will eat a fish?’

c. k<um>a?ən kura wawa tu maʔan?
      eat<AT.NPST> T.that child ACC what
      ‘The child eats/is eating what?’
In addition, a *wh*-element can appear in the predicate position of an equational sentence.

(3.29) a. \[ \text{NP } u \text{ vutiŋ } \text{ [NP ku ma-kaʔon-ay nura wawa } \]. \]

PRED fish T PT.NFUT-eat-NMZ NOM.that child

‘What that child ate/eats/is eating is a fish.’

b. \[ \text{NP } u \text{ maʔan } \text{ [NP ku ma-kaʔon-ay nura wawa } \]. \]

PRED what T PT-eat-NMZ NOM.that child

‘What did the child eat?’

(lit. ‘The eating of that child is what?’)

The “NP (predicate)-NP (trigger)” equational structure in (3.29) is the so-called pseudo-cleft construction80, in which an argument, such as *u vutiŋ ‘fish (PRED)’ in (3.29a) and *maʔan ‘what’ in (3.29b), is located in the predicate, while the rest other than *maʔan which undergoes nominalization is placed in the trigger position. Although, strictly speaking, the *wh*-questions in the Amis pseudo-clefts, as in (3.29b), are not the same as *wh*-questions formed by means of *wh*-extraction (e.g., What does the child eat? in English), the same constraint (i.e., CSC) still applies to the cleft construction, as exemplified in (3.30).

(3.30)  a. *What is it [ that Mary drinks coffee and and Kevin drinks ____ ]?

b.  What is it [ that Mary thinks that John drinks ____ ]?

Based on this constraint, the *wh*-extraction test is used to examine if the Amis complex sentence with a Ø-marked clause is a coordinate structure and, accordingly, the null linker Ø is a coordinating conjunction. It can be concluded that it is not an instance of coordinate construction if *wh*-element is allowed to move out of the Ø-marked clause in Amis. In (3.32), three possible *wh*-questions correspond to (3.31).

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80 In the pseudo-cleft construction, the trigger nominalized clause stands for the background knowledge (or old information), while the predicate is devised for a communicative focus (or new information). In the *wh*-questions in the pseudo-cleft constructions, the *wh*-words normally occupy the predicate positions since they are used to elicit new information in most cases.
In (3.32a) the wh-element *maʔan* ‘what’ remains in situ. The wh-element *maʔan* in (3.32b) is located in the predicate of a pseudo-cleft. There is no overt movement involved in (3.32a)–(3.32b). The wh-word *maʔan* in (3.32c) is extracted out of the argument position in the clausal complement and tugged into the predicate position of the matrix clause. This shows that a complex sentence with a full embedded clause, such as (3.31), cannot be a coordinating structure. Moreover, such structure is better analyzed as a subordinating structure of a complement type, in which the inter-clausal null linker (in this case Ø) is treated as a complementizer.

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81 In the GB framework, it is assumed that pseudo-cleft constructions involves a phonetically null operator, which is denoted by the symbol “___” in (3.32b), and that the null operator undergoes wh-movement (though this movement is not indicated in (3.32b)).
3.2 Defective embedded clauses

This section analyzes the syntactic properties and structures of the defective embedded clauses in Amis. In this study a “defective embedded clause” refers to an embedded clause of a complement type with a missing argument. The defective embedded clauses are divided into two types: control and raising. Control and raising constructions are semantically and structurally different\(^{82}\) despite the fact that both are involved with an empty category in the embedded clauses. Amis is no exception for this distinction. Compare (3.33) and (3.34):

(3.33) Actor control:

\[
\text{tayni} \quad \text{kura kapah} \quad \emptyset \quad [\text{that} \quad \text{young.man} \quad \text{LNK} \quad \text{eat} <\text{AT}> \\
\text{tu} \quad \text{homa} \quad \text{ty} \quad \text{rice}
\]

‘That young man comes/is coming to eat rice.’

(3.34) “Raising-to-accusative” (“RtoA”):

\[
\text{ma-vana} \quad \text{kunini a wawa} \quad \text{tura} \quad \text{hayin} \quad \emptyset \quad [\text{that} \quad \text{girl} \quad \text{LNK} \quad \text{eat} <\text{AT} \text{NPST}> \\
\text{i} \quad \text{tu} \quad \text{homa} \quad \text{ty} \quad \text{rice}
\]

‘This child knows (that) that girl is eating rice.’

Actor control and “raising-to-accusative” (“RtoA”) constructions contain a defective complement clause in which the trigger NP is missing. But the two constructions differ in many aspects. First, the matrix trigger NP, such as \textit{kura kapah} in (3.33), is the actor for both the matrix and embedded verbs in actor control constructions. The matrix actor \textit{kura kapah} controls the reference of the missing trigger NP in the complement clause (represented by “\(\Delta\)”). The overt matrix actor \textit{kura kapah} and covert embedded actor both occupy a theta position. On the other hand, in “RtoA” example (3.34), the embedded

\(^{82}\) It is assumed that control and raising are both structurally and semantically different in the Chomskyan perspective (Chomsky 1973, Chomsky & Lasnik 1977, Chomsky 1981, and Chomsky & Lasnik 1993). Meanwhile, there have been a considerable number of proposals which deny this clear-cut dividing line between control and raising, including Lexical Functional Grammar (Bresnan 1982), Generalized Phrase Structure Grammar (Gazdar et al. 1985), Categorial Grammar (Jacobson 1992), Head-driven Phrase Structure Grammar (Pollard & Sag 1994), etc. The distinction between Raising and Control is taken as mainly involving semantic properties of the predicates instead of structural derivations. In the period of Minimalist Program, Hornstein (1999) also removed the structural distinction between control and raising. Both raising and control are taken as involving movement. Note that this study is in line with the Chomskyan tradition for control and raising.
trigger argument is syntactically realized as the accusative argument *tura kayin* in the matrix clause. Semantically, the matrix accusative NP *tura kayin* is the actor of the complement clause, not the patient of the matrix clause. That is, the matrix accusative NP *tura kayin* does not occupy a theta position, but its trace in the embedded clause does. We will discuss the Amis control constructions and raising constructions, separately, in Section 3.2.1 and Section 3.2.2.

### 3.2.1 Control constructions

The Amis control constructions can be divided into two types: actor control and patient control. As their names suggest, the controller of the actor control is an actor of the matrix clause, while the the controller of the patient control is a patient of the matrix clause.

#### 3.2.1.1 Actor control construction

In Amis, the actor control construction is a bi-clausal construction in which the actor of the matrix predicate controls the reference of the missing argument in the complement clause. The actor control verbs are mostly achievement predicates, (e.g., *mi-nanam* ‘learn (AT)’ in (3.35)), desirative predicates (e.g., *ma-ŋalay* ‘want (AT)’ in (3.36)), predicates of knowledge (e.g., *ma-pawan* ‘forget (AT)’ in (3.37)), and phasal predicates (e.g., *ma-hrək* ‘finish (AT)’ in (3.38)).

(3.35)  
```
mi-nanam kaku_i Ø [ s<um>ual Δ_i tu caciyaW nu paŋcah].
AT.NPST-learn 1S.NOM LNK AT-speak ACC language POSS Amis
‘I learn to speak the language of Amis.’
```

(3.36)  
```
ma-ŋalay kura kayin_i Ø [ mi-kalavu Δ_i ].
AT.NPST-want T.that girl LNK AT-marry.a.man
‘That girl wants to marry (a man).’
```

(3.37)  
```
ma-pawan kis_u Ø [ mi-taŋtaŋ Δ_i tu hɔmay ].
AT.NPST-forget 2S.T LNK AT-cook ACC rice
‘You forget to cook rice.’
```

(3.38)  
```
ma-hrək tu kura tamləw_i Ø [ mi-pacuk Δ_i tu kuluŋ ].
AT-finish ASP T.that person LNK AT-butcher ACC bull
‘That person finished butchering a bull.’
```
No overt clause linker occurs between the matrix clause and complement clause in the actor control construction in the Dong-hsin Dialect. Wu (1994:34) indicates that there is “no intervening conjunction” in the Amis “serial verb construction” (that is, the actor control in my analysis). But En-hsing Liu (2003:109) indicates that “there is an optional morpheme a intervening between the matrix and the embedded verbs in control sentences”. Her example is as below:

mi-satapan tu ci aki (a) mi-kerit/*pa-kerit tu rëgas.
AT-start ASP T Aki A AT-mow/CAUS-mow ACC grass
‘Aki tried to mow the grass.’

This putative “linker” a, as in (3.39), is better analyzed as a prefix a- which indicates a future event, as evidenced for two reasons. First, the “suspicious” inter-clausal linker a can appear in a mono-clausal sentence.

(3.40)  mi-kërit / a-mi-kërit tu ci aki tu rëgas.
AT-mow / FUT-AT-mow ASP T Aki ACC grass
‘Aki mowed/will mow grass.’

In (3.40) the prefix a- attached to the verb mi-kërit turns it into a future tense. If the preverbal a is a clause linker, why can it occur in a mono-clausal sentence?

Second, the “pre-verbal” a is not allowed to occur in some cases, such as (3.41b), whereas it is allowed in some cases, such as (3.42b).

(3.41)  a.  ma-hrëk tu ci arik_i O [ mi-rëpër Δ_i tu vavuy ].
AT.NPST-finish ASP T Arik LNK AT-catch ACC pig
‘Arik finished catching a pig.’

b. *ma-hrëk tu ci arik_i O [ a-mi-rëpër Δ_i tu vavuy ].
AT.NPST-finish ASP T Arik LNK FUT-AT-catch ACC pig

(3.42)  a.  ma-ñalay ci arik_i O [ mi-rëpër Δ_i tu vavuy ].
AT.NPST-want T Arik LNK AT-catch ACC pig
‘Arik wants to catch a pig.’

b. ma-ñalay ci arik_i O [ a-mi-rëpër Δ_i tu vavuy ].
AT.NPST-want T Arik LNK FUT-AT-catch ACC pig
If a is a clause linker for the Amis defective complement clauses, it is hard to explain why it cannot occur in some cases, such as (3.41b). On the other hand, if a- is taken to be a future tense prefix, it can account for why some complement verbs cannot take the future tense marker a- in the actor control construction. Take (3.41) for example. The temporal interpretation of the embedded clauses is confined by the matrix verb ma-hrək ‘finish (AT)’ in (3.41). Accordingly, the embedded verb prefixed with the future marker a- is ungrammatical, as seen in (3.41b).

In addition, the embedded verbs prefixed with a future tense marker can be found in other Austronesian languages. Take Malagasy\(^{83}\) for example:

\[
(3.43) \quad \text{Malagasy: (Potsdam & Polinsky 2007:286)}
\]

\[
\text{Mihetira} \text{ Rabe mba [ h-ahita gidro any an-tsena ]}
\]

\[
\text{think.AT} \text{ Rabe COMP FUT-see.AT lemur LOC ACC-market}
\]

‘Robe thinks he will see a lemur at the market.’

Potsdam & Polinsky (2007:285) states that the embedded verb is required to have future/irrealis morphology prefixed with h(o)- when the linker for the missing subject construction (similar to subject control construction in English) is mba in Malagasy.

Considering that there is no overt linker between clauses/predicates, the Amis actor control construction may be analyzed as a serial verb construction, such as Wu (1994, 2000)\(^{84}\). A serial verb construction (abbreviated as SVC) is a single clause with a verb-verb sequence (Foley and Olson 1985, Crowley 2002, Aikhenvald 2006, etc.). The verb-verb sequence of SVC constitutes a single VP which selects only one subject. And the single clause implies that there is only one TAM domain, one negation scope and the like. Obviously, SVC is structurally different from subordination and coordination in that SVC is a mono-clausal construction, whereas subordination and coordination are bi-clausal.

The surface strings of the Amis actor construction are similar to “same-subject serial construction” in that two verbs share the same actor. The structure of the “same-subject

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\(^{83}\) Malagasy is an Austronesian language spoken in Madagascar, an island nation in the Indian Ocean off the southeastern coast of Africa.

\(^{84}\) Wu’s (1994:34) SVC refers to “a construction in which events/states sharing a common agent/experiencer and being coded by two or more verbs are merely juxtaposed, with no intervening conjunctions”. 
serial construction” can be schematized as: NP1 V1 V2, as illustrated by an Oceanic language Paamese.\(^{85}\)

(3.44) Paamese: (Crowley 2002:40)

\[
\begin{array}{ll}
\text{inau} & \text{nauvaa} \quad \text{toni} \quad \text{aute} \quad \text{navule}.\\
1S & 1S:\text{REAL}-\text{go} \quad \text{miss} \quad \text{place} \quad \text{Navul}
\end{array}
\]

‘I went past (the village of) Nanul.’

In (3.44) both verbs nauvaa and tooni share the same subject inau ‘I’. Note that only the first verb is inflected for TAM, but not the second verb. This is called “nuclear-layer serialization”, in which there is only a single set of TAM on one verb of the verb sequence. In contrast, core-layer serialization has the same set of TAM which is reflected on both verbs in sequence, as illustrated in Guerin’s (2008) example in Ma\text{\textae}a.\(^{86}\)

(3.45) Ma\text{\textae}a: (Guerin 2008:334)

\[
\begin{array}{ll}
\text{Na-} & \text{ka-ya}^{87} \quad \text{ka-suvu}.\\
1S-\text{say} & 1S: \text{IRR}-\text{go} \quad 1S: \text{IRR}-\text{dive}
\end{array}
\]

‘I wanted to go diving./I said I was going to dive.’

(lit. I said I will do I will dive.)

Example (3.45) shows that both verbs ka-ya and ka-suvu carry the same irrealis marking. Also, the shared actor ka- appears in both verbs.

Third, both verbs are lexical verbs in that each can exist as a verbal predicate in a single clause (Sebba 1987). For instance, the two verbs in mi-hayla ‘agree (AT)’ and mi-cakay ‘buy (AT)’ in the actor control sentence (3.46) function as separate main verbs in (3.47a) and (3.47b).

(3.46) \text{mi-hayla}\quad tu\quad \text{ci vaki},\quad \text{Ø}\quad [\text{mi-cakay}\quad \Delta_i\quad tu\quad \text{paliin}].

\begin{array}{ll}
\text{AT-agree} & \text{ASP}\quad \text{T}\quad \text{grandfather}\quad \text{LNK}\quad \text{AT-buy}\quad \text{ACC}\quad \text{car}
\end{array}

‘Grandfather agreed to buy a car.’

(3.47) a. \text{mi-hayla}\quad tu\quad \text{ci vaki},.

\begin{array}{ll}
\text{AT-agree} & \text{ASP}\quad \text{T}\quad \text{grandfather}
\end{array}

‘Grandfather agreed.’

---

\(^{85}\) Paamese refers to an Oceanic language spoken in a small island of Vanuatu called Paama. The native speakers do not have a term for their language. “Paamese” was first used by the linguist Terry Crowley.

\(^{86}\) Ma\text{\textae}a is an Oceanic language spoken in the eponymous island Ma\text{\textae}a of Vanuatu (Guerin 2008).

\(^{87}\) The symbol “\(\chi\)” is a linguo-labial fricative.
b. mi-cakay ci vaki\textsubscript{i} tu palili\textsubscript{n}j.
\textsc{at.npst-buy T grandfather ACC car}
‘Grandfather buys a car.’

Based on the above, the surface appearance of the construction with a verb-verb sequence resembles the same-subject serial construction in three respects. First, there is no linking element between the contiguous verbs. Second, both verbs share an argument in the relevant construction (cf. Wu 1994\textsuperscript{88}).

The syntactic structure of the Amis actor control construction is better not analyzed as an instance of SVC for the following reasons, however.

First of all, the verbs in the constructions with a shared actor do not share the same tense/aspect/mood marking. No TAM constrain is found in the first verb. However, there is a TAM constraint on the choice of TAM in the second verb of the constructions with a share actor (cf. En-hsing Liu 2003). The second verb in verb-verb sequence cannot select a full range of TAMs.

\begin{equation}
\text{(3.48) a. mi-tanam ci\textsubscript{ra}i \emptyset [ mi-\text{r}\textsubscript{ap}\textsubscript{or} tu \?ayam anini ].}
\text{\textsc{at.npst-try 3s.t Lnk AT-catch ACC bird now}}
\text{‘He tries to catch a bird now.’}
\end{equation}

\begin{equation}
\text{b. mi-tanam ci\textsubscript{ra}i \emptyset [ a-mi-\text{r}\textsubscript{ap}\textsubscript{or} tu \?ayam anulavak ].}
\text{\textsc{at.npst-try 1s.t Lnk Fut-AT-catch ACC bird tomorrow}}
\text{‘He tries to (will) catch a bird tomorrow.’}
\end{equation}

\begin{equation}
\text{c. *mi-tanam ci\textsubscript{ra}i \emptyset [ na-mi-\text{r}\textsubscript{ap}\textsubscript{or} tu tu \?ayam ].}
\text{\textsc{at.npst-try 3s.t Lnk Perf-AT-catch ASP ACC bird}}
\end{equation}

Example (3.48) shows that the second verbs can only be inflected for a trigger marker and/or a future tense prefix \textit{a-}.

Second, unlike the two verbs in an SVC, each of the two verbs in the relevant construction can be negated separately. For instance, both verbs in (3.49) can be negated separately, as in (3.50a) and (3.50b), and simultaneously, as in (3.50c).

\textsuperscript{88} Wu (1994:35) observes that “the noun or pronoun manifesting the same actor cannot be present after the second verb.”
Third, in a serializing language, two or more verbs contained within a single clause often form one semantic unit. Moreover, the verbs in sequence of SVC often have a meaning different from the meanings of the verbs separately (Aikhenvald 2006), as evidenced in Bruce’s (1998) examples of Alamblak

99

(3.49) ca?ay ka-ŋalay ciŋra Δi [ ciwawa Δi ].
NEG KA.AT-want 3S.T LNK AT.give.birth.to.a.baby
‘She does not want to give birth to a baby.’

(3.50) a. ca?ay ka-ŋalay ciŋra Δi [ ciwawa Δi ].
NEG KA.AT-want 3S.T LNK AT.give.birth.to.a.baby
‘She does not want to give birth to a baby.’

b. ma-ŋalay ciŋra Δi [ ca?ay ka-wawa Δi ].
AT.NPST-want 3S.T LNK NEG KA.AT-give.birth.to.a.baby
‘She wants not to give birth to a baby.’

c. ca?ay ka-ŋalay ciŋra Δi [ ca?ay ka-wawa Δi ].
NEG KA.AT-want 3S.T LNK NEG KA.AT-give.birth.to.a.baby
‘She does not want not to give birth to a baby.’

In (3.51a) the two events muh ‘climb’ and hambray ‘search for’ are perceived as a single event. The example (3.51b) shows that it is ungrammatical if the second verb hambray ‘search for’ is replaced with another semantically similar verb hēti ‘see’. This suggests that the verb-verb chunk constitutes a single semantic unit. But no such example is found in our data: the second verb in constructions with a shared actor is not restricted to particular lexical items. Thus, the two verbs do not form a single lexical unit in actor control in Amis, unlike SVC, and therefore, they cannot be taken to be sub-parts of a single verb in SVC.

99 Alamblak is a language spoken in the Angoram District of East Sepik Province, Papua New Guinea.
As seen above, the Amis construction with a shared actor cannot be treated as SVC. Instead, these facts suggest that the construction in question is better analyzed as an instance of complementation involving actor control, as mainly supported by the fact that the two seemingly juxtaposed verbs are not necessarily marked with the same TAM. There is no TAM restriction on the first verb, while the TAM on the second verb is restricted to a trigger marker and/or a future tense marker. This suggests that the two verbs have separate TAM domains in a bi-clausal complex structure rather than a shared TAM in a monoclausal SVC.

It should be noted that the complement clauses of Amis actor control are not nonfinite like the infinitival complements of subject control in other languages, such as English. However, the semantics of the complement clauses in actor control are confined to an unrealized proposition, as in (3.35)–(3.37), or a back-grounded event, as in (3.38). In addition, the TAMs of the embedded verbs are defective in that they are confined to non-past events. Crosslinguistically, it is also seen in other languages whose complement clauses of control are defective (mainly, subjunctives) instead of infinitives, such as Albanian (Landau 2004), Hebrew (Landau 2004), Japanese (Uchibori 2000), and Persian (Hashemipour 1989 and Ghomeshi 2001). As introduced above, Amis actor control shows a similar situation, as evidenced in its defective TAMs on the complement clauses.

Note that my analysis is still different from En-hsing Liu’s (2003) PRO analysis, in which the empty category PRO is located in the non-finite embedded clause of the actor control. In En-hsing Liu’s (2003) try-type construction, the empty category of the complement clause (that is, PRO) is confined to actor. Another difference is that En-hsing Liu (2003:109) argues that the try-type construction (that is, the actor control construction in our analysis) is a complex sentence with “a complement clause headed by the embedded verb” and, furthermore, the “linker” a is analyzed as a complementizer. This complement analysis is based on her data in which an optional morpheme a occurs between the two verb sequences. The present study proposes that the optional “linker” a in the actor control construction is better treated as a future tense prefix a- of the following verb, as discussed above.

Contrary to Wu’s (1994) and En-hsing Liu’s (2003) observation, the controlee in the Amis actor control construction need not be the embedded actor. Both AT and NAT
second verbs are allowed to occur in the verb-verb sequence, as the examples in (3.52) illustrate.

(3.52) a. ma-ŋalay kura matuʔasayi Ø [mi-liput Δi
AT.NPST-want T.that old.man LNK AT-take.care.of
tura vavahiyan a wawa].
ACC.that girl LIG child
‘That old man wants to take care of that daughter.’

b. ma-ŋalay kura matuʔasayi Ø [liput-ən
AT.NPST-want T.that old.man LNK take.care.of-PT
nura vavahiyan a wawa Δi ].
NOM.that woman LIG child
‘That old man wants to be taken care of by that daughter.’

There is, however, a constraint as to which argument may be the missing argument in actor control: the missing complement argument coreferential with the matrix actor has to be the trigger NP. Wu (2006) reports that the trigger-only constraint on the controlee of Amis actor control and calls it “syntactic pivot” based on the Role and Reference Grammar (RRG) terminology. On the other hand, the controller in the Amis actor control construction need not be a trigger NP. The controller can be either trigger, as in (3.53), or nominative, as in (3.54a). The only constraint in the actor control construction is that the matrix clause and embedded clause cannot be both NAT-marked, as (3.54b) illustrates.

(3.53) a. ma-pawan tu kura matuʔasayi Ø [ma-koʔar Δi tura wawa].
AT-forget ASP T.that old.man LNK AT-scold ACC.that child
‘That old man forgot to scold that child.’

b. ma-pawan tu kura matuʔasayi Ø [ma-koʔar Δi nura wawa].
AT-forget ASP T.that old.man LNK PT-scold NOM.that child
‘That old man forgot being scolded by that child.’

(3.54) a. ma-pawan tu nura matuʔasayi Ø [ma-koʔar Δi _____j ]
PT-forget ASP NOM.that old.man LNK AT-scold
kura wawaij,
T.that child
‘That old man forgot to scold that child.’

b. *ma-pawan tu nura matuʔasayi Ø [ma-koʔar Δi
PT-forget ASP NOM.that old.man LNK PT-scold
nura wawa ].
NOM.that child
Notice that the controlee (that is, the missing argument) of the actor control construction cannot be filled with an overt argument, such as ciŋra in (3.55b).

(3.55) a. ma-nanam ciŋra; Ø [ mi-palu? Δŋ tu vaʔinay ].
   AT.NPST-be.accustomed 3S.T LNK AT-beat ACC husband
   ‘That woman is accustomed to beat (her) husband.’

b. *ma-nanam ciŋra; Ø [ mi-palu? ciŋra; tu vaʔinay ].
   AT.NPST-be.accustomed 3S.T LNK AT-beat 3S.T ACC husband

The syntactic structure of the Amis actor control construction has several variations. The shared argument in the actor control construction can occur in the matrix clause immediately after the matrix verb, as in (3.56a), or in the sentence-final position, as in (3.56b). But it cannot occur in the embedded clause. As shown in (3.56c), the empty category of the actor complement cannot be replaced with an overt item.

(3.56) a. mi-tanam ci vaki; Ø [ mi-pacakay Δŋ tu luma? nira ].
   AT.NPST-try T grandfather LNK AT-sell ACC house 3S.POSS
   ‘Grandfather tries to sell his house.’

b. [ [ mi-tanam ____; Ø [ mi-pacakay Δŋ tu luma? nira ] ]
   AT.NPST-try LNK AT-sell ACC house 3S.POSS
   ci vaki; .
   T grandfather
   ‘Grandfather tries to sell his house.’

c. *mi-tanam Δŋ Ø [ mi-pacakay ci vaki; tu luma? nira ].
   AT.NPST-try LNK AT-sell T grandfather ACC house 3S.POSS

It is noteworthy that the sentence-final controller ci Aki in (3.56b) does not belong to either the matrix clause or the complement clause. If the sentence-final trigger NP ci Aki in (3.56b) belongs to the embedded clause, it should be able to occur right after the embedded verb, as illustrated in (3.56c). However, (3.56c) is ungrammatical. Neither does it occur in the matrix clause because it should be located immediately after the matrix verb, as in (3.56a). What’s more, a sentential adverb, such as inacila ‘yesterday’
in (3.57) can be adjoined to the whole sentence in the same sentence-final position as ci Aki in (3.56b).\textsuperscript{90}

(3.57) \[ \text{mi-tanam ci vaki}_i \quad \text{[Ø mi-pacakay } \Delta_i \text{ tu luma? nira]} \]
\text{AT.NPST-try T grandfather LNK AT.sell ACC house 3S.POSS}
\text{inacila. yesterday}

‘Grandfather tries to sell his house yesterday.’

Based on the above discussion, the sentence-final trigger NP is better analyzed as an NP adjoined to the whole sentence (that is, CP in GB’s terminology).

### 3.2.1.2 Patient control construction

Patient control construction refers to a complementation construction where the patient in the matrix clause controls the reference of the empty category in the embedded clause. The patient control construction is very similar to the actor control construction, as introduced in Section 3.2.1.1. Both are bi-clusal constructions in which a matrix clause is followed by a defective complement clause. In addition, there is no overt linker between the matrix clause and complement clauses.\textsuperscript{91} But the actor control and patient control constructions are structurally different. Take the verb \textit{mi-hai} ‘agree’ to demonstrate the differences.

(3.58) Actor control construction:

a. \textit{mi-hai} kunini a tapaŋi Ø \[ pakaʔon \quad \Delta_i \text{ tu kuluŋ}. \]
\text{AT.NPST-agree T.this LIG chief LNK AT.look.after ACC bull}

‘This chief agrees to look after bulls.’

b. \*\textit{mi-hai} kunini a tapaŋi Ø \[ pakaʔon ciŋraʔi j tu kuluŋ].
\text{AT.NPST-agree T.this LIG chief LNK AT.look.after 3S.T ACC bull}

\textsuperscript{90} Thanks for Yuko Otsuka bringing this to attention. Yuko Otsuka suggests that it is feasible to test if an adverbial phrase can replace the sentence-final position of the trigger NP in the actor control. (personal communication, August 10, 2010) If feasible, then this is an A-bar (that is, non-argument) position. If not, then, it is an A(rgument) position.

\textsuperscript{91} Wu’s (1994, 2000, 2006) data of Amis patient control constructions also do not show any overt clause linker. But En-hsing Liu (2003) cites examples of persuade-type construction that has a clause linker \textit{a}. The putative clause linker \textit{a} in En-hsing Liu (2003) is analayzed as a future marker prefixed to the embedded verb in the present study. The supporting evidence is the same as that provided for the actor control construction in Section 3.2.1.1.
In the actor control sentence (3.58a), the actor control verb mi-hai is a two-place predicate which selects an actor and a defective sentential complement. The matrix actor controls the reference of the embedded null argument. The patient control verb mi-hai in (3.59a) is a three-place predicate which selects an agent, a patient, and a defective sentential complement. It is not the matrix actor, but the matrix patient that is coreferential with the empty category in the defective complement clause. In addition, the controlees in both actor/patient control constructions cannot be overtly expressed, as shown in (3.58b) and (3.59b). Note that the Amis patient control construction is not an instance of raising as defined in the Generative Grammar. The reason is because the matrix patient of the patient control cannot be “recovered” in the embedded actor position, as (3.60b) illustrates.

The patient control verbs are mainly manipulative predicates (e.g., mi-lalay/lalay-en ‘dissuade (AT/PT)’ in (3.61) and mi-paci?ci /paci?ci-en ‘force (AT/PT)’ in (3.62)),

92 My language consultants indicate that the sentence like (3.59b) is no longer a single sentence but two sentences instead.
utterance predicates (e.g., *mi-tahiŋ*/*ma-tahiŋ* ‘call (AT/PT)’ in (3.63)), and desirative predicates (e.g., *ma-ulah* ‘like (AT)’ in (3.64)).

(3.61) a.  

\[ \text{mi-lalaŋ} \ kaku \ tisuwanan_{i} \ \emptyset \ [\ k<\text{um}>a\?\text{en} \ \Delta_{i} \ tu \ ?\text{apah} ] . \]

AT.\text{NPST}-\text{dissuade} 1\text{S}.T \ 2\text{S}.\text{ACC} \ LNK \ \text{eat}<\text{AT}> \ \text{ACC} \ \text{wine}  

‘I dissuade you from drinking wine.’

(lit. ‘I dissuade you from eating wine.’)

b.  

\[ \text{lalaŋ-an} \ aku \ kisu_{i} \ \emptyset \ [\ k<\text{um}>a\?\text{en} \ \Delta_{i} \ tu \ ?\text{apah} ] . \]

dissuade-PT.\text{FUT} \ 1\text{S}.\text{NOM} \ 2\text{S}.T \ LNK \ \text{eat}<\text{AT}> \ \text{ACC} \ \text{wine}  

‘I will dissuade you from drinking wine.’

(lit. ‘I will dissuade you from eating wine.’)

(3.62) a.  

\[ \text{mi-paci?ci} \ kita \ tunini \ a \ tamław_{i} \ \emptyset \ [\ \text{mi-?a}\text{lop} \ \Delta_{i} \ ] . \]

AT.\text{NPST}-\text{persuade} 1\text{P}.\text{INCL}.T \ \text{ACC}.\text{this} \ \text{LIG} \ \text{person} \ \text{LNK} \ \text{AT-hunt} \ \text{i} \ \text{lutuk} \ ] . \]

\text{OBL} \ \text{mountain}  

‘We persuade this person to hunt in a mountain.’

b.  

\[ \text{paci?ci-an} \ ita \ kunini \ a \ tamław_{i} \ \emptyset \ [\ \text{mi-?a}\text{lop} \ \Delta_{i} \ ] . \]

persuade-PT.\text{FUT} \ 1\text{P}.\text{INCL}.T \ \text{T}.\text{this} \ \text{LIG} \ \text{person} \ \text{LNK} \ \text{AT-hunt} \ \text{i} \ \text{lutuk} \ ] . \]

\text{OBL} \ \text{mountain}  

‘We will persuade this person to hunt in a mountain.’

(3.63) a.  

\[ \text{mi-tahiŋ} \ kaku \ ciŋranan_{i} \ \emptyset \ [\ \text{ma-lahuk} \ \Delta_{i} \ ] . \]

AT.\text{NPST}-\text{call} \ 1\text{S}.T \ 3\text{S}.\text{ACC} \ \text{LNK} \ \text{AT-eat.lunch}  

‘I call him to eat lunch.’

b.  

\[ \text{ma-tahiŋ} \ aku \ ciŋra_{i} \ \emptyset \ [\ \text{ma-lahuk} \ \Delta_{i} \ ] . \]

PT.\text{NFUT}-\text{call} \ 1\text{S}.\text{NOM} \ 3\text{S}.T \ \text{LNK} \ \text{AT-eat.lunch}  

‘I called him to eat lunch.’

(3.64)  

\[ \text{ma-ulah} \ kunini \ a \ ina \ tura \ wawa_{i} \ \emptyset \ [\ k<\text{um}>a\?\text{en} \ \Delta_{i} \ ] . \]

AT.\text{NPST}-\text{like} \ \text{T}.\text{this} \ \text{LIG} \ \text{mother} \ \text{ACC}.\text{that} \ \text{child} \ \text{LNK} \ \text{eat}<\text{AT}> \ \text{tu} \ \text{piyan} \ ] . \]

\text{ACC} \ \text{candy}  

‘This mother wants that child to eat candies.’

(lit. ‘This mother likes that child to eat candies.’)

Note that the matrix patient is the controller regardless of its trigger status. The controller can be a trigger or accusative NP, as shown in (3.61)–(3.63).

Unlike the actor control, there is no trigger constraint in the embedded clauses in the patient control construction.
The examples in (3.65) show that, syntactically, the embedded clauses can be AT and NAT. That is, no trigger dependency occurs in the patient control construction, which is distinct from the previous studies, such as Wu’s (1994) pivotal construction and En-hsing Liu’s (2003) persuade-type construction. Both propose an actor-only constraint for the embedded null argument. This is because their studies cover AT-marked complement clauses only. In fact, the embedded verbs of Amis patient can be both AT-marked and NAT-marked. Wu’s (1994) pivotal construction refers to a structure where the actor of the embedded clause is the patient of the matrix clause. The shared actor/patient argument functions as a “pivot” between the matrix and embedded clauses. In the pivotal construction, the shared argument in the embedded clause is the actor of the embedded verb. In En-hsing Liu (2003), her data on persuade-type construction are all bi-clausal sentences with AT-marked complement clauses. In the present study, the empty category in the patient control construction need not to be an embedded actor as long as its reference is controlled by the matrix patient, as illustrated in (3.65b) above.

Like actor control, no trigger concord holds between the matrix and embedded clauses in the patient control construction.

(3.66) a. AT-AT construction:

\[
\text{mi-tahi\text{\text{å}}} \text{ ku matu?asay tura kapah} \emptyset [ \text{ma-ulah} \Delta_i \text{ tura kayin}].
\text{ACC.that girl}
\text{AT-NPST-ask T old.man ACC.that young.man LNK AT-like tura}
\text{ACC.that girl}
\text{‘An old man asks that young man to like that girl.’}
\]
In (3.6.7), the AT matrix verbs can select AT and PT complement clauses. Meanwhile, the patient control sentences in (3.6.7) shows that the PT marked matrix verbs can be followed by both AT and PT complement clauses.

Chang & Tsai (2001) propose an actor sensitivity constraint for the object control complements (that is, the patient control in the present study) of some Formosan languages (e.g., Kavalan and Tsou). That is, the complement clauses of these languages have to undergo causativization and carry AT marking. On the other hand, the complement clauses of the patient control constructions are not required to undergo causativization and take AT marking for those Formosan languages which do not observe actor sensitivity constraint (e.g., Kavalan). Based on their criteria, Amis belongs to the type of Formosan languages which does not observe actor sensitivity constraint. This is evidenced in two facts: (i) the complement clause of Amis patient control does not undergo causativization; and (ii) the complement clauses of Amis patient control need not be AT-marked.

However, the controllee and controller are restricted to certain marking in the patient control construction. Take (3.6.6) and (3.6.7) for example. The null argument in the patient control construction can only occupy a trigger or nominative position in the embedded clause, while the controller can only be accusative or trigger-marked. The relationships of the marking of the coreferential NPs in (3.6.6)–(3.6.7) are shown in Table 3.1.
Table 3.1. Markings of coreferential NPs in Amis patient control.

<table>
<thead>
<tr>
<th>Matrix predicate</th>
<th>Complement predicate</th>
<th>Controlee (empty NP)</th>
<th>Controller (overt NP)</th>
<th>Grammaticality</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>AT</td>
<td>trigger</td>
<td>accusative (patient)</td>
<td>grammatical</td>
<td>(3.66a)</td>
</tr>
<tr>
<td>AT</td>
<td>NAT</td>
<td>nominative</td>
<td>accusative (patient)</td>
<td>grammatical</td>
<td>(3.66b)</td>
</tr>
<tr>
<td>NAT</td>
<td>AT</td>
<td>trigger</td>
<td>trigger (actor)</td>
<td>grammatical</td>
<td>(3.67a)</td>
</tr>
<tr>
<td>NAT</td>
<td>NAT</td>
<td>nominative</td>
<td>trigger (actor)</td>
<td>grammatical</td>
<td>(3.67b)</td>
</tr>
</tbody>
</table>

In the patient control construction, there is an asymmetry of TAM between the matrix clause and embedded clause. The matrix clause can select a full range of TAMs, but the complement clause cannot. The complement clause in Amis patient control is confined to non-past and future tense, as shown in (3.68).

(3.68)  
a. mi-hayla kaku tisuwananɿ Ø [ k<um>aʔan Δɿ tu vutɨŋ ].  
   AT,NPST-allow 1S.T 2S.ACC LNK eat<AT> ACC fish  
   ‘I let you eat fish.’

b. mi-hayla kaku tisuwananɿ Ø [ a-k<um>aʔan Δɿ tu vutɨŋ ].  
   AT,NPST-allow 1S.T 2S.ACC LNK FUT-eat<AT> ACC fish  
   ‘I let you eat fish.’

c. *mi-hayla kaku tisuwananɿ Ø [ na-k<um>aʔan Δɿ tu vutɨŋ ].  
   AT,NPST-allow 1S.T 2S.ACC LNK PERF-eat<AT> ACC fish

The complement clause is not nonfinite like the typical complement clause of control in other languages (e.g., English). Again, as argued for the Amis actor control in Section 3.2.1.1, the complement clauses of patient control still behave like the complement clauses of control, in that it they have defective TAMs, which are also attested in the control constructions of other languages, such as Albanian (Landau 2004), Hebrew (Landau 2004), Japanese (Uchibori 2000), and Persian (Hashemipour 1989 and Ghomeshi 2001).

There are two other possible analyses for the structure of the patient control construction. The patient control construction can be analyzed as a serial verb construction or a coordinating construction (En-hsing Liu 2003). This section will discuss which analysis can better account for the Amis patient control construction.
As introduced in Section 3.2.1.1, a serial verb construction (SVC) refers to a single clause which contains two or more predicates (Foley and Olson 1985, Crowley 2002, Aikhenvald 2006, etc.). The surface string of Amis patient control construction is identical with that of a switch-subject serial construction, which is also known as “pivotal construction” (Chao 1968; Li and Thompson 1981, Aikhenvald 2006, etc.). The structure of a switch-subject serial construction can be schematized as NP1 V1 NP2 V2 (NP3), where NP2 is the object of V1 and the subject of V2, as the Mandarin Chinese example in (3.69) illustrates.

(3.69)  Mandarin Chinese: (Li and Thompson 1981:609)

NP1 V1 NP2 V2 (NP3)
我 勸 他 念 (醫)
wo quan ta nian yi.
I persuade him study medicine
‘I persuade him to study medicine.’

The surface string of Amis patient control seems to show exactly the same pattern as switch-subject SVC, as seen in (3.70).

(3.70)  Amis patient control construction:
V1 NP1 NP2 V2 (NP3)
paci-ci-ən nura matu?asay kura wawa mi-kurawit (tu pawli)
force-PT.FUT NOM.that old.man T.that child PT-cut ACC banana
‘That old man forces that child to cut bananas.’

Moreover, there is no visible linker between the VPs in Amis patient control like (3.70). Is it possible that Amis patient control construction is an SVC? The following facts suggest that it is not.

That Amis patient control construction is not mono-clausal is mainly supported by three pieces of evidence. First, the two verbs of the patient control construction need not to share TAM. As discussed in the previous section, the matrix clause and embedded

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93 Wu (1994) does not explicitly argue that Amis pivotal construction is a subtype of serial verb constructions as defined by Foley and Olson (1985), Crowley (2002), Aikhenvald (2006), etc. Wu’s (1994) pivotal construction is analyzed as a complex sentence with two clauses, where the shared argument is the patient of the first event and the the actor of the second event.
clause can have different TAMs. Second, unlike SVC, there are two scopes of negation in the Amis patient control construction, as shown in (3.72).

(3.71) a. mi-hai kaku ciŋrananı Ø [paluma? Δi tura umah].
    AT.NPST-agree 1.S.T 3.S.ACC LNK AT.cultivate ACC.that field
    ‘I allow him to cultivate that field.’

(3.72) a. ca?ay pi-hai kaku ciŋrananı Ø [paluma? Δi tura umah].
    NEG PL.AT-agree 1.S.T 3.S.ACC LNK AT.cultivate ACC.that field
    ‘I do not allow him to cultivate that field.’
b. mi-hai kaku ciŋrananı Ø [ca?ay pi-paluma? Δi tura umah].
    AT-agree 1.S.T 3.S.ACC LNK NEG PL.AT-cultivate ACC.that field
    ‘I allow him not to cultivate that field.’
c. ca?ay pi-hai kaku ciŋrananı Ø [ca?ay pi-paluma? Δi
    NEG PL.AT-agree 1.S.T 3.S.ACC LNK NEG PL.AT-cultivate
    tura umah].
    ACC.that field
    ‘I do not allow him not to cultivate that field.’

Third, the two verbs in the Amis patient control construction do not represent a single event. Lord (1974:196–7) states that “the verbs in the construction all refer to sub-parts or aspects of a single overall event” in a serializing language. If the Amis patient control construction is an SVC, the second verb and the first verb should constitute a semantic relationship over a single event, such as cause-effect, time-sequence, etc. However, the seemingly juxtaposed verbs of the Amis patient control are not constrained to certain semantic relationship(s). Sometimes, the verb-verb sequence in an SVC may have an idiomatic reading or collocational restriction. There is no idiomatic reading or collocational restriction attested in the two verbs of the Amis patient control construction.

The above three facts argue against the analysis of the Amis patient control construction as a mono-clausal SVC. Let us examine the bi-clausal possibility. Let us apply interchangeability test if the patient control construction can be analyzed as an instance of coordination. The two clauses of the patient control can be switched if it is a coordinating construction. If not, then, Amis patient control cannot be an instance of coordination but should be regarded as an instance of subordination.
The examples in (3.73) show that the two clauses of the patient control have a fixed order. When the two clauses are exchanged, the sentence is ungrammatical, as illustrated in (3.73b). The fact that the first clause has to precede the second clause suggests that patient control is not an instance of coordination but subordination.

3.2.2 Raising constructions

A raising construction in Amis refers to a complementation construction in which a trigger NP of the complement clause is syntactically realized as a trigger/accusative NP in the matrix clause. In Amis there are two complementation constructions with a “raised” argument—complementation with a full complement clause and actor control. The complementation with a full complement clause with a “raised” argument is divided into two types, “Raising-to-trigger” (“RtoT”) and “Raising-to-accusative” (“RtoA”). “RtoT” and “RtoA” will be discussed in Section 3.2.2.1, and raising in actor control in Section 3.2.2.2.

3.2.2.1 “Raising-to-trigger” and “raising-to-accusative”

In Amis complementation with a full complement clause, it is rather common for the embedded trigger argument to be syntactically realized as a trigger or non-trigger in the matrix clause. When the embedded trigger NP appears in the trigger position of an NAT-marked matrix clause, as in (3.74a), this is called “RtoT”. It is referred to as “RtoA” when the embedded trigger NP appears in the accusative position of an AT matrix clause, as in (3.75a).
(3.74)  
a. “Raising-to-trigger” (“RtoT”):
\[
\begin{array}{llllllllllll}
\text{ka-vana}’\text{-an} & \text{nura} & \text{wawa} & \text{kura} & \text{kapah} & \emptyset & [ \text{na-mi-rəpər} \\
\text{LT-know-LT} & \text{NOM.that} & \text{child} & \text{T.that young.man} & \text{LNK} & \text{PERF-AT-catch} \\
\text{ɪ} & \text{tu} & \text{ʔayam} & ] \\
\text{ACC} & \text{chicken}
\end{array}
\]
‘That child knows that that young man has caught a chicken.’

b. Non-“RtoT” correspondence:
\[
\begin{array}{llllllllllll}
\text{ka-vana}’\text{-an} & \text{nura} & \text{wawa} & \emptyset & [ \text{na-mi-rəpər} \\
\text{LT-know-LT} & \text{NOM.that child} & \text{LNK} & \text{PERF-AT-catch} \\
\text{kura kapah} & \text{tu} & \text{ʔayam} & ] \\
\text{T.that young.man} & \text{ACC} & \text{chicken}
\end{array}
\]
‘That child knows that that young man has caught a chicken.’

(3.75)  
a. “Raising-to-accusative” (“RtoA”):
\[
\begin{array}{llllllllllll}
\text{ma-vana}’\text{-an} & \text{kura} & \text{wawa} & \text{tura} & \text{kapah} & \emptyset & [ \text{mi-rəpər} \\
\text{AT.NPST-know} & \text{T.that child} & \text{ACC.that young.man} & \text{LNK} & \text{AT.NPST-catch} \\
\text{ɪ} & \text{tu} & \text{ʔayam} & ] \\
\text{ACC} & \text{chicken}
\end{array}
\]
‘That child knows that a young man is catching a chicken.’

b. Non-“RtoA” correspondence:
\[
\begin{array}{llllllllllll}
\text{ma-vana}’\text{-an} & \text{kura} & \text{wawa} & \emptyset & [ \text{mi-rəpər} & \text{kura kapah} \\
\text{AT.NPST-know} & \text{T.that child} & \text{LNK} & \text{AT.NPST-catch} & \text{T.that young.man} \\
\text{ɪ} & \text{tu} & \text{ʔayam} & ] \\
\text{ACC} & \text{chicken}
\end{array}
\]
‘That child knows that a young man is catching a chicken.’

The matrix verb ‘know’ subcategorizes for either an NP or a sentential complement. Thus, the “verb + NP + sentential complement” structure in (3.74a) and (3.75a) cannot be treated as the subcategorization of the verbs ka-vana’-an ‘know (LT)’ and ma-vana’ ‘know (PT)’. Accordingly, the constructions in question like (3.74a) and (3.75a) cannot be analyzed as instances of patient control. Another reason against the patient control analysis is that the “matrix” argument, such as ku kapah in (3.74a) and tu kapah in (3.75a), can appear in the embedded trigger position, as seen in (3.74b) and (3.75b).
“RtoT” seems to be rather common in Formosan complementation, as it appears in all the three target languages, whereas “RtoA” is only seen in Amis. Both “RtoT” and “RtoA” have three shared syntactic properties.

First, “RtoT” and “RtoA” are both optional. That is, the embedded trigger NP in the full complement clause is not required to occur in the matrix clause, in the matrix trigger or accusative position. Thus, the “RtoT”/”RtoA” and their non-“raising” correspondence are both grammatical, as in (3.74)–(3.75).

Second, both “RtoT” and “RtoA” only apply to the trigger NP of the full complement clause. As illustrated in (3.77), “RtoT” may only apply to the embedded trigger kura kapah, as in (3.77a), not to the embedded accusative tu wawa, as in (3.77b).

(3.76) Complementation with a full complement clause:

\[
\begin{array}{c}
\text{ma-ŋəŋəŋ ni arik } \emptyset \ [\text{mi-vava?]} \\
\text{PT.NFUT-see NOM Arik LNK AT.NPST-carry.on.the.back}
\end{array}
\]

kura kapah tu wawa ].

T.that young.man ACC child

‘Arik sees (that) that young man is carrying a child on the back.’

(3.77) “RtoT” correspondence:

a. ma-ŋəŋəŋ ni arik kura kapah, \emptyset \ [ mi-vava?]

\[
\begin{array}{c}
\text{PT.NFUT-see NOM Arik T.that young.man LNK AT.NPST-carry.on.the.back}
\end{array}
\]

\[
\begin{array}{c}
\text{_____ tu wawa ]} \\
\text{ACC child}
\end{array}
\]

‘Arik sees (that) that young man is carrying a child on the back.’

b. No “raising” correspondence:

\[
\begin{array}{c}
\text{k<om>laŋ-aʔən təmadəɾu, tu [ pupaysu _____ ]} \\
\text{know<AT>-1S.T 3S.ACC LNK AT.be.rich}
\end{array}
\]

‘I know that he is rich.’

\[
\begin{array}{c}
\text{know<AT>-1S.T LNK AT.be.rich 3S.T}
\end{array}
\]

‘I know that he is rich.’

---

Notice that the “RtoA” is not only limited to Amis among Formosan languages. It is also found in Paiwan, as seen in Hsiu-chuan Chang’s (2000:145) example. However, Hsiu-chuan Chang (2000) does not mention any “raising” analysis to account for such a phenomenon.


\[
\begin{array}{c}
\text{k<om>laŋ-aʔən təmadəɾu, tu [ pupaysu _____ ]} \\
\text{know<AT>-1S.T 3S.ACC LNK AT.be.rich}
\end{array}
\]

‘I know that he is rich.’

b. Non-raising correspondence:

\[
\begin{array}{c}
\text{k<om>laŋ-aʔən tu [ pupaysu timadəɾu ]} \\
\text{know<AT>-1S.T LNK AT.be.rich 3S.T}
\end{array}
\]

‘I know that he is rich.’
b. *ma-ŋnaŋni arik kura wawa₂i Ø [mi-vavaʔ]
   PT.NFUT-see NOM Arik T.that child LNK AT.NPST-carry.on.the.back
   ku kapah _____].
   T young.man

The same situation is also found in “RtoA”, as the examples in (3.78) show.

(3.78) Complementation with a full complement clause:
   ma-vanaʔ ku matuʔasay Ø [mi-r̥ər̥ kura kapah
   AT.NPST-know T old.man LNK AT.NPST-catch T.that young.man
   tu vavuyi].
   ACC pig
   ‘An old man knows that that young man is catching a pig.’

(3.79) “RtoA” correspondence:
   a. ma-vanaʔ ku matuʔasay tura kapah₂i Ø [mi-r̥ər̥ _____
      AT.NPST-know T old.man ACC.that young.man LNK AT.NPST-catch
      tu vavuyi].
      ACC pig
      ‘An old man knows that that young man is catching a pig.’
   b. *ma-vanaʔ ku matuʔasay tu vavuyi Ø [mi-r̥ər̥
      AT.NPST-know T old.man ACC pig LNK AT.NPST-catch
      ku kapah _____].
      T.that young.man

Third, there is no constraint on the trigger marking of the embedded verbs, as long as
“RtoT” and “RtoA” apply to the embedded trigger NP. As illustrated in (3.77a) and
(3.79a), the embedded verbs in “RtoT” and “RtoA” are both AT-marked. The embedded
verb can also be NAT-marked, as demonstrated in the “RtoT” in (3.80b) and “RtoA” in
(3.81b).

(3.80) a. Complementation with a full complement clause:
   ma-ŋnaŋni arik Ø [vavaʔ-än
   PT.NFUT-see NOM Arik LNK carry.on.the.back-PT.FUT
   nura kapah ku wawai].
   NOM.that young.man T child
   ‘Arik sees (that) that young man will carry a child on the back.’
b. “RtoT” correspondence:

\[
\begin{align*}
\text{ma-} & \text{ma} & \text{ni} & \text{ari} & \text{ku} & \text{wawa} & \text{Ø} & \text{vava?-} & \text{on} \\
\text{PT-} & \text{NOM} & \text{Arik} & \text{T} & \text{child} & \text{LNK} & \text{carry.on.the.back-PT.FUT} \\
\text{nura} & \text{kapah} & \text{Ø} & \text{[vava?-} & \text{on} \\
\text{NOM.that} & \text{young.man} & \text{‘Arik sees (that) that young man will carry a child on the back.’}
\end{align*}
\]

(3.81) a. Complementation with a full complement clause:

\[
\begin{align*}
\text{ma-vana} & \text{ku matu} & \text{asay} & \text{Ø} & \text{[ma-ræpø} & \text{nura} & \text{kapah} & \text{Ø} \\
\text{AT.NPST-know} & \text{T} & \text{old.man} & \text{LNK} & \text{PT.NFUT-catch} & \text{NOM.that} & \text{young.man} & \text{ku} & \text{vavuy} \\
\text{T} & \text{pig} & \text{‘An old man knows (that) that young man is catching a pig.’}
\end{align*}
\]

b. “RtoA” correspondence:

\[
\begin{align*}
\text{ma-vana} & \text{ku matu} & \text{asay} & \text{tu} & \text{vavuy} & \text{Ø} & \text{[ma-ræpø} & \text{nura} & \text{kapah} & \text{Ø} \\
\text{AT.NPST-know} & \text{T} & \text{old.man} & \text{ACC} & \text{pig} & \text{LNK} & \text{PT.NFUT-catch} & \text{NOM.that} & \text{young.man} & \text{ku} & \text{vavuy} \\
\text{T} & \text{pig} & \text{‘An old man knows (that) that young man is catching a pig.’}
\end{align*}
\]

The major difference between “RtoT” and “RtoA” is which matrix argument position is available. In “RtoT”, the matrix predicate is NAT-marked, so that the matrix trigger is the sentential complement, as in (3.74a), (3.77a), and (3.80b). The pre-requisite for “RtoA” is that the matrix accusative position is available. Hence, the matrix predicates in “RtoA” are AT-marked, as in (3.75a), (3.79a), and (3.81b).

Based on the above facts, the Amis “RtoT” and “RtoA” constructions are different from the raising construction as defined in the Government and Binding (GB) Theory in some respects. Let us contrast the Amis “RtoT” and “RtoA” constructions with English raising constructions. English raising constructions are also divided into two types: raising-to-subject (RtoS) and raising-to-object (RtoO).\(^95\)

(3.82) a. Raising to subject (RtoS):

\[
\text{Lily} \text{i seems [ ___i to understand the situation].}
\]

b. Raising to object (RtoO):

\[
\text{Mary believes } \text{them} \text{i [ ___i to be faithful ].}
\]

\(^95\) In Chomskyan formal syntax, RtoO is called Exceptional Case Marking (ECM) because the embedded subject receives accusative Case from the matrix verb, exceptionally across the clause boundary.
Both raising constructions involve obligatory movement of an argument semantically linked to the embedded predicate into the matrix clause because the arguments cannot be assigned Case by the embedded tenseless verb. The difference between RtoS and RtoO is whether the embedded argument is moved to the matrix subject position in RtoS, such as *Lily* in (3.82a), or to the matrix object position in RtoO, as in (3.82b). The matrix verbs in raising, such as *seem* and *seem*, are called raising verbs.

However, “RtoT” and “RtoA” cannot be analyzed as an instance of raising like English. First, English raising is obligatory. Unlike English raising, both “RtoT” and “RtoA” involve optional movement. The optionality of “RtoT” and “RtoA” suggests that they cannot be treated as instances of raising as defined in the generative literature (Chomsky 1981, 1986, 1995). Raising is considered to be an obligatory operation, as the English examples in (3.83) show.

(3.83)  a. *It seems [the boy to devote his time to take care of his family].
       b. The boy; seems [____, to devote his time to take care of his family].

In the generative perspective, raising is an obligatory argument movement (that is, A-movement) which is motivated by the lack of Case. As seen in (3.83), the embedded subject *the boy* of the infinitival clause is required to move to the matrix subject position since it cannot receive Case inside the infinitival clause. By moving to the matrix subject position, the argument *the boy* is assigned a nominative Case (Nom). However, both “RtoT” and “RtoA” are not driven by the lack of Case in the complement clauses. This is because the complement predicates in the full complement clause are finite.

Another piece of evidence is that complement-taking (CPT) verbs do not act like a raising verb *seem*. In English, the raising verb *seem* does not assign a thematic role to the

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96 The term raising is used in two senses in the generative framework. In the broad sense, raising refers to a phenomenon in which a syntactic element appears in a higher position than the position in which it is base-generated. In this sense, “raising” applies to heads as well as phrases. “Raising” of a noun phrase in this sense, therefore, refers to any type of A-movement (i.e., movement to an argument position), including the subject raising in passive constructions (e.g., *John, was bitten ____ by the dog*) and unaccusative constructions (e.g., *Three men, arrived ___*). Crosslinguistically, “raising” in this broader sense is not necessarily obligatory. For instance, in English, the subject of an unaccusative verb may remain in situ with an expletive *there* occupying the subject position, e.g., *There arrived three men*. In the present study, the term raising is used to refer to a particular kind of A-movement operation that involves so-called raising predicates, such as *seem* and *likely* in English. Raising of this kind is known to be obligatory and, therefore, the obligatoriness can be used as a diagnostic tool.
matrix subject, as in (3.82). In both “RtoT” and “RtoA”, the CPT predicates which can subcategorize for a full complement clause do assign a thematic role (that is, θ-role) to the matrix trigger/accusative argument. In “RtoT”, the CPT verbs assign a θ-role to the matrix trigger argument, such as location assigned by kavana?an ‘know (LT)’ in (3.74a) and patient assigned by manoynay ‘see (PT)’ in (3.77a) and (3.80b). In “RtoA”, the CPT predicates assign a patient role to the matrix accusative argument, such as mavana? ‘know (PT)’ in (3.75a), (3.79b) and (3.81b). Note that the θ-role in question is assigned to the extraposed Ø-marked complement clause. Normally, an argument is morphologically marked for its theta-role or trigger status. However, a clausal complement cannot be marked with a prenominal marker as a trigger in “RtoT” or as an accusative NP in “RtoA”, as it is not an NP. As shown below, clausal complements cannot be preceded by a trigger marker in “RtoT”, such as ku in (3.84), or by an accusative marker in “RtoA”, such as tu in (3.85).

(3.84) a. ma-pawan aku ku cilah ū [ Ø/*ku ma-cakyay tu PT.NFUT-forget IS.NOM T salt LNK PT-buy ASP ni ina ____i ].
  NOM mother
  ‘I forgot that Mother bought salt.’
  b. ma-pawan aku ū [ Ø/*ku ma-cakyay tu ni ina ku cilah].
  PT.NFUT-forget IS.NOM LNK PT-buy ASP NOM mother T salt
  ‘I forgot that Mother bought salt.’

(3.85) a. ma-pawan kaku tu cilah ū [ Ø/*tu ma-cakyay tu ni ina ____i ].
  AT.NPST-forget IS.T ACC salt LNK PT-buy ASP NOM mother
  ‘I forgot that Mother bought salt.’
  b. ma-pawan kaku ū [ Ø/*tu ma-cakyay tu ni ina ku cilah ].
  AT.NPST-forget IS.T LNK PT-buy ASP NOM mother T salt
  ‘I forgot that Mother bought salt.’

I assume that the clausal trigger complements are postposed and, thus, that the matrix trigger position in “RtoT” and matrix accusative position in “RtoA” are vacant (or occupied by a phonetically null expletive). The situation is similar to the object expletive construction (or object extraposition) in English, such as (3.86).
Object extraposition:

She finds it impossible [ that he could not solve the problem ].

In (3.86), the real direct object of find is the extrapoed clausal complement. Due to the extraposition of the clausal complement, the direct object position contains an expletive it.

Based on the above discussion, “RtoT” and “RtoA” in Amis cannot be analyzed as instances of raising. Instead, the “RtoT” and “RtoA” are similar to tough-constructions in English, as illustrated in (3.87).

(3.87)  

a. It is tough [ PRO to please John].

b. John is tough [CP OP ] [ PRO to please ]

At first glance, the matrix subject John in (3.87b) seems to have raised from the object position of the embedded clause in (3.87a). Like Amis “RtoT” and “RtoA”, tough-constructions, such as (3.87b), are not an instance of raising as well. First, unlike raising, the embedded object John in (3.87) is not required to move since it is in a Case position, as evidenced in (3.87a). The movement involving the tough-construction is not Case-driven.

Second, unlike raising verbs, the tough-predicates can assign a 0-role to its subject generally, e.g., this job is tough, although the relevant 0-role is assigned to a clausal complement in tough-constructions. Note that these properties are the same as those demonstrated by Amis “RtoT” and “RtoA”.

Tough-construction is analyzed as an instance of A’-movement like wh-questions (Chomsky 1977, 1981). According to Chomsky (1997, 1981), the matrix subject like John in (3.87b) is base-generated in the matrix subject position, and the gap in the embedded clause is a trace of a null operator (OP), which has moved to the specifier of the complementizer phrase (CP). The base-generated matrix subject is co-indexed with the OP, and, in turn, with the gap in the embedded clause. The situation is similar to the relationship between the head noun and its gap in relativization.

Let us apply the null operator analysis to re-examine “RtoT” (3.74a) and “RtoA” (3.75a). The structure of “RtoT” (3.74a) and “RtoA” (3.75a) should be like (3.88a) and (3.88b), respectively.
In “RtoT” and “RtoA”, the matrix arguments, such as \textit{kura kapah} in (3.88a) and \textit{tura kapah} in (3.88b), which semantically belong to the embedded clauses are based-generated in the matrix clause. The gap in the embedded trigger position is a trace of the null operator which has moved to the specifier of CP. As illustrated in (3.95), the matrix trigger \textit{kura/tura kapah} is co-indexed with OP, and, in turn, with the trace in the embedded clause. The A’-analysis is supported by the fact that \textit{wh}-movement is possible only from a trigger position (cf. Section 3.1.2), showing exactly the same constraint on “RtoT” and “RtoA”. That the application of the A’-movement for the apparent raising is also seen in other languages, such as Tongan (Otuska 2000) and Portuguese (Rooryck 2000).

### 3.2.2.2 Raising in actor control construction

Previous studies did not mention a raising phenomenon in the actor control construction. Raising in the actor control refers to a complementation construction in which the accusative patient of the embedded AT clause in actor control is required to move to the trigger position of the NAT matrix clause. As a result, the embedded clause contains two null arguments. For example:

(3.89)   \[ \begin{array}{l}
\text{Actor control construction:} \\
\text{a. ma-pawan tu nura matu?asay,} \quad \text{\textit{kura wawa},} \quad \text{[} \emptyset \\
\quad \text{PT-forget ASP NOM.that old.man T.that child LNK} \\
\quad \text{mi-palu?} \quad \Delta_i \quad _____] \\
\quad \text{AT-beat} \\
\quad \text{‘That old man forgot to beat } \text{that child,’} \\
\end{array} \]
b. ma-pawan tu nura matu?asay,  
PT-forget ASP NOM.that old.man LNK AT-beat
Δi  
\[ \text{That old man forgot to beat that child.} \]

c. *ma-pawan tu nura matu?asay, Ø  
PT-forget ASP NOM.that old.man LNK AT-beat
\[ \text{That child knows (that) that young man has caught a chicken.} \]

In the NAT-AT actor control pattern, the accusative patient of the AT complement is required to raise into the trigger position of the PT matrix clause, as in (3.89a), or postposed outside the matrix clause, as in (3.89b), as discussed in Section 3.2.1.1.

Raising in actor control seems to be similar to the “RtoT” discussed in the previous section. The “raised” arguments of both constructions appear in the trigger positions of the NAT matrix clauses. In (3.89a), the embedded accusative NP in Amis actor control is syntactically realized as a trigger NP kura wawa ‘that child (T)’ in the matrix clause. As seen in the repeated “RtoT” example (3.74a), the trigger argument of the embedded clause appears as kura kapah ‘that young man (T)’ in the matrix trigger position.

(3.74)  
\[ \text{‘That child knows (that) that young man has caught a chicken.’} \]

In spite of this similarity, the two constructions involving a “raised” argument in the matrix trigger position are structurally different, as reflected mainly in three respects. First, “RtoT” applies optionally, while raising in actor control is obligatory. Second, the raised argument is moved from the accusative position of the AT embedded clause in
NAT-AT actor control. The embedded clause of actor control need not be AT-marked. As shown in the repeated examples (3.53), the embedded clause can be either AT-marked or NAT-marked. However, raising cannot occur when there is an overt trigger NP in the matrix sentences with AT-marked verbs in control constructions, as in (3.90).

(3.53)  

a. AT-AT actor control: Non-raising (Repeated)  
\text{ma-pawan} \text{ kura matu?asay} \text{i} \text{Ø} \text{[ ma-kətər} Δ_i \text{tura wawa ].}  
\text{AT.NPST-forget} \text{T.that old.man LNK AT-scold ACC.that child}  
‘That old man forgets to scold that child.’

b. AT-NAT actor control: Non-raising (Repeated)  
\text{ma-pawan} \text{ kura matu?asay} \text{i} \text{Ø} \text{[ ma-kətər} Δ_i \text{nura wawa ].}  
\text{AT.NPST-forget} \text{T.that old.man LNK PT-scold NOM.that child}  
‘That old man forgets being scolded by that child.’

(3.90)  

a. AT-AT actor control: Raising  
*\text{ma-pawan kura matu?asay} \text{i} \text{tura wawa} \text{i} \text{Ø}  
\text{AT.NPST-forget} \text{T.that old.man ACC.that child LNK}  
[ ma-kətər } Δ_i \text{ ____j}.]  
\text{AT-scold}

b. AT-NAT actor control: Raising  
*\text{ma-pawan kura matu?asay} \text{i} \text{tura wawa} \text{i} \text{Ø}  
\text{AT.NPST-forget} \text{T.that old.man ACC.that child LNK}  
[ ma-kətər } Δ_i \text{ ____j}.]  
\text{PT-scold}

When the matrix verbs are NAT-marked, the accusative patient of the AT complement clause is required to raise into the matrix trigger position, as seen in the repeated examples (3.54a). (Recall that the Amis actor control does not allow a ‘NAT-NAT’ pattern, as in (3.54b).)

(3.54)  

a. NAT-AT actor control: Raising (Repeated)  
\text{ma-pawan} \text{ nura matu?asay} \text{i} \text{Ø} \text{[ ma-kətər } Δ_i \text{ ____j} ]  
\text{PT.NFUT-forget} \text{NOM.that old.man LNK AT-scold kura wawa} \text{i}.  
\text{T.that child}  
‘That old man forgot to scold that child.’

b. NAT-NAT actor control: Non-raising (Repeated)  
*\text{ma-pawan} \text{ nura matu?asay} \text{i} \text{Ø} \text{[ ma-kətər } Δ_i \text{ nura wawa].}  
\text{PT.NFUT-forget} \text{NOM.that old.man LNK PT-scold NOM.that child}
In contrast, there is no trigger constraint on the embedded clause in “RtoT” since “RtoT” only applies to the embedded trigger NP, as shown in (3.80) and (3.81) in Section 3.2.2.1. The two differences show that raising in actor control and “RtoT” involve different operations. Accordingly, the null operator movement proposed for the “RtoT” is not applicable to raising in actor control.

The above discussion suggests that raising in actor control is better analyzed as an instance of raising. Although raising in this case is not driven by the lack of Case, that raising to the matrix trigger gap is obligatory suggests that the lack of matrix trigger NP motivates the raising. As discussed in Section 3.2.1.1, the only constraint on actor control constructions is that the matrix clause and embedded clause cannot be both NAT-marked. When the matrix predicate of actor control is NAT-marked, none of the overt arguments in the matrix and embedded clauses occupies the trigger position. Such a sentence is ungrammatical as shown in (3.91a) below. The sentence becomes grammatical when the accusative patient of the AT complement is raised to a trigger position outside the embedded clause, as shown in (3.91b) and (3.91c). Note that in the NAT-NAT pattern, raising of the embedded nominative NP does not improve the grammaticality, as shown in (3.92b)–(3.92c). Even though (3.92b) and (3.92c) meet the requirement that the matrix clause must have an overt NP in control constructions, both sentences are still ungrammatical. I suggest that this might be due to the fact that the nominative NPs in Amis have a fixed position and cannot be moved out of its base-generated position (cf. Section 2.1.1).

(3.91) Actor control: NAT-AT pattern
a. *ka-ulah-an nura matu?asayi, Ø [ mi-cəpəp Δi tu wawa].
   LT-like-LT NOM.that old.man LNK AT-kiss ACC child
   Intended: ‘That old man likes to kiss a child.’

b. ka-ulah-an nura matu?asayi ku wawaj, Ø [ mi-cəpəp Δi _____j].
   LT-like-LT NOM.that old.man T child LNK AT-kiss
   ‘That old man likes to kiss a child.’

c. ka-ulah-an nura matu?asayi, Ø [ mi-cəpəp Δi _____j] ku wawaj.
   LT-like-LT NOM.that old.man LNK AT-kiss T child
   ‘That old man likes to kiss a child.’
(3.92) Actor control: NAT-NAT pattern

a. *ka-ula-an nura matu?asay_{i} Ø [ cəpcəp-ən nu wawa Δ_i ].
   LT-like-ŁT NOM.that old.man LNK kiss-PT NOM child

b. *ka-ula-an nura matu?asay_{i} ku wawa_{j} [ Ø
   LT-like-ŁT NOM.that old.man T child LNK
   cəpcəp-ən ___j Δ_i ].

   kiss-PT

c. *ka-ula-an nura matu?asay_{i} ___j [ Ø cəpcəp-ən ___j
   LT-like-ŁT NOM.that old.man LNK kiss-PT
   Δ_i ] ku wawa_{j},
   T child

Based on the above discussion, it is clear that the Amis raising in the NAT-AT actor control pattern is trigger-driven: the matrix clause of actor control must have an overt NP in the trigger position. This requirement is reminiscent of the Extended Projection Principle (EPP), which requires that each clause must have a subject. It should be noted that the EPP is satisfied by the raised NP in raising construction in English. Thus, the syntactic function of trigger NPs in Amis, in this respect, is analogous to that of “subject” in other languages like English. In fact, trigger exhibits some of the subject properties in Formosan languages. A detailed discussion will appear in Section 6.3.

3.3 Summary
In this chapter, three types of Amis complementation have been discussed: (i) complementation with a full complement clause; (ii) control; and (iii) raising. The first involves a sentence-like embedded clause, while the embedded clauses in control and raising are defective in that they contain a missing argument coreferential with a matrix argument.

In the complementation with a full complement clause, the full complement clause acts like an independent clause, as evidenced in several respects, such as a complete argument structure, no trigger/TAM constraint on the embedded verbs, and so on. Structurally, there are two possibilities for the complementation with Ø-marked complement clause: coordination and subordination. The present study shows that the Ø-marked complementation is a subordinate structure. Accordingly, the null clause linker is analyzed as a complementizer.
In Amis control constructions, there is no overt linker between the matrix clause and defective complement clause. An optional a which appears between the matrix clause and the defective complement clause is regarded as a future tense marker a- prefixed to the complement predicate. Amis control constructions were analyzed as SVC in previous studies, such as Wu (1994, 2000). However, the constructions with a shared (coreferential) argument in Amis are better analyzed as control constructions rather than SVC, as supported by the evidence from three syntactic/semantic/phonological facts.

In Amis, there are two distinct syntactic constructions with a “raised” argument—complementation with a full complement clause and actor control. In complementation with a full complement clause, there are two types of “raising” constructions: “Raising-to-trigger” (“RtoT”) and “Raising-to-accusative” (“RtoA”). Both “RtoT” and “RtoA” involve an embedded trigger NP which can be optionally realized as a trigger/accusative NP in the matrix clause. Raising in the actor control occurs only when the trigger marking of the matrix and complement clauses is the NAT-AT pattern. However, both “RtoT” and “RtoA” cannot be analyzed as an instance of raising as defined in the generative literature for two reasons. The major reason is that both “RtoT” and “RtoA” apply only optionally to the embedded trigger argument in Amis, while raising operations must be obligatory. Considering that the optional movement attested in the Amis “RtoT” and “RtoA” is similar to the pseudo raising demonstrated by the English tough-construction, a null operator movement is proposed for the “RtoT” and “RtoA” in Amis.

In contrast, only the raising in actor control is shown to be an instance of genuine raising since the raising in NAT-AT actor control is obligatory. Raising in actor control is driven by the Amis equivalent of the Extended Projection Principle (EPP), which requires all Amis control sentences have a trigger NP in the matrix clause.\(^\text{97}\)

\(^{97}\)Strictly speaking, this is different from the EPP in that this requirement applies only to control constructions, while the EPP applies to all sentences. Nevertheless, the similarity between the prominence of subject and trigger in this respect is noteworthy.
CHAPTER FOUR
COMPLEMENTATION IN MAYRINAX ATAYAL

This chapter provides a detailed description of complementation in Mayrinax Atayal. The Mayrinax matrix clause and complement clause are connected by linkers. Mayrinax Atayal has the most diverse set of clausal linkers among all the Atayal dialects and even among all the Formosan languages. Lillian Huang’s (1995a) study shows that there are five different clause linkers: cu?, ĭi?, mha?, ra?, and ru?. Within Functional grammar, Lillian Huang (1995a) proposes a tight-loose continuum for five types of complex sentences: a serial verb construction, a pivotal construction, an identifying construction, a cognition-utterance construction, and a less-tied construction (including topic constructions and coordinate constructions). The semantic relationship indicated by the participant(s) of the complex sentences is reflected by the tightness of syntactic structures of these complex sentences. In Mayrinax Atayal, serial verb constructions and less-tied constructions stand at the tight and loose extremes, respectively. For example, the semantic tightness of the events within the serial verb construction is seen in the closely tied verb-verb sequence with an optional clause linker. On the other hand, the looseness of the less tied construction is observed in syntactic operations such as an obligatory clause linker and two independent clauses.

My study aims at identifying the syntactic structures of the Mayrinax complementation constructions from the perspective of a Chomskyan formal approach. The Mayrinax complement types can be divided into: (i) full complement clauses; (ii) control constructions; and (iii) raising constructions. In the full complement clauses, there is no missing argument. Meanwhile, both control and raising constructions contain a missing argument in the complement clauses. Crucially, I argue that none of the verb-verb sequences discussed in the previous Mayrinax studies can be considered SVC (contra Lillian Huang 1995a). The inter-clausal linkers provide useful clues to classify the embedded clauses of different syntactic properties. Thus, another important task in this chapter is to identify the syntactic categories of the clause linkers involved in Mayrinax Atayal complementation. These clause linkers are homophonous with various
other items in Mayrinax, such as Case markers (cu?, na?, and ??), a verb (mha‘ say’), a topic marker (ra?), and a conjunction (ru?). The identification of the syntactic category of these clausal linkers under investigation will follow the introduction of the syntactic properties of each complement type.

4.1 Full embedded clauses

In Mayrinax, the full complement clauses are introduced by six different linkers—cu?, ru?, ??, ra?, na?, and mha?. The choice of a linker is determined by the semantic type of the matrix predicate. In this study, the Mayrinax full complement clauses are classified based on these clausal linkers. In the following discussion, each type of the complementation is termed according to the linker it selects. For instance, it is called cu?-marked complementation when the complement clauses are initiated by a linker cu?.

4.1.1 cu?-marked complementation

4.1.1.1 Syntactic properties

The cu?-marked complementation with a full complement clause is limited to a set of propositional attitude predicates (e.g., snua-un ‘believe (PT)’ in (4.1)), predicates of knowledge (e.g., βaq-un ‘know (PT)’ in (4.2), ??uŋi ‘forget (AT)’ in (4.3a), ??uŋi-an ‘forget (LT)’ in (4.3b)), and immediate perception predicates (i.e., mi-taal ‘see (AT)’ in (4.4a), tal-an ‘see (LT)’ in (4.4b), m-uŋ ‘hear (AT)’ in (4.5a), and puŋ-an ‘hear (LT)’ in (4.5b)).

      T    child ‘I believe that the child stole money.’

(4.2) βaq-un-mu *(cu?) [ ma-?uah-si? kisa? ].
      know-PT.NFUT-1S.NOM LNK AT.FUT-come-2S.T:LINK today ‘I know you will come today.’

98 The categorization of these complement-taking verbs is mainly based on Noonan (1985).
Lillian Huang (1995a) divides these verbs that take a *cu?*-marked complement into two classes—cognition verbs (which include propositional attitude predicates and predicates of knowledge) and perception verbs (which correspond to immediate perception predicates). The clause linker *cu?* is obligatory when the matrix predicate is a cognition verb except for *l<um>aluq/luquluy-un* ‘think (AT/PT)’, as shown in (4.1)–(4.3), whereas *cu?* is optional when the matrix predicate is a perception verb, as (4.4)–(4.5) illustrate.99

The complement clauses introduced by *cu?* behave like an independent clause. First, no tense and aspect marking (TAM) constraint is found in the *cu?*-marked full complement clauses. They can have a TAM different from the matrix clause, as shown in (4.6) and (4.7).

99 When the complement-taking verbs are perception verbs, the clause linker *cu?* can be replaced with *ru?*. See Section 4.1.2 for discussion of the *ru?*-marked complementation.
(4.6)  
know-PT.NFUT-2S.NOM  LNK  PROG  LNK  AT.NFUT-go  3S.T  
‘You know that he is going.’

know-PT.NFUT-2S.NOM  LNK  AT.FUT-go  OBL  today  3S.T  
‘You know that he will go today.’

know-PT.NFUT-2S.NOM  LNK  AT.NFUT <PERF> go OBL yesterday 3S.T  
‘You know that he has been (there) yesterday.’

(4.7)  
<AT.NFUT> forget  T  old.man  LNK  catch<AT.NFUT> ACC  pig  
?i?  mama? ].  
T  uncle  
The old man forgot that Uncle caught a pig.’

<AT.NFUT> forget  T  old.man  LNK  AT.FUT-catch ACC  pig  
?i?  mama? ].  
T  uncle  
The old man forgot that Uncle will catch a pig.’

c.  ?<um>uji?  ku?  naβakis  cu?  [ r<um>in>akaap  
<AT.NFUT> forget  T  old.man  LNK  catch<AT.NFUT>PERF  
cu?  βawak  ?i?  mama?].  
ACC  pig  NOM  uncle  
The old man forgot that Uncle has caught a pig.’

Second, there is no shared argument in the cu?-marked full complement clauses. In  
(4.2) above, the matrix verb βaq-un ‘know (PT)’ and the embedded verb ma-ʔuah ‘come  
(AT)’ have their individual actors, -mu ‘I (1S.NOM)’ and -siʔ ‘you (2S.T)’. Even if the  
actors of the matrix clause and the embedded clause are coreferential, neither of the  
actors can be omitted, as the examples in (4.8) illustrate.

(4.8)  
a.  βaq-un-mu1  cu?  [ ma-ʔuah-siʔ1  kisa? ].  
know-PT.NFUT-1S.NOM  LNK  AT.FUT-come-2S.T:OBL  now  
‘I know that you will come today.’

know-PT.NFUT  LNK  AT.FUT-come-2S.T:OBL  now
When both actors in the matrix and complement clauses are the third person, they cannot have a coreferential reading, as (4.9) illustrates.\(^{100}\)

\[(4.9)\]

\[\text{a. } \beta\text{aq-un-nia}?, \text{ cu? } [ \text{ ma-?uah } \text{i} \text{i} \text{k} \text{a} \text{s} \text{a} ? \text{ihiya}?\text{u}].
\]
\[
\text{know-PT.NFUT-3.S.NOM LNK AT.FUT-come OBL today 3S.T}
\]
\[\text{‘He, knows that } \text{he } \text{i} \text{ will come today.’}
\]

\[\text{b. } \beta\text{aq-un-nia}?, \text{ cu? } [ \text{ ma-?uah } \text{i} \text{i} \text{k} \text{a} \text{s} \text{a} ? \text{ihiya}?\text{u} \text{nanak}].
\]
\[
\text{know-PT.NFUT-3.S.NOM LNK AT.FUT-come OBL today 3S.T self}
\]
\[\text{‘He, knows that } \text{he } \text{i} \text{ himself will come today.’}
\]

\[\text{c. } \beta\text{aq-un-nia}?, \text{ nanak cu? } [ \text{ ma-?uah } \text{i} \text{i} \text{k} \text{a} \text{s} \text{a} ? \text{ihiya}?\text{u}].
\]
\[
\text{know-PT.NFUT-3.S.NOM self LNK AT.FUT-come OBL today 3S.T}
\]
\[\text{‘He, knows himself that } \text{he } \text{i} \text{ will come today.’}
\]

The two actors -nia? and ?ihiya? in (4.9a) are of disjoint reference. A coreferential reading can be obtained only when either actor is followed by nanak ‘self’, as shown in (4.9b) and (4.9c).

In the cu?-marked complementation with a full complement clause, no trigger constraint is found on the matrix clause with a perception verb, as the examples in (4.10) illustrate.

\[(4.10)\]

\[\text{Mayrinax Atayal: cu?-marked complementation with a matrix perception verb}
\]

\]
\[
\text{see-LT.NFUT NOM child LNK AT.NFUT many T firefly}
\]
\[\text{‘The child saw that there were many fireflies.’}
\]
\[\text{(lit. ‘The child found that the fireflies were many.’)}
\]

\]
\[
\text{AT.NFUT-see T child LNK AT.NFUT many T firefly}
\]
\[\text{‘The child saw that there were many fireflies.’}
\]
\[\text{(lit. ‘The child found that the fireflies were many.’)}
\]

\(^{100}\) The Mayrinax speakers use a common noun or a proper noun to replace the third person pronoun ?ihiya? when the two actors are disjoint.
On the contrary, there seems to be an NAT trigger constraint when the matrix verb is a cognition predicate. So far as I know, cognition verbs can be only either PT or LT-marked, as shown in (4.11).

(4.11) $cu$?-marked complementation with a cognition matrix verb:

a. $\text{βaq-un}$ $\text{nku? naβakis cu?}$ [ $\text{r<um>akaap cu? βawak}$ $\text{know-PT.NFUT NOM old.man LNK catch<AT.NFUT> ACC pig}$ $\text{?i? kaynu? }$].
   $\text{T Kaynu}^{101}$
   ‘The old man knows that Kaynu’ is catching a pig.’

b. $*\text{βaq}^{102}$ $\text{ku? naβakis cu?}$ [ $\text{r<um>akaap cu? βawak}$ $\text{AT.NFUT.know T old.man LNK catch<AT.NFUT> ACC pig}$ $\text{?i? kaynu? }$].
   $\text{T Kaynu}$
   Intended: ‘The old man knows that Kaynu’ is catching a pig.’

4.1.1.2 Identification

The clause linker $cu$? is homophonous with an accusative prenominal marker, a coordinating conjunction, and a temporal particle in Mayrinax (cf. Lillian Huang 1995a:219–220). This section examines the syntactic category of the clause linker $cu$?.

It is obvious that the clause linker $cu$? cannot be a temporal particle$^{103}$. In order to identify the syntactic properties of the clausal connector $cu$?, the following criteria for the accusative prenominal marker, the conjunction, and the complementizer will be discussed.

In Mayrinax Atayal the prenominal marker $cu$? is used to indicate a patient of the event except for the patient of the PT sentence (which is assigned a trigger marking).

The Mayrinax prenominal marker $cu$? has the following three properties: (i) the [+N] element co-occurring with $cu$? may be replaced by an anaphoric expression; (ii) the

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101 The romanization for the female name $\text{kaynu?}$ is $\text{Kaynu}$’, in which the glottal stop is represented by a modified letter apostrophe (’).

102 The root $\text{βaq}$ has different meanings in AT and NAT forms. The AT $\text{βaq}$ means ‘can (AT)’, while the PT $\text{βaq-un}$ means ‘know (PT)’.

103 The temporal particle $cu$? only occurs in a few time adverbs, such as $cu$? $\text{hisa}?$ ‘yesterday’, $cu$? $\text{makaha}?$ ‘the day before yesterday’, $cu$? $\text{humicua}?$ ‘when’, and so on. On the contrary, the clause linker $cu$? is able to connect embedded clauses without any TAM constraint.
prenominal marker cu? cannot occur in a PT sentence\textsuperscript{104}; and (iii) the prenominal marker cu? is obligatory.

Let us examine if the clause linker cu? meets the first criterion.

    see<AT.NFUT<PERF> ACC child T Yumin
    ‘Yumin has seen a child.’

    see<AT.NFUT<PERF> ACC this T Yumin
    ‘Yumin has seen this (child).’

The anaphoric hani ‘this’ in (4.12b) can substitute for the [+N] element ?ulaqi? ‘child’ in (4.12a). If the clause linker cu? is the prenominal marker cu?, it is expected that the complement clause can be replaced by hani ‘this’.

    forget-LT.NFUT NOM child LNK wash<PERF>-LT.NFUT NOM aunt
    ku? syatu? ka yani la ].
    T clothes LIG that ASP
    ‘The child forgot that Aunt has washed those clothes.’

    forget-LT.NFUT NOM child LNK this
    forget-LT.NFUT NOM child T this
    ‘The child forgot this.’

The anaphoric hani ‘this’ cannot replace the complement clause β<in>ahuq-an ni? yata? ku? syatu? ka yani la in (4.13), as shown in (4.14a). Note that hani ‘this’ can be the theme of ?u?i?-an ‘forgot (LT)’ but must be marked as a trigger, as illustrated in (4.14b).

Let us examine whether the linker cu? is disallowed in a PT sentence like the accusative prenominal marker cu?.

\textsuperscript{104} Based on this syntactic fact, Lillian Huang (1995a:219) concludes that the clause linker cu? is not a prenominal marker.
In the AT sentence (4.15) the patient ruas ‘book’ is preceded by a prenominal marker cu?.

But the patient cannot be marked with cu? in the LT sentence, as shown in (4.16). Instead, it must be marked as a trigger. If the clause linker cu? is the accusative prenominal marker, it cannot occur in the complex sentence with a PT matrix clause. As shown in (4.17), however, the matrix PT sentence only allows a cu?-marked complement clause, not a ku?-marked complement clause.

As for the obligatoriness test, the linker cu? is examined to see if it can be omitted.

The sentence (4.18b) is ill-formed because there is no marker preceding the noun qulih ‘fish’. If the clause linker is a prenominal marker cu?, then it cannot be optional. As mentioned above, the clause linker cu? is optional when the matrix predicate is a perception verb. Therefore, as far as the perception verbs are concerned, we may conclude that cu? is not an accusative prenominal marker. However, the cognition verbs suggest the opposite
since the linker *cu?* is optional. Therefore, the obligatoriness test cannot be used as a reliable test for Mayrinax. Nevertheless, the first two tests consistently show that the clause linker *cu?* is not an accusative prenominal marker. Thus, I conclude that the complement clause linker *cu?* is not a prenominal marker in Mayrinax.

Let us consider the possibility that the linker *cu?* is a coordinating conjunction. According to Lillian Huang (1995a:220), there are two coordinating conjunctions in Mayrinax—*cu?* and *ru?*. The conjunction *cu?* is used to link two equivalent syntactic constituents, as shown in (4.19).

     AT.NFUT.big LNK AT.NFUT-red T flower
     ‘The flower is big and red.’

     AT.NFUT.big LNK AT.NFUT-red T flower
     ‘The flower is big and red.’

The linker *ru?* serves to connect different kinds of equivalent syntactic categories, but *cu?* is only used when the two equivalent categories are verbal\(^{105}\). Below are the examples:

(4.20) NP and NP:

a. βalaq-mu ku? γuqah *(ru?) iyuk *(ru?) qaim
   PT.NFUT-like-1S.NOM T banana LNK orange LNK peach
   *(ru?) plikaway.
   LNK plum
   ‘I like bananas, oranges, peaches and plums.’

   PT.NFUT-like-1S.NOM T banana LNK orange LNK peach
   cu? plikaway.
   LNK plum

(4.21) VP and VP:

   DET woman LIG this TOP AT.NFUT.bossy LNK AT.NFUT.bad
   ‘This woman, (she) is bossy and bad.’

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\(^{105}\) Adjectives are syntactically similar to verbs in this language.

\(^{106}\) The word *tiku?* is a proximal demonstrative marker used only for topics, not for other arguments.
DET woman LIG this TOP AT.NFUT.bossy LNK AT.NFUT.bad
‘This woman, (she) is bossy and bad.’

(4.22) S and S:

a. [ tikuʔ kanayril ka hani γaʔ m-hahapuy ] ruʔ,107
DET woman LIG this TOP AT.FNUT-cook LNK
[ tikuʔ mamaliku ka haca γaʔ m-aimaʔ ].
DET man LIG that TOP AT.NFUT-bathe
‘This woman is cooking and that man is taking a bath.’

b. *[ tikuʔ kanayril ka hani γaʔ m-hahapuy ] cuʔ,
DET woman LIG this TOP AT.NFUT-cook LNK
[ tikuʔ mamaliku ka haca γaʔ m-aimaʔ ].
DET man LIG that TOP AT.NFUT-bathe

The above examples illustrate that ruʔ is no doubt a conjunction. It is mysterious why cuʔ functions as a conjunction only for verbal elements. A reasonable conjecture is that the cuʔ in (4.22) is, in fact, not a conjunction but some grammatical marker (i.e., a complementizer) which helps connect two clausal elements. In the historical development, it evolves to function as a coordinating conjunction for two verbal elements belonging to the same semantic domain, such as masʔaŋ ‘bossy’ and aqih ‘ugly in (4.21). Because of this conjecture, the possibility cannot be dismissed that the clause linker cuʔ is a coordinating conjunction in the cuʔ-marked complementation. Two criteria for the coordinating conjunction are: (i) the position of the linked elements can be interchangeable; and (ii) the coordinating conjunction is obligatory.

Let’s examine if the cuʔ-linked elements can be exchanged. The two predicates linked by cuʔ are exchangeable, as in (4.23). But it is impossible to switch the two clauses in the cuʔ-marked complementation, as in (4.24).

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107 This comma is used to mark a pause between the two joint sentences.
   AT.NFUT.tall LNK AT.NFUT-beautiful T woman LIG that
   ‘That girl is tall and beautiful.’

   AT.NFUT-beautiful LNK AT.NFUT.tall T woman LIG that
   ‘That girl is beautiful and tall.’

   believe-PT.NFUT-2S.NOM LNK AT.NFUT.leave 3S.T ASP
   ‘You believe that he left.’

   AT.NFUT.leave 3S.T ASP LNK believe-PT.NFUT-2S.NOM

Let us examine if the clause linker cu? is obligatory in the coordinating construction.

   AT.NFUT.big LNK AT.NFUT.high T house-2S.Poss
   ‘Your house is big and high.’

In (4.25) the linker cu? between the two predicates is always required. In contrast, the clause linker cu? is optional when the matrix verb is a perception verb. Meanwhile, the clause linker cu? cannot be omitted when the matrix verb is a cognition verb. Thus, the obligatoriness of the clause linker cu? does not provide a conclusive result.

According to Ross’s (1967) Coordinate Structure Constraint (abbreviated as CSC), an element from one conjunct cannot be moved out of that structure. Applying the CSC, a coordinating construction can be distinguished from a subordinating construction. Based on this constraint, a wh-extraction test is used to examine if the cu?-marked clause is a coordinating construction and, accordingly, the linker cu? is a coordinating conjunction in Mayrinax.

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108 According to Paul Jen-kuei Li, maγ- is only found in Mayrinax Atayal as far as Formosan languages are concerned. This AT prefix maγ- only appears in few stative verbs, such as maγ-turakis ‘yellow’ (personal communication, August 21, 2010). Note that the prefix ma- is an AT marker in Mayrinax Atayal, including stative verbs like ma-γicu ‘fear (AT)’, ma-γaqas ‘happy (AT)’, etc. Therefore, the prefix maγ- is also analyzed as an AT marker in Tagalog (Reid & Liao 2004).
In Mayrinax Atayal, nominal interogatives can be formed in two ways: *wh*-in-situ questions and *wh*-questions in pseudo-clefts (cf. Lillian Huang 1995a). Regarding *wh*-in-situ questions, the *wh*-word *nanuan* ‘what’ can appear in the same position as its declarative counterpart, as the examples in (4.26) illustrate.

(4.26) Lillian Huang (1995a:140; glosses mine):

  BT.NFUT-buy ACC what NOM woman T child
  ‘What did the woman buy for the child?’

  BT.NFUT-buy ACC candy NOM woman T child
  ‘The woman bought candy for the child.’

The pseudo-cleft questions appear in the Predicate-Trigger equational construction. Only the trigger NP can be *wh*-questioned in the pseudo-cleft questions. Consider:

(4.27) Lillian Huang (1995a:139; glosses mine):

   what T buy<PT.NFUT.PERF> NOM mother OBL 2S
   ‘What is (the thing) that Mother bought for you?’

   clothes T buy<PT.NFUT.PERF> NOM mother OBL 1S
   ‘Clothes are what Mother bought for me

The *wh*-word *nanuan* ‘what’ in (4.27a) and the corresponding answer *situiŋ* in (4.27b) are a nominal predicate which is followed by a trigger-marked headless relative clause. The equational structure NP(predicate)-NP(trigger) in (4.27) is the so-called pseudo-cleft construction.109

Given the CSC, the *cuʔ*-marked clause must be a coordinate clause if the *wh*-element cannot be extracted from the *cuʔ*-marked clause.

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109 It is assumed that these pseudo-cleft constructions in Mayrinax involve *wh*-extraction of a null operator from the relevant position in the embedded clause. The structure of (4.27a) can be schematized as follows:

   what T buy<PT.NFUT.PERF> NOM mother OBL 2S
   ‘What is (the thing) that Mother bought for you?’
Accordingly, the cyclic movement creates an intermediate trace, as this co
110 ne neither a prenominal marker nor a coordinating conjunction. The 
analyzed ‘it originally resides, no matter whether the matrix predicate is a cognitive verb βaq-un 
‘know (PT)’ or a perception verb tal-an ‘see (LT)’. Thus, the cu?-marked clauses cannot be 
analyzed as a coordinate structure. Based on this test above, I conclude that the linker cu? is 
neither a prenominal marker nor a coordinating conjunction. The wh-extraction test 

\[ (4.28) \]

  know-PT.NFUT NOM aunt LNK AT.FUT-eat ACC what T child
  ‘Aunt knows that the child will eat what?’

  know-PT.NFUT NOM aunt LNK what T FUT-eat-PT
  nku? ?ulaqi? ____i ]].
  NOM child
  ‘Aunt knows what the child will eat.’
  (lit. ‘Aunt knows what is (the thing) that the child will eat.’)

  know-PT.NFUT NOM aunt LNK FUT-eat-PT
  nku? ?ulaqi? ____i ]].
  NOM child
  ‘What does Aunt knows that the child will eat?’
  (lit. ‘What is (the thing) that Aunt knows that the child will eat?’)

\[ (4.29) \]

  see-LT.NFUT NOM aunt LNK AT.FUT-drink ACC what T child
  ‘Aunt sees that the child will drink what?’

  know-LT.NFUT NOM aunt LNK what T FUT-drink-PT
  nku? ?ulaqi? ____i ]].
  NOM child
  ‘Aunt sees what the child will drink.’
  (lit. ‘Aunt sees what is (the thing) that the child will drink.’)

  what T see-LT.NFUT NOM aunt LNK FUT-drink-PT
  nku? ?ulaqi? ____i ]].
  NOM child
  ‘What does Aunt see that the child will drink?’
  (lit. ‘What is (the thing) that Aunt see that the child will drink?’)

The sentences in (4.28) and (4.29) show that nanuan ‘what’ can be extracted from the clause 
it originally resides, no matter whether the matrix predicate is a cognitive verb βaq-un 
‘know (PT)’ or a perception verb tal-an ‘see (LT)’. Thus, the cu?-marked clauses cannot be 
analyzed as a coordinate structure. Based on this test above, I conclude that the linker cu? is 
neither a prenominal marker nor a coordinating conjunction. The wh-extraction test

\[ 110 \] In line with the Chomskyian approach, I assume the wh-extraction has to follow cyclic movement. 
Accordingly, the cyclic movement creates an intermediate trace, as this co-indexed underline here suggests.
suggests that the \textit{cu}?-marked complement clause under investigation be better analyzed as a complementizer phrase (that is, CP) and, accordingly, \textit{cu}? as a complementizer.

Although the above tests indicate that the clause linker \textit{cu}? is synchronically a complementizer, it is likely to be historically derived from the accusative marker \textit{cu}?.

This hypothesis is supported by other Formosan languages, in which the clause linker for a full complement clause is homophonous with an accusative marker, such as \textit{dhu} in Puyuma and \textit{tu} in Bunun, Kavalan, and Paiwan. The homonymy between the complementizer for a full complement clause and the accusative marker is not a coincidence. Crosslinguistically, it is not uncommon to find examples in which the accusative marker is used to mark a clausal complement, such as the Tungusic language Evenki\footnote{Evenki is a Tungusic language spoken by Evenks in Russia, Mongolia, and People’s Republic of China.} (Comrie 1981:83). Note that most of the \textit{cu}?-marked clausal complements occur as the object of a complement-taking verb. Naturally, an accusative marker can be found in some languages to mark a complement clause. Thus, it is reasonable to hypothesize that the complementizer \textit{cu}? originates from the reanalysis of the accusative marker \textit{cu}?.

4.1.2 \textit{ru}?-marked complementation

4.1.2.1 Syntactic properties

The usage of the clause linker \textit{ru}? is very similar to the clause linker \textit{cu}? in Mayrinax. It helps connect a matrix predicate and a full embedded clause. Depending on the syntactic properties of the matrix predicates, the \textit{ru}?-marked complementation is divided into two types. In the first type, the matrix predicates are only able to select a \textit{ru}?-marked clausal complement. In contrast, the matrix predicates of the second type allow replacement of the linker \textit{ru}? with \textit{cu}?.

In the first type of \textit{ru}?-marked complementation, the matrix verbs include: one propositional attitude predicate (i.e., \textit{l<um>alu} ‘think (AT) and \textit{lu<ulu>un} ‘think (PT)’)}
and one utterance predicate (i.e., k<um>aall/kal-un ‘say (AT/PT)’). The clause linker ru? is obligatory and cannot be replaced by cu?, as shown in (4.30)–(4.32).

(4.30) \[ \begin{array}{lll}
\text{l<um>aŋluŋ-cu} & *(ru?)/*cu? & \text{[ ma-?uah ?i? casan think}\text{]}<AT.NFUT>-1S.T \text{ LNK AT.FUT-come OBL tomorrow k}\text{u? ?ulaqi?-mu }] \\
T \text{ child-1S.POSS} \\
‘I think that my child will come tomorrow.’
\end{array} \]

(4.31) \[ \begin{array}{lll}
luguluŋ-un \text{ nku? naβakis ka hani *(ru?)/*cu?} & \text{think-PT.NFUT NOM old.man LIG this LNK} \\
\text{[ ma-?usuk ku? ?ulaqi? la ].} \\
AT.NFUT-get.drunk T \text{ child ASP} \\
‘This old man thinks that the child got drunk.’
\end{array} \]

(4.32) \[ \begin{array}{lll}
k<um>aal \text{ ?i? yaβa? *(ru?)/*cu?} & \text{[ m<in>umua? say<AT.NFUT> T father LNK AT.NFUT<PERF> cultivate cu? claq ?i? mama?].} \\
\text{ACC field T uncle} \\
‘Father said that Uncle has cultivated the field.’
\end{array} \]

In the second type, the matrix verbs subcategorize for both cu?-marked and ru?-marked clausal complements and they are perception verbs. Below are the examples:

(4.33) \[ \begin{array}{lll}
\text{mi-taal-cu} & \text{(cu?)/(ru?) [ pa-qualax ?i? kisa?].} \\
\text{AT.NFUT-see-1S.T LNK AT.FUT-rain OBL today ‘I guess that (it) will rain today.’}
\end{array} \]

(4.34) \[ \begin{array}{lll}
\text{tal-an-mu} & \text{(cu?)/(ru?) [ rakaap-un na? cuquliq see-LT.NFUT-1S.NOM LNK catch-PT.NFUT NOM person ku? ?ulaqi? la ].} \\
T \text{ child ASP} \\
‘I saw that a person caught the child.’
\end{array} \]

\[ ^{112} \text{The AT k<um>aal ‘say’ can select a ru?-marked complement, while the PT kal-un ‘say’ cannot. But} \]
\[ ^{113} \text{both AT l<um>aŋluŋ and PT luguluŋ-un ‘think’ are able to take a ru?-marked complement. This} \]
\[ ^{113} \text{asymmetry might be attributed to the fact that kal-un is mostly followed by an imperative direct} \]
\[ ^{113} \text{quote and its meaning is turned into ‘order’, while k<um>aal has} \]
\[ ^{113} \text{no such meaning and usage.} \]
\[ ^{113} \text{Note that semantics of the cognition verb l<um>aŋluŋ cover a wide range, including ‘think’, ‘guess’,} \]
\[ ^{113} \text{‘assume’, ‘predict’, ‘miss’, etc. In order to ease my description, I only put a general translation ‘think’ in the} \]
\[ ^{113} \text{glosses.} \]
Contrary to the first type, the sentences in (4.33)–(4.36) show that both the linkers ru? and cu? are optional. My informants indicate that there is no semantic difference between cu? and ru? in these examples. That is, the syntactic properties of the ru?-marked clausal complements of the second type are identical with the cu?-marked clausal complement subcategorized by a perception verb. Thus, ru? can be considered to be a complementizer as cu?. Below I focus on the first type of the ru?-marked complementation. For detailed discussion of the cu?-marked complementation with a perception verb, refer to Section 4.1.1.

Regarding the ru?-marked complement of a cognition verb, no trigger constraint is detectable. The ru?-marked complement clauses can be AT/PT/LT/IT without showing any trigger concord requirement with the matrix verb. The examples are as follows:

(4.37) a. l<um>aŋluŋ ku? naβakis ka hani ru? [ t<um>aluk think<AT.NFUT> T old.man LIG this LNK cook<AT.NFUT> cu? wapit ku? ?ulaqi? ]. ACC flying.squirrel T child ‘This old man thinks that the child is cooking a flying squirrel.’

b. l<um>aŋluŋ ku? naβakis ka hani ru? [ talk-un think<AT.NFUT> T old.man LIG this LNK cook-PT.NFUT nku? ?ulaqi? ku? wapit ]. NOM child T flying.squirrel ‘This old man thinks that the child is cooking the flying squirrel.’
c. I<um>aŋluŋ ku? naßakis ka hani ru? [ talk-an
think<AT,NFUT> T old.man LIG this LNK cook-LT,NFUT
NOM child T flying.squirrel
‘This old man thinks that the child is cooking (some part of)
the flying squirrel’.

d. I<um>aŋluŋ ku naßakis ka hani ru? [ si-taluk
think<AT,NFUT> T old.man LIG this LNK IT,NFUT-cook
ACC flying.squirrel NOM child T water
‘This old man thinks that the child is cooking a flying squirrel
with the water.’

In addition, there seems to be no TAM constraint on the ru?-marked embedded
clauses. The embedded verb ‘plant’ is allowed to take a different TAM from the matrix
clause, as illustrated in (4.38).

think<AT,NFUT>-1S.T LNK AT,NFUT<PERF>-plant ACC tomato
?ihiya?].
3S.T
‘I think that he has planted tomatoes.’

think<AT>-1S.T LNK AT,NFUT-plant ACC tomato 3S.T
‘I think that he planted/plants/is planting tomatoes.’

think<AT>-1S.T LNK AT,FUT-plant ACC tomato 3S.T
‘I think that he will plant tomatoes.’

4.1.2.2 Identification

The clause linker ru? has the same phonological shape as the coordinator ru? in
Mayrinax. According to Lillian Huang (1995a), the coordinating conjunction ru? joins
parts of a sentence (i.e., words, phrases, and independent clauses) that are grammatically
equal or similar. It leads to a reasonable conjecture that the homophonous clause linker

114 My informant reports that there is a semantic distinction between the PT talk-un in (4.37b) and the LT
talk-an in (4.37c). The patient of the PT talk-un, such as wapit ‘flying squirrel’ in (4.37b), is cooked
completely, while the same patient for the LT talk-an, such as wapit ‘lying squirrel’ in (4.37c), indicates
that only part of it is cooked.
ru? may be related to the coordinating conjunction ru?. In the following tests, I will examine whether the clause linker ru? is a coordinating conjunction or a complementizer. Below I list three criteria to test if the syntactic behaviors of the clause linker ru? fit those of the coordinating conjunction ru?.

First, the positions of the elements conjoined by a coordinating conjunction ru? are interchangeable, as shown in (4.39)–(4.41).

(4.39) NP ru? NP:
   a. βālaīq-mu ku? xuīl *(ru?) njau.
      PT.NFUT.like-1s.NOM T dog CONJ cat
      ‘I like cats and dogs.’
   b. βālaīq-mu ku? njau *(ru?) xuīl.
      PT.NFUT.like-1s.NOM T cat CONJ dog
      ‘I like dogs and cats.’

(4.40) VP ru? VP:
   a. iβaβawiq *(ru?) maγ-βatunux ?i? yata?.
      AT.NFUT:tall CONJ AT.NFUT-beautiful T aunt
      ‘Aunt is tall and beautiful.’
   b. maγ-βatunux *(ru?) iβaβawiq ?i? yata?.
      AT.NFUT-beautiful CONJ AT.NFUT:tall T aunt
      ‘Aunt is beautiful and tall.’

(4.41) CP ru? CP:
      AT.NFUT:wash ACC clothes T aunt CONJ AT.NFUT-work
      ?i? mama?].
      T uncle
      ‘Aunt is washing clothes, and Uncle is working.’
      AT.NFUT-work T uncle CONJ AT.NFUT:wash ACC clothes
      ?i? yata? ].
      T aunt
      ‘Uncle is working, and Aunt is washing clothes.’

But the elements linked by ru? cannot be reversed when the connected events are in a time sequence and/or cause-effect relation.
In (4.42) the occurrence of two events takes place in a fixed order—“the cigarette had caused the fire” before “the house was on fire”. Thus, the reverse order in (4.42b) is semantically unacceptable though it is still grammatical. Similarly, the meaning of (4.43b) is not the same as (4.43a), for the same reason. Thus, I avoid the situation in which the matrix clause and the embedded clause constitute a time sequence or a cause-effect relation in the interchangeability test in this study.

First, the two linked clauses can be exchanged if the linker ru? between the matrix complement clauses is a coordinating conjunction.


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115 The symbol # is used to indicate semantically felicitous sentences.
116 Mayrix Atayal allows at most two bound clitics to attach to the verb. The two bound personal pronouns are a bound nominative personal pronoun and a bound trigger personal pronoun. However, the two bound clitics are pronounced as one single prosodic unit. For instance, -misu? in (4.43) can be decomposed into a first person nominative -mi and a second person trigger -su?. Therefore, I use a colon to link the two glosses to mark the co-articulation here. 117 The conjunction ru ’and’ in Tsai (2007) corresponds to ru? ’and’ in other studies, such as Lillian Haung (1993:109–110). The distinction seems to lie in different analyses for the glottal stop in Atayal. In Li (1995) and Lillian Huang’s (1995a) analysis, the glottal stop is taken as a phoneme. On the other hand, Tsai’s (2007) does not include it, probably being treated as a predictable phonetic variation. The present study follows Li’s (1995) and Lillian Huang’s (1995) analysis and treats Mayrinax glottal stop as a phoneme.
   AT.NFUT.fast LNK AT.NFUT-run T rabbit LNK
   [1um>anlu?su?].
   think<AT.NFUT>-2s.t

The sentences in (4.44) suggest that the linker ru? may not be a coordinating conjunction since the two clauses cannot be switched.

Second, the coordinating conjunction ru? is obligatory. When there are two linked clauses, the linker ru? cannot be dropped, as seen in (4.39)–(4.41). Now examine if the clause linker ru? is obligatory. The preceding discussion has shown that the ru?-marker is obligatory when the complement-taking verb belongs to the first type, such as l<um>anlu? ‘think (AT)’, luji?un ‘think (PT)’, and k<um>aal ‘say (AT).’ Thus, the obligatoriness test suggests that the clausal linker ru? may be a coordinating conjunction for the ru?-marked complementation of the first type.

Let us move on to the third test to examine if the wh-element can be extracted out of the ru?-marked clause. The test is based on Ross’s (1967) CSC—the coordinating structure does not allow extraction out of a conjunct. My hypothesis is that the wh-extraction is not permissible if the ru?-marked clause is a coordinate construction.

   think<AT.NFUT> T aunt LNK AT.FUT-eat ACC what T child
   ‘Aunt thinks that the child will eat what?’

   think<AT.NFUT> T aunt LNK what T FUT-eat-PT
   nku? ?ulaqi? _____i]].
   NOM child
   ‘Aunt thinks what the child will eat?’
   (lit. ‘Aunt thinks what is (the thing) that the child will eat?’)

   what T know-PT.NFUT NOM aunt LNK FUT-eat-PT
   nku? ulaqi? _____i ]].
   NOM child
In (4.45c) the extracted wh-element nanuan ‘what’ cannot move out of the clause lead by ru?. This test suggests that the clause linker ru? may be a coordinating conjunction.

The above tests show conflicting results. The interchangeability test suggests that the linker ru? may not be a coordinating conjunction, but the wh-extraction test and the obligatoriness test support the opposite. That is, ru? carries the properties of both coordinating and subordinating clause linkers. I conjecture that the Mayrinax linker ru? represents an intermediate stage between the two items. Tsai (2007) proposes “conjunctive reduction” in Formosan languages, which can account for the in-between status of the linker ru?. According to Tsai (2007:601), "there is a general process in Formosan languages that reduces coordinate structures into their subordinate counterparts." Tsai (2007:600) proposes that the coordinate linker ru? in Squliq Atayal becomes a complementizer for either an adverbial clause or a complement clause. His evidence is mainly from the fact that the conjunction ru\textsuperscript{117} in Squliq Atayal can introduce a resultative clause or a sequential clause, as shown in (4.46) and (4.47), respectively.

(4.46) Squliq Atayal: Tsai (2007:594; glosses mine)
\begin{verbatim}
?suu yal qu tali ru m?wi qu rmai lyan-nya.
AT.NFUT.heavy very T Tali CONJ AT.NFUT.tired T horse ride.LT-3S.NOM
a. ‘Tali is too heavy, so the horse is tired after having been ridden by him.’

b. ‘Tali is too heavy, so the horse would be tired if ridden by him.’
\end{verbatim}

(4.47) Squliq Atayal: Tsai (2007:594; glosses mine)
\begin{verbatim}
wal m-lu kacir-rapa ru [ wal sinciku Δi ] qu tali,.
PST AT.NFUT-ride buffalo-water CONJ AT.go Hsinchu T Tali
‘Tali rode a water buffalo to go to Hsinchu.’
\end{verbatim}

In (4.46) the resultative clause led by ru is not a complement clause since it is not subcategorized for by the matrix verb ?suu ‘heavy’. In Squliq Atayal the conjunction ru

\textsuperscript{117} The conjunction ru ‘and’ in Tsai (2007) corresponds to ru? ‘and’ in other studies, such as Lillian Haung (1993:109–110). The distinction seems to lie in different analyses for the glottal stop in Atayal. In Li (1995) and Lillian Huang’s (1995a) analysis, the glottal stop is taken as a phoneme. On the other hand, Tsai’s (2007) does not include it, probably being treated as a predictable phonetic variation. The present study follows Li’s (1995) and Lillian Huang’s (1995) analysis and treats Mayrinax glottal stop as a phoneme.
can be used to link a defective clause, as in (4.47), where there is a missing argument coreferential with the matrix NP *qu Tali.*\(^{118}\)

The discussion in this section suggests that *ru?* be undergoing the reanalysis as a complementizer. Two facts about the *ru?*-marked complementation support this hypothesis. First, the clause linker *ru?* carries the properties of both the coordinating conjunction and complementizer. Second, the perception verbs can select both *cu?*-marked and *ru?*-marked clausal complements. Both of the facts suggest that the reanalysis is still in progress.

4.1.3 *fi?*-marked complementation

4.1.3.1 Syntactic properties

There are two types of *fi?*-marked complementation with a full complement clause. The first type involves cognition/perception predicates, such as *tal-an* ‘see (LT)’ and *?uji?-an* ‘forget (LT)’. The other type involves predicates which select a hypothetical event, such as *s<um>iwal* ‘promise (AT)’, and *ma-?icur* ‘fear (AT)’. In the first type, *fi?* can be replaced with *cu?*. In the second type, it cannot.

As discussed in the previous sections, perception verbs can take a *cu?*-marked or *ru?*-marked clausal complements. In addition, the linker *cu?* selected by a perception verb can be replaced with *fi?*. The examples are given below:

(4.48)  
\[
\text{tal-an-mu cu?/?i? [ tutiŋ-un na? cuquliq}
\]
\[
\text{see-LT.NFUT-1S.NOM LNK beat-PT.NFUT  NOM person}
\]
\[
\text{ku? ?ulaqi? la ]}. 
\]

T child ASP

‘I saw that a person beat the child.’

(4.49)  
\[
\text{puŋ-an-mu cu?/?i? [ r<um>akaap cu? βhut ku? ?ulaqi?].}
\]
\[
\text{hear-LT.NFUT-1S.NOM LNK catch<AT.NFUT> ACC squirrel T child}
\]

‘I heard that the child caught a squirrel’.}

---

\(^{118}\) In Mayrinax Atayal, the linker for the corresponding defective clause in (4.47) is *fi?*, not *ru?*.\)
Lillian Huang (1995a:201) observes that the clause linker ʔiʔ replaces cuʔ when the matrix predicate is a perception verb, but she does not provide further information about this replacement. My informants indicate that there is a pragmatic difference between the usage of cuʔ and ʔiʔ. The ʔiʔ-marked clausal complements seem to be pragmatically prominent in that they introduce highlighted information, whereas the cuʔ-marked ones do not. This may account for why not all instances of cuʔ preceding a full clause can be substituted by ʔiʔ.

Some verbs which select a cuʔ-marked full complement clause, like βaq-un ‘know (PT)’ and snua-un ‘believe (PT)’, do not allow ʔiʔ to replace cuʔ. The semantics of these verbs does not all ow them to subcategorize for a clausal complement which introduces new information. Note that the linker ʔiʔ can be dropped in (4.48) and (4.49). The ʔiʔ dropping loses the emphatic function as well. But the cuʔ dropping does not make any difference.

The ʔiʔ-marked complement clause of the second type is distinct from the one of the first type in that: (i) it is not replaceable with cuʔ; and (ii) it is interpreted as a hypothetical situation with no truth value. The verbs which subcategorize for a ʔiʔ-marked clause include s<um>iwal ‘agree (AT)’, siwal-an ‘agree (LT)’, ma-ʔicur ‘fear (AT)’, and kiʔicur-un ‘fear (PT)’. Below are the examples:

(4.50)  
\[s<um>iwal \quad ʔiʔ \quad yutas \quad *(ʔiʔ)/*cuʔ? \quad m\text{-}umua? \quad cuʔ \quad claq\]
\[, \quad agree<AT.NFUT> \quad T \quad \text{grandpa} \quad \text{LNK} \quad \text{AT}-\text{cultivate} \quad \text{ACC} \quad \text{field} \quad ʔiʔ \quad \text{mama}?].\]
\[T \quad \text{uncle}\]
\[‘\text{Grandpa agreed that Uncle (could) cultivate the field.’}\]

(4.51)  
\[siwal-an \quad niʔ \quad yataʔ \quad *(ʔiʔ)/*cuʔʔ \quad 1<um>aŋuy \quad kuʔ \quad ?ulaqiʔ? \quad].\]
\[, \quad agree<AT.NFUT> \quad \text{NOM} \quad \text{aunt} \quad \text{LNK} \quad \text{swim}<AT> \quad T \quad \text{child}\]
\[‘\text{Aunt agreed that the child (may) swim.’}\]

(4.52)  
\[ma-ʔicur \quad kuʔ \quad naβakis \quad *(ʔiʔ)/*cuʔʔ \quad r<um>aŋaŋ aŋaŋ \quad cuʔ \quad βawak\]
\[, \quad AT.NFUT-fear \quad T \quad \text{old.man} \quad \text{LNK} \quad \text{catch}<AT> \quad \text{ACC} \quad \text{pig}\]
\[kuʔ \quad ?ulaqiʔ? \quad].\]
\[T \quad \text{child}\]
\[‘\text{The old man fears that the child (may) catch a pig.’}\]
In (4.50)–(4.53), the linker ḟi? is not optional and cannot be substituted by cu?. The ḟi?-marked full complement clauses of the second type express a grant that has not been realized, as in (4.51)–(4.52), or a hypothetical situation which is deemed by the speaker to be less possible or uncertain, (4.53)–(4.54).

Note that there seems to be one counterexample that the linker ḟi? can be replaced by cu? in the ḟi?-marked complementation with the complement-taking verb ma-?icuv ‘fear (AT)’.

In (4.54a) the main verb ma-?icuv seems to be followed by a cu?-marked complement clause. However, the cu?-marked clause in (4.54a) is not a complement clause if compared to the example (4.54b) with a ḟi?-complement clause. In the cu?-marked clause, the one-argument verb uah ‘come’ can be affixed with a PT future marker ḟa- in (4.54a) but disallows the occurrence of the AT future marker ma-. The cu?-marked clause in (4.54a) is, in fact, an accusative nominalized clause. The accusative nominalized clause is a nominal element and, accordingly, has the same distribution as an accusative NP, such as cu? xuil ‘dog (ACC)’ in (4.55).
b. ma-?icuɣ cu? xuil ku? ?a-?ulaqi?.
   AT.NFUT-be.afraid ACC dog T PL-child
   ‘The children are afraid of a dog.’

   AT.NFUT-fear ACC NAT.FUT-come NOM aunt T PL-child
   ‘The children fear Aunt’s coming.’

   AT.NFUT-fear LNK AT.FUT-come T aunt T PL-child
   ‘The children fear that Aunt will come.’

The examples in (4.54a) and (4.56a) show that the accusative-marked clause cu? ?a-?uah ni? yata? has the identical distributions with cu? xuil in (4.55a) and (4.55b). It is clear that the cu?-marked clause in (4.54a) is an accusative nominalized clause, not a complement clause. On the other hand, the complement clause ma-?uah ?i? ?a-?ulaqi? can only follow the matrix clause, as in (4.54b). It is not allowed to occur between the matrix verb ma-?icuɣ and matrix argument ?a-?ulaqi?, as in (4.55b).

The ?i?-marked complement clauses of the second type can be inflected for present (progressive) tense, future tense, and past (perfective) tense, as in (4.57).

   fear-PT.NFUT NOM chief LNK catch<AT.NFUT> ACC ghost
   T child
   ‘The chief fears that the child (may) catch a ghost.’

   fear-PT.NFUT NOM chief LNK AT.FUT-catch ACC ghost T child
   ‘The chief fears that the child will catch a ghost.’

   fear-PT.NFUT NOM chief LNK catch<AT.NFUT>PERF> ACC ghost
   T child
   ‘The chief fears that the child may have caught a ghost.’

The interpretations of the TAMs in the ?i?-marked complements in (4.57) are different from the ones of their counterparts in the independent clauses. The ?i?-marked
complements in (4.57) are all indicative of hypothetical or unrealized proposition. The embedded verb r<um>aakaap ‘catch (AT)’ with the AT marker <um> in (4.57a) does not indicate present or present progressive action as it does in the independent clause. Instead, it refers to a hypothetical event in the present. The same situation also occurs in the future-tense pa-rakaap ‘catch (AT.FUT)’ in (4.57b) and r<um>in>aakaap ‘catch (AT.NFUT.PERF)’ in (4.57c). Both verbs are involved with hypothetical or uncertain events in the future and in the present, respectively.

There is no trigger constraint on the ?i?-marked full complement clauses. That is, the ?i?-marked full complement clauses are free in their selection of trigger marking, as shown below:

(4.58)  

T person  
‘The old person agrees that the person (could) make wine.

T wine  
‘The old person agrees that the person (could) make the wine.

(4.59)  

T person  
‘The old person agrees that the person (could) make wine.

T wine  
‘The old person agrees that the person (could) make the wine.

4.1.3.2 Identification

To recapitulate, the ?i?-marked full complement clauses are divided into two types. In the first type, the linker ?i? is used to replace the complementizer cu? when a pragmatic
emphasis is imposed upon the ?i?-marked clausal complement. Based on the discussion in Section 4.1.1.2, I conclude that the clause linker cu? is a complementizer. Accordingly, the emphatic ?i? can be treated as an alternative for the complementizer cu?. It can replace cu? whenever there is a pragmatic need.

As for the second type, the linker ?i? for the full complement clause cannot be the emphatic complementizer since it cannot be replaced with cu? and does not have any emphatic effect. There are several items that have the same phonological shape as the linker ?i?: (i) a trigger/accusative marker ?i? for proper nouns, as in (4.60); (ii) a preposition for temporal and locative NPs, as in (4.61); and (iii) a subordinator for conditional clauses, as in (4.62).

(4.60) a. Trigger marker for a proper noun:
mi-lin=y ?i= sayun la.
AT.NFUT-cry T Sayun ASP
‗Sayun cried.‘
b. Accusative marker for a proper noun:
embrace <AT.NFUT> ACC Sayun T man
‗The man embraced/embraces/is embracing Sayun.

(4.61) a. Preposition for a temporal NP:
AT.FUT-go T Father OBL tomorrow
‗Father will go tomorrow.‘
b. Preposition for a locative NP:
l<um>aŋuy ?i= luliŋŋ ku? ?a-ʔulaqi?.
swim AT.NFUT OBL river T PL-child
‗The children swam/swim/are swimming in a river.‘

(4.62) a. Subordinator for an irrealis conditional clause: (Lillian Huang 1995a:235; glosses mine)
?i= ma-hahapuy=su? γa?, pa-βahu=q=cu.
if AT.NFUT-cook=2S.T TOP AT.FUT-wash.clothes=1S.T
‗If you cook, I will wash clothes.‘
b. Subordinator for an irrealis conditional clause: (Lillian Huang 1995a:237; glosses mine)

\[ ?i? \text{ tal-an=mi?} \text{ yumin ya?}, \betaa-\betaaiq-\emptyset=\text{mu} \text{ ku? xuil.} \]

if \text{ see-LT.NFUT=}1S.NOM:T \text{ Yumin TOP FUT-give-IT=}1S.NOM T \text{ dog}

‘If I see Yumin, I will give him the dog.’

The linker \( ?i? \) of the second type cannot be a trigger prenominal marker \( ?i? \) because there is a matrix trigger NP in the sentence, such as \( ku? \text{ na}ba\text{kis} \) in (4.58). Another reason is that the trigger marker for a nominalized clause is \( ku? \), not \( ?i? \). Lillian Huang (2002:204) shows that a nominalized clause serving as a triggered argument of the sentence is indicated by a trigger marker \( ku? \) in Mayrinax Atayal, as the examples in (4.63) illustrate.

\begin{align*}
\text{(4.63) Mayrinax Atayal: (Lillian Huang 2002:204–205, glosses mine)} & \\
\text{Q:} & \text{ ima?i [ ku? pa-\text{?}ayal } \text{i } \text{ cu? pila? ] ?} \\
& \text{ who T AT.FUT-take ACC money } \\
& \text{ ‘Who will take the money?’} \\
& \text{ (lit. ‘Who is the one that will take the money?’)} \\
\text{A:} & \text{ ya}ba\text{i [ ku? pa-\text{?}ayal } \text{i } \text{ cu? pila? ]}. \\
& \text{ father T AT.FUT-take ACC money } \\
& \text{ ‘Father will take the money.’} \\
& \text{ (lit. ‘Father is the one who will take the money.’)}
\end{align*}

Also, it cannot be an accusative prenominal marker \( ?i? \) since the PT verb, such as \( ki?icur-un \) ‘fear (PT)’ in (4.57), does not allow an accusative-marked argument.

The linker \( ?i? \) of the second type is homophonous with the preposition for some temporal/locative expressions, such as \( ?i? \text{ casan} \) ‘tomorrow’ in (4.61a) and \( ?i? \text{ luliyug} \) in (4.61b). Crosslinguistically, it is not uncommon for the object of psych verbs to be oblique, such as \textit{fovume} ‘fear’ in Greek (Kitis 2009). Thus, it can be hypothesized that the Mayrinax clause linker \( ?i? \) may have its origin in the homophonous preposition \( ?i? \). However, Mayrinax Atayal does not use the preposition \( ?i? \) to mark the object of psych verbs, such as \( ma?icur \) ‘fear (AT)’. Instead, the stimulus/source of the verb of fearing, such as \( cu? \text{ ?utux} \) ‘ghost’ in (4.64), is marked by the accusative marker \( cu\?i? \).
Thus, the clause linker ḷi? for the second type of the ḷi?-marked complementation cannot be treated as a preposition.

The above discussion suggests that the clause linker ḷi? of the second type is neither a trigger/accusative marker nor a preposition. Therefore, the clause linker ḷi? must be analyzed as a complementizer.

4.1.4 ḷa?-marked complementation

4.1.4.1 Syntactic properties

There are two verbs that select a ḷa?-marked complement clause, which happen to be homophonous: one-place predicate asi ‘seem’ and two-place predicate asi ‘assume’.

Consider the following sentences. (Note: In order to differentiate the two asis, asi₁ and asi₂ are used to stand for the ‘seem’ and ‘assume’, respectively, in the transcription below.)

(4.65)  
asi₁ [*(<ya?>) q<um>aluap ku? mamaliku ka hani la].
seem LNK hunt<AT.NFUT> T man LIG this ASP
‘It seems that this man hunted.’

(4.66)  
asi₂ nku? naḇakis [ *(<ya?>) r<um>akaap cu? βawak assume NOM old.man LNK catch<AT.NFUT> ACC pig
?i? Sayun].
T Sayun
‘The old man assumes that Sayun caught/catches/is catching a pig.’

As illustrated in (4.65) and (4.66), the two asis are similar in that: (i) both select a ḷa?-marked full complement clause; and (ii) the linker ḷa? is obligatory. Asi₁ with the meaning ‘seem’ or ‘be likely’ is a one-place predicate, taking only a clausal complement, as in (4.65). In addition to the clausal complement, the two-place predicate asi₂ ‘assume’ requires an actor as its argument as well, such as nku? naḇakis ‘old man’ in (4.66).
At first glance, the difference of the argument structures between \textit{asi}_1 and \textit{asi}_2 seems to be similar to the AT/NAT distinction of the same verb root, such as \textit{βaq} ‘can (AT)’ and \textit{βaq}-\textit{un} ‘know (PT)’ in (4.67).

\begin{equationenum}
\begin{enumerate}
\item \textit{β}aq=si? mi-ray cu? kulu?.
\begin{tabular}{ll}
AT.NFUT.can=2S.T:LINK & AT-drive \ ACC \ car \\
\end{tabular}
\begin{tabular}{ll}
\textit{You} & \textbf{can drive a car.}'
\end{tabular}
\item \textit{β}aq-un nku? tawki ku? hani.
\begin{tabular}{ll}
\textit{know}-PT.NFUT \ NOM \ chief \ T \ this \\
\end{tabular}
\begin{tabular}{ll}
\textit{The chief knows this}.
\end{tabular}
\end{enumerate}
\end{equationenum}

However, the difference between \textit{asi}_1 and \textit{asi}_2 cannot be treated as a distinction between AT and NAT forms of the same verb mainly for two reasons. First, both \textit{asi}_1 and \textit{asi}_2 are unmarked for any trigger marking. If \textit{asi}_1 ‘seem’ is Ø-marked AT verb like \textit{βaq} ‘can (AT)’ in (4.67a), \textit{asi}_2 ‘assume’ should be marked for a certain NAT affix, such as the PT -\textit{un} suffixed onto \textit{βaq-un} ‘know (PT)’ in (4.67b). However, \textit{asi}_2 is also unmarked as \textit{asi}_1. On the other hand, \textit{asi}_2 behaves like NAT verbs in that the actor (experiencer) is marked as nominative, not trigger, as shown in (4.66).

Second, \textit{asi}_1 cannot be treated as an AT verb since it lacks an actor argument. It is ungrammatical for \textit{asi}_1 to have an actor argument, even when it is intended to be coreferential with the embedded actor, such as \textit{ku}? \textit{ ulaqi}? (4.68b). Furthermore, it is equally ungrammatical to have a nominative actor argument, such as \textit{nku}? \textit{ ulaqi}? in (4.68c). Thus, there is no evidence to suggest whether \textit{asi}_1 is an AT or NAT verb. Rather, these examples only show that it is a one-place predicate.

\begin{equationenum}
\begin{enumerate}
\item \textit{asi}_1 γa? [ mi-taal cu? ruas ku? \textit{ ulaqi}? ].
\begin{tabular}{ll}
\textit{seem} \ LNK \ AT.NFUT-read \ ACC \ book \ T \ child \\
\end{tabular}
\begin{tabular}{ll}
\textit{It seems that the child read/reads/is reading a book}.
\end{tabular}
\item \textit{asi}_1 \textit{ ku}? \textit{ ulaqi}?\textit{ γa}? [ mi-taal cu? ruas _____ ].
\begin{tabular}{ll}
\textit{seem} \ T \ child \ LNK \ AT.NFUT-read \ ACC \ book \\
\end{tabular}
\item \textit{asi}_1 \textit{ nku}? \textit{ ulaqi}?\textit{ γa}? [ mi-taal cu? ruas _____ ].
\begin{tabular}{ll}
\textit{seem} \ NOM \ child \ LNK \ AT.NFUT-read \ ACC \ book \\
\end{tabular}
\end{enumerate}
\end{equationenum}
While it is possible for the ρa?-marked complement of asi₂ to have an argument
coreferential with the matrix actor, neither of the coreferential arguments can be omitted, as
shown in (4.69). (Note: the omitted argument is represented by a triangle symbol “Δ”.)

(4.69)  

a. asi₂-[mu] [ ma-ʔuah-cu₁ cuβalay ].
assume-1S.NOM LNK AT.FUT-come-1S.T surely
‘I assume that I will/may surely come.’

b. *asi₂-[Δ] [ ma-ʔuah-cu₁ cuβalay ].
assume LNK AT.FUT-come-1S.T surely

c. *asi₂-[mu] [ ma-ʔuah-[Δ] cuβalay ].
assume-1S.NOM LNK AT.FUT-come surely

The examples in (4.69) show that the ρa?-marked clausal complement needs to be a full
complement clause.

No TAM constraint is found in the ρa?-marked clausal complements. Both asi₁ and
asi₂ allow a full range of TAMs in the complement clauses. For example:

(4.70)  

seem LNK AT.FUT-come T aunt
‘It seems that Aunt will come.’

b. asi₁ [ m-ʔuah ?i? yata? ].
seem LNK AT.NFUT-come T aunt
‘It seems that Aunt came/comes/is coming.’

c. asi₁ [ m-ʔuah ?i? yata? ].
seem LNK AT.NFUT-<PERF>come T aunt
‘It seems that Aunt has come.’

(4.72)  

a. asi₂-[nha] [ pa-taluk cuʔ aʔŋ kuʔ naβakis ].
assume-3P.NOM LNK AT.FUT-cook ACC soup T old.man
‘They assume that the old man will cook soup.’

b. asi₂-[nha] [ t<um>aluk cuʔ aʔŋ kuʔ naβakis ].
assume-3P.NOM LNK cook<AT.NFUT> ACC soup T old.man
‘They assume that the old man made/makes/is cooking soup.’

c. asi₂-[nha] [ t<um>in>aluk cuʔ aʔŋ kuʔ naβakis ].
assume-3P.NOM LNK cook<AT.NFUT><PERF> ACC soup T old.man
‘They assume that the old man has cooked soup.’
4.1.4.2 Identification

The clause linker γαʔ has the same phonological realization as the topic marker γαʔ in Mayrinax. This section examines if the linker γαʔ possesses similar properties to its homophonous topic marker γαʔ.

In Mayrinax, topic always occurs in the sentence-initial position without a prenominal marker and is followed by γαʔ. There seems to be no constraint as to what can undergo topicalization in AT sentences. All the arguments in AT sentences can be topicalized, such as the trigger NP in (4.7a), the accusative NP in (4.7b), and the oblique in (4.7c). However, a nominative NP in the NAT sentence cannot be topicalized, as in (4.75b).

   AT:FUT-cook ACC soup OBL tomorrow T chief
   ‘The chief will cook soup tomorrow.’

   chief TOP AT:FUT-cook ACC soup OBL tomorrow
   ‘As for the chief, (he) will cook soup tomorrow.’

   soup TOPIC AT:FUT-cook OBL tomorrow T chief
   ‘As for soup, the chief will cook (it) tomorrow.’

c. (?iʔ?) casan, γαʔ?, pa-taluk cuʔ? ?aʔŋ ___i kuʔ? tawkiʔ?.  
   OBL tomorrow TOP AT:FUT-cook ACC soup T chief
   ‘As for tomorrow, the chief will cook soup.’

   FUT-cook-PT NOM chief OBL tomorrow T soup
   ‘The chief will cook soup tomorrow.’

   soup TOP FUT-cook-PT NOM chief OBL tomorrow
   ‘As for soup, the chief will cook (it) tomorrow.’

   chief TOP FUT-cook-PT OBL tomorrow T soup
   Intended: ‘As for the chief, (he) will cook soup tomorrow.’

   OBL tomorrow TOP FUT-cook-PT NOM chief T soup
   ‘As for tomorrow, the chief will make soup.’
Another characteristic of the topic is that it is followed by a pause to make it distinct from the rest of the sentence, which forms a topic-comment contrast. The pause is represented by a comma in my transcription, as shown in (4.73) and (4.75). Note that the topic is not confined to an argument, but can also be an adverbial phrase, as in (4.75c). In Mayrinax the marker ya? is also used to mark some types of adverbial clauses (cf. Lillian Huang 1995a). The ya?-marked adverbial clauses mainly cover temporal clauses, conditional clauses, and concessive clauses, as shown in (4.76)–(4.78).

(4.76) Temporal clause:

```
AT.NFUT-sleep-2S.T TOP AT.NFUT.leave T mother ASP
‘When you were sleeping, Mother left.’
```

(4.77) Conditional clause:

```
rain<AT.NFUT> OBL tomorrow TOP NEG-1S.T AT.FUT-come
‘If it rains tomorrow, I will not come.’
```

(4.78) Concessive clause:

```
(ani) ma-y-þatunux ku? makurakis ka haca ya?, ?ini?
though AT.NFUT-beautiful T girl LIG that TOP NEG
want-AT.NFUT-marry120 ACC mate
‘Though that girl is beautiful, (she) does not want to get married.’
```

Since topicalization involves movement, the sentence is still grammatical if the fronted topic is returned to its original position. It is plausible that the clause containing asi/lasi is a topicalized clausal trigger of a pseudo-cleft construction. The structures before/after topicalization are schematized below:

---

119 The use of ca? occurs in my data collection by chance. My informants indicate that it has no difference from the accusative case marker cu?. The accusative marker cu? can be replaced by ca? only in a few cases, such as ca? ?utux ‘ghost (ACC)’, ca? bwinax ‘foreigner (ACC)’, etc.

120 The word ?usa? means ‘marry’ when followed by a person. The word ?usa? is a polyseme which also means ‘go’.
Topicalization of the trigger of an equational construction is common in Mayrinax, as illustrated in (4.80).

        Hakka T mother-1S.Poss
        ‘My mother is a Hakka.’

           mother-1S.Poss TOP Hakka
           ‘My mother, (she) is a Hakka.’

If the clausal constituent before the linker \(\gamma a?\) is a topicalized clause, as in (4.80b), then, it should be able to occur in its original position, as shown in (4.80a). Let’s use this test to examine the \(\gamma u\?)-marked complementation.

(4.81)  a. [asi1 ]; \(\gamma a?\) [q<um>aluap cu? \(\beta\)awak ku? mamaliku ] ____i.
        seem LNK hunt<AT.NFUT> ACC pig T man
        ‘It seems that the man hunted/hunts/is hunting a pig.’

        b. *[q<um>aluap cu? \(\beta\)awak ku mamaliku ] ku? [asi1 ].
           hunt<AT.NFUT> ACC pig T man T seem

        assume-2S.NOM LNK pick<AT.NFUT> ACC tea T man
        ‘You assume that the man picked/picks/is picking tea (leaves).’

           pick<AT.NFUT> ACC tea T man T assume-2S.NOM

The examples in (4.81) and (4.82) show that it is not possible to return the elements preceded by the clause marker \(\gamma a?\), like \(asi\) in (4.82a) and \(asi2-su?\) in (4.82a), back to their “original” positions. The recovery test suggests that the linker \(\gamma a?\) is not a topic marker.
Thus, it is most likely that the clause linker .Concurrent is a complementizer. The wh-extraction test lends partial support to this hypothesis.

(4.83)  
  seem  LNK  catch<AT.NFUT>  ACC  what  T  child
  ‘It seems that the child is catching what?’

  seem  LNK  what  T  catch-PT.NFUT  NOM  child
  ‘It seems what the child is catching?’
  (lit. ‘It seems what is (the thing) that the child is catching?’)

c.  nanuan, [ ku? asi₁  Concurrent[ rakaap-un  nku?  ulaqi?  ]].
  what  T  seem  LNK  catch-PT.NFUT  NOM  child
  ‘What does it seem that the child is catching?’
  (lit. ‘What is (the thing) that it seems that the child is catching?’)

(4.84)  
  assume  NOM  aunt  LNK  AT.NFUT-eat  ACC  what  T  child
  ‘Aunt assumes that the child is eating what?’

b. asi₂  ni?  yata?  Concurrent[ niq-un  ].
  assume  NOM  aunt  LNK  what  T  eat-PT
  NOM  child
  ‘Aunt assumes what the child is eating?’
  (lit. ‘Aunt assumes what is (the thing) that the child is eating?’)

  what  T  assume  NOM  aunt  LNK  eat-PT
  NOM  child
  ‘What does Aunt assume that the child is eating?’
  (lit. ‘What is (that thing) that Aunt assumes that the child is eating?’)

In (4.83) and (4.84), the wh-element nanuan ‘what’ can be extracted out of the Concurrent-marked clauses. This shows that Concurrent-marked clause is not a coordinate clause. Accordingly, the linker Concurrent is better analyzed as a complementizer—a subordinator that serves as the head of the complement clause.
4.1.5 na?-marked complementation

4.1.5.1 Syntactic properties

One verb, *ua?* ‘hope/wish’, obligatorily selects an embedded clause led by a linker *na?* in Mayrinax. The *na?*-marked complement clause is used to express a hypothetical situation or expectation of the speaker (Lillian Huang 1995a:241–243). The clause linker *na?* is obligatory, as in (4.85).

(4.85)  

```plaintext

hope LNK AT.FUT-rain OBL today

'(I) hope that (it) will rain today.'
```

The verb *ua?* has no overt morphological marker for trigger marking. An overt NP is not allowed to appear in the matrix clause with *ua?*. Semantically, the first person singular pronoun ‘I’ is the default (or implied) actor of the verb *ua?* though this default actor cannot be overtly expressed, as in (4.86b) and (4.86c).

(4.86)  

a.  

```plaintext

hope LNK AT.FUT-come OBL tomorrow T child-1S.POSS

'(I) hope that my child will come tomorrow.'
```

b.  

```plaintext

hope 1S.T LNK AT.FUT-come OBL tomorrow T child-1S.POSS
```

c.  

```plaintext

hope-1S T LNK AT.FUT-come OBL tomorrow T child-1S.POSS
```

When the actor of *ua?* is not the first person singular, there are two ways to mark such actor. One is to topicalize the actor other than ‘I’ and to prepose it to the sentence-initial

---

121 My data here are slightly different from Lillian Huang’s (1995a:241–243). My informants pronounce *ua?* ‘hope/wish’ while Lillain Huang’s (1995a) version is *u?wa?*. The phonological differences between the data might be attributed to a language change between generations in Mayrinax. My major informants are Lillian Huang’s (1995a) major informant’s eldest daughter and two sons.
position, as in (4.87a). The other is to embed *ua?* and its complement in another clause headed by a verb *l<um>aŋluŋ* ‘think (AT)’ and realize the actor as the actor of the matrix verb, as in (4.87b). A linker *ru?* has to appear between *l<um>aŋluŋ* ‘think (AT)’ and *ua?* ‘hope/wish’.

(4.87)  
   2S TOP hope LNK AT.FUT-buy ACC vegetable 3S.T
   ‘As for you, (you) hope that he will buy vegetables.’

   think<AT>-2S.T LNK hope LNK AT.FUT-buy ACC vegetable 3S.T
   ‘You think that (you) hope that he will buy vegetables.’

The above facts suggest that the verb *ua?* is a one-place predicate that takes just one argument (that is, the *na?*-marked clausal complement).

The *na?*-marked clausal complements are typically used to manifest wishes, commands, emotion, possibility, judgment, opinion, necessity, or statements that are contrary to the fact at present. The clause linker *na?* is treated as an irrealis marker in Lillian Huang’s (1995a) analysis. However, note that the embedded verbs are not inflected for irrealis, which are realized by suffixes -*ay*, -*aw* and -*ani* (cf. Section 2.1.3). Instead, the *na?*-marked complement clauses adopt the regular present/future tense marking, as shown in (4.88) and (4.89).

(4.88)  
   hope LNK AT.NFUT.can-1S.T AT-drive ACC car
   ‘(I) hope that I will drive a car.’

(4.89)  
   hope LNK AT.FUT-catch ACC fire.fly T uncle
   ‘(I) hope that Uncle will catch fireflies.’

   hope LNK FUT-beat-PT NOM father T person LIG that
   ‘(I) hope that Father will beat that person.’
d. uam na? [a-aras-cu nku? makurakis cu? quasia?]. hope LNK FUT.BT-fetch-1S.T NOM girl ACC water ‘(I) hope that the girl will bring water for me.’

The embedded verb in (4.88) carries the present tense morphology, meanwhile the embedded verbs in (4.89a)–(4.89d) are inflected for future tense. Note that when used in a na?-marked clause, the proposition expressed in present tense is interpreted as a counter-factual event. For example, in (4.88), the skill or rights of driving a car has not been developed or owned. Similarly, the future tense expresses a wish or an expectation which may/might be fulfilled in the future. In this sense, na?-marked clauses are similar to subjunctives in other languages. The examples in (4.89) also illustrate that na?-marked embedded clauses can take the full range of trigger marking. That is, the na?-marked complement clauses are not restricted to any specific type of trigger marking.

4.1.5.2 Identification

The clause marker na? is homophonous with various other items, including a possessive marker, a nominative/beneficiary/instrument marker for indefinite NPs, and an adverb na? ‘still’. For example:

(4.90) Possessive marker:

(4.91) Nominative/beneficiary/instrument marker for indefinite NPs:
a. rakaap-un na? cuqliq ku? quru? la. catch-NFUT NOM person T snake ASP ‘Someone caught/catches/is catching the snake.’
AT.NFUT-drink-1S.T INS bamboo.spoon ACC soup
‘I drank/am drinking soup with a bamboo spoon.’

(4.92) Adverb ‘still’:
luguluŋ-un-misu? na?.
think-PT-1S.NOM:2S.T still
‘I am still thinking of you.’

The clause linker na? cannot be a possessive marker though they are homophonous.

The possessive marker na? is used to mark a noun which is used to modify another noun.
That is, the position of a possessive marker na? is between two nominal elements, whose relationship is schematized as follows:

(4.93) Structure: [ NP₁ [ na? ] NP₂ ]
Head noun possessive marker modifier

Example:
kai na? itaal
language’ of Atayal
‘language of Atayal’ or ‘Atayal language’

As introduced in Section 4.1.5.1, the clause linker na? does not occur between two nominal elements. Instead, it is between the matrix verb ua? ‘hope’ and a full embedded clause. Therefore, the clause linker na? cannot be treated as a possessive marker.

The clause linker na? does not behave like a prenominal marker, either. The main reason is that the clause linker na? carries mood information for the embedded proposition, while the prenominal markers na? is used to mark the grammatical relation of an argument in a clause. The examples in (4.91) show that na? is a nominative marker for an actor cuquliq in (4.91a), a beneficiary marker for cuquliq in (4.91b), and an instrument marker for sasuway ‘bamboo spoon’ in (4.91c). However, the clausal complement of ua? is not in any of these relations to the verb.

The clause linker na? cannot be analyzed as an adverb na? ‘still’, as in (4.92). The positions of the two na?’s are different in relation to the clauses where they reside. The
clause linker na? precedes the embedded clause, whereas the adverb na? is suffixed to the verb. Thus, the clause linker na? and the progressive marker na? are two different items.

Having excluded the possibilities of a possessive marker, a prenominal marker and an adverb, we are left with the possibility of the clause linker na? being a complementizer. The complementizer analysis of na? is supported by the fact that the marker na? can replace other clause linkers, such as ru? in (4.94a) and ya? in (4.95a).

(4.94)  
\begin{align*}
a. & \quad 1<um> \text{anlu} \- \text{cu} \quad \text{ru}? \quad [ \text{ma-\-\-\-} \beta\text{usuq} \quad ?ihiya? \quad \text{la} ].
& \quad \text{think}<\text{AT-\-NFUT}\quad -1S.T \quad \text{LNK} \quad \text{AT-\-NFUT-\-get\-drunk} \quad 3S.T \quad \text{ASP}
& \quad ' \text{I think that he gets drunk.}'

b. & \quad 1<um> \text{anlu} \- \text{cu} \quad \text{na}? \quad [ \text{ma-\-\-\-} \beta\text{usuq} \quad ?ihiya? \quad \text{la} ].
& \quad \text{think}<\text{AT-\-NFUT}\quad -1S.T \quad \text{LNK} \quad \text{AT-\-NFUT-\-get\-drunk} \quad 3S.T \quad \text{ASP}
& \quad ' \text{I think (though I am not sure) that he got drunk.'}
\end{align*}

(4.95)  
\begin{align*}
a. & \quad \text{asi}_2\text{-}\text{nha}? \quad \text{ya}? \quad [ \text{q<um>\-\-\-} \text{uriq cu? pila? ku? ?ulaqi?} ].
& \quad \text{assume-3P.NOM} \quad \text{LNK} \quad \text{steal}<\text{AT-\-NFUT}\quad \text{ACC} \quad \text{money} \quad \text{T child}
& \quad ' \text{They assume the child stole money.'}

b. & \quad \text{asi}_2\text{-}\text{nha}? \quad \text{na}? \quad [ \text{q<um>\-\-\-} \text{uriq cu? pila? ku? ?ulaqi?} ].
& \quad \text{assume-3P.NOM} \quad \text{LNK} \quad \text{steal}<\text{AT-\-NFUT}\quad \text{ACC} \quad \text{money} \quad \text{T child}
& \quad ' \text{They assume (though they are not sure) that the child stole money.'}
\end{align*}

Note that the clause linker na? can only replace certain linkers whose matrix verbs select a hypothetical proposition as its complement, such as l<um>anlu ‘think (AT)’ in (4.94) and asi2 ‘assume’ in (4.95). The use of na? expresses the speaker’s uncertainty about the embedded proposition. Thus, those verbs which select a propositional complement with truth value do not allow na? to be a clause linker, such as \beta\text{aq-un} ‘know (PT)’ in (4.96).

(4.96)  
\begin{align*}
a. & \quad \text{\beta\text{aq-un}-\-\-\-} \text{mu} \quad \text{cu}? \quad [ \text{ma-\-\-\-} \beta\text{usuq} \quad ?ihiya? \quad \text{la} ].
& \quad \text{know-PT-\-NFUT-1S.NOM} \quad \text{LNK} \quad \text{AT-\-NFUT-\-get\-drunk} \quad 3S.T \quad \text{ASP}
& \quad ' \text{I know that he gets drunk.'}

b. & \quad *\text{\beta\text{aq-un}-\-\-\-} \text{mu} \quad \text{na}? \quad [ \text{ma-\-\-\-} \beta\text{usuq} \quad ?ihiya? \quad \text{la} ].
& \quad \text{know-PT-\-NFUT-1S.NOM} \quad \text{LNK} \quad \text{AT-\-NFUT-\-get\-drunk} \quad 3S.T \quad \text{ASP}
\end{align*}

Further, the outcome of the wh-extraction test also supports this complementizer analysis.
     hope  LNK  buy<AT.NFUT.PERF>  ACC  what  T  child-1S.POSS
     ‘(I) hope that my child may have bought what?’

     b.  ua? [ na? nanuan, [ ku? βa-β<in>as-un
         hope  LNK  what  T  RED-buy<PERF>-PT.NFUT
         nku? ?ulaqi?-mu ____i ]].
     NOM  child-1S.POSS
     ‘(I) hope what my child may have bought?’
     (lit. ‘(I) hope what is (the thing) that my child may have bought?’)

     c.  nanuan, [ ku? ua? [ na? ____i [ βa-β<in>as-un
         what  T  hope  LNK  RED-buy<PERF>-PT.NFUT
         nku? ?ulaqi?-mu ____i ]]].
     NOM  child-1S.POSS
     ‘What do I hope that my child may have bought?’
     (lit. ‘What is (the thing) that I hope that my child may have bought?’)

The examples in (4.97) show that the wh-element nanuan can remain in situ, as in (4.97a),
occur in the predicate of an embedded pseudo-cleft, as in (4.97b), and move out of the
na?-marked embedded clause, as in (4.97c). The examples in (4.97) suggest that the na?-marked complement cannot be a conjoined clause of a coordinate structure. Instead, the
na?-marked embedded clause is better analyzed as a subordinating construction of a
complement type and, accordingly, the clause linker na? as a complementizer.

Lastly, it should be noted that a complementizer for subjunctive clauses is also found in
Tsou. As will be discussed in Section 5.1.1.1, the Tsou subjunctive marker -ci is attached to
the complementizer ho, as shown in (5.15a).

(5.15) Tsou: hoc-i-marked complementation

a.  os-ʔo taʔai-a [ *(ho)-ci m-ucu ho hucm ].
     NAT-1S.NOM  hope-PT  LNK-SBJV  AT-rain  OBL  the.next.day
     ‘I hope that (it) would rain tomorrow.’

Unlike the morphological complex complementizer ho-ci in Tsou, the Mayrinax
complementizer na? appears to be a portmanteau morph representing the complementizer
and subjunctive mood marker.
4.1.6 *mha*-marked complementation

4.1.6.1 Syntactic properties

The element *mha*- is used to introduce direct speech in Mayrinax (cf. Lillian Huang 1995a). The verbs which select a direct-quote complement are utterance predicates, such as *k<um>aal* ‘say (AT)’ in (4.98a), *kal-un* ‘tell (PT)’ in (4.99a), and *san* ‘say (LT)’ in (4.100a).

   say<AT.NFUT> 3S.T LNK AT.NFUT-sit-1S.T
   ‘He says, “I am sitting.”’

   say<AT.NFUT> 3S.T LNK AT.NFUT-sit-1S.T
   ‘He says that I am sitting.’

tell-PT.NFUT-2S.NOM 1S.T LNK AT.NFUT-plant ACC tomato
?i? mama?”.
   T uncle
   ‘You told me, “Uncle is planting tomatoes.”’

tell-PT.NFUT-2S.NOM 1S.T LNK AT.NFUT-plant ACC tomato
?i? mama?].
   T uncle
   ‘You told me that Uncle is planting tomatoes.’

(4.100) a. *san-mi?* hiya? *mha*?, “uah !”
say.LT.NFUT¹²³-1S.NOM:T 3S.T LNK AT.IMP:come
   ‘I told him, “Come!”’

say.LT.NFUT-1S.NOM:T 3S.T LNK AT.FUT:come T aunt
   Intended: ‘I told him that Aunt would come.’

¹²² Paul Jen-kuei Li indicates that the prefix *man*- is not found in any other Atayal dialects. But the prefix *man*- is a commonly found in Bunun and Thao as an AT marker (personal communication, August 22, 2010). This prefix *man*- is treated as an AT marker in this study.

¹²³ The verb *san* ‘say’ is a portmanteau which consists of a verb stem ‘say’ and LT marking -an. Because the portmanteau cannot be dissected into two separate morphemes, I use the gloss ‘say.LT’ to mark the portmanteau *san*. In addition, the LT marking is indicative of non-future tense information.
The examples in (4.98)–(4.100) show that the utterance verbs $k<um>aal$ ‘say (AT)’ and $kal-un$ ‘say (PT)’ can select either a $mha?$-marked direct quote or a $ru?$-marked indirect quote, while $san$ ‘say (LT)’ can only select a $mha?$-marked direct quote of command.

The clause linker $mha?$ does not behave the same in the imperative complements and declarative complements. The linker $mha?$ for an imperative quote is obligatory, as in (4.101a) and (4.102a), but is optional for a declarative quote, as in (4.101b) and (4.102b).

say<AT.NFUT> ACC child T old.man LNK AT.IMP.catch
cu? βawak!”
ACC pig
‘The old man told the child, “Catch a pig!”’

b. $k<um>aal$ cku? ?ulaqi? ku? naβakis (mha?), “r<um>akaap
say<AT.NFUT> ACC child T old.man LNK catch<AT.NFUT>
cu? βawak ?i? watan”.
ACC pig T Watan
‘The old man told the child, “Watan is catching a pig.”’

say-PT.NFUT NOM old.man T child LNK catch-P/LT.IMP
ku? βawak!”
T pig
‘The old man told the child, “Catch a few of the pigs!”’

say-PT.NFUT NOM old.man T child LNK catch-PT.NFUT
ni? watan ku? βawak “.
NOM Watan T pig
‘The old man told the child, “Watan is catching the pig.”’

There is no trigger constraint in the direct-quote complements. $Mha?$-marked imperative quotes can be AT or NAT, as in (4.101a) and (4.102a), respectively. Note that the AT imperative forms, such as $rkaap$ in (4.101a), appear in their unmarked forms (that is, the stems of the verbs). As for the predicates of $mha?$-marked declarative quotes, they can also be AT or NAT, such as $r<um>kaap$ ‘catch (AT)’ in (4.101b) and $rkaap-un$ ‘catch (PT)’ in (4.102b).
No TAM constraint is found on mha?-marked direct quotes. Mha?-marked direct-quote complements are free in their selection of TAM. The examples in (4.103) show that the complements can be non-future, future, and present/past perfective.


Mha?-marked direct-quotes also occur with some complement-taking verbs, such as βaq-un ‘know (PT)’, as in (4.104), and l<um>aŋluŋ ‘think (AT)’, as in (4.105).


These cognition verbs can select a direct quote introduced by *mha* or a full complement clause by another clause linker, such as *cu* for *βaq-un* ‘know (PT)’ in (4.104b) and *ru* for *l<um>* *aqlug* ‘think (AT)’ in (4.105b).

In Mayrinax, a complement-taking verb normally is able to select a *mha*-marked clausal complement if it subcategorizes for a full complement clause. But some complement-taking verbs are exceptions, including *tal-an* ‘see (LT)’, *puj-an* ‘hear (LT)’, *asi₁* ‘seem’, *asi₂* ‘assume’, *ua* ‘hope (NAT)’, etc. Although these verbs subcategorize for a full complement clause, they cannot select a *mha*-marked complement clause, as (4.106) and (4.107) illustrate.

   see-LT.NFUT-2S.NOM LNK AT.NFUT.many T person
   ‘You see that there are many people.’
   (lit. ‘You see that people are many.’)

   see-LT.NFUT-1S.NOM LNK AT.NFUT.many T person
   Intended: ‘You see, “People are many”.’

   NAT.assume-1S.NOM LNK AT.FUT-go OBL here T uncle
   ‘I assume that Uncle will come here.’

   NAT.assume-1S.NOM LNK FUT.AT-go OBL here T uncle
   Intended: ‘I assume, “Uncle will come here.”’

It seems that the semantics of the verbs, such as *tal-an* ‘see (LT)’ in (4.107) and *asi₂* ‘assume’ in (4.108), make it hard to interpret their complements being a quote.

### 4.1.6.2 Identification

The clause linker *mha* has the same phonological realization as a verb of saying *mha* in Mayrinax. Like the utterance verb *san* ‘say (LT)’, the verb *mha* mostly occurs after the direct quote, as shown in (4.108). In informal speech, the verb *mha* is allowed to occur
before the direct quote as are other verbs of saying. However, in that case, the linker mha? is obligatory, as in (4.109).

   IT.NFUT-cut NOM mother ACC banana T sickle say 3s.T
   “Mother is cutting bananas with a sickle,” said he.

   IT.NFUT-cut NOM mother ACC banana T sickle say.LT.NFUT
   ni? yuma?.
   NOM Yuma’
   “Mother cut bananas with a sickle,” said Yuma’.

(4.109) mha?-cu *(mha?), “halay-ti? pakravluyax!”
   say-1S.T LNK let.go-1P.INCL.T:OBL Dahu
   “I said, “Let us go to Dahu.””.

Lillian Huang (1995a:229) observes that the occurrence of the clause linker mha? is similar to the Chinese word shuo ‘say’, as in (4.110).


    wo gaoshu ta shuo Zhangsan mingtian hui da Lisi.
    I tell he say Zhangsan tomorrow will beat Lisi
    ‘I told him that Zhangsan will beat Lisa tomorrow.’

Lillian Huang (1995a:229) indicates that “shuo seems redundant semantically” with the verb gaoshu ‘tell’. Based on this, she concludes that shuo ‘say’ in (4.110) behaves more like a clause linker rather than a verb. Accordingly, the clause linker mha? is analyzed as being “more like a linker or introducer” instead of a verb (Lillian Huang 1995a:230). But no further proof in her study can be found related to this statement. Based on the above information, there are two possibilities for the Mayrinax mha?: a verb and a complementizer.

Let us begin with examining if the clause linker mha? behaves like the homophonous verb of saying mha? in Mayrinax. If the linker mha? is a verbal element, the complex sentence with a mha?-marked direct quote is an SVC, not complementation. On the
contrary, *mha?* is not a verb if the relevant construction is not an SVC. At first glance, the *mha?*-marked complementation seems to behave like an SVC. First of all, the matrix argument seems to be the shared argument in the *mha?*-marked complementation.

\[(4.111)\]  
\[
\begin{array}{llllllllll}
 k<um>aal & ku? & naβakis & mha?, & “mi-taal & cu? & ruas & \\
& say<AT.NFUT> & T & old.man & LNK & AT.NFUT-read & ACC & book \\
& ku? & ?ulaqi?”. & \\
& T & child & \\
& “The old man said, “The child is reading a book.””
\end{array}
\]

The matrix argument *ku? naβakis* in (4.111) looks like the shared argument of the verbs *k<um>aal* ‘say (AT)’ and *mha?* if (4.111) is an SVC. Furthermore, there seems to be one set of TAM shared by *k<um>aal* ‘say (AT)’ and *mha?* in (4.111). The example in (4.111) can be analyzed as a type of SVC in which only the first verb of the verb-verb sequence is inflected for TAM. However, the *mha?*-marked complementation in question does not behave like an SVC in the following respects.

First, the verb-verb sequence in an SVC cannot be reduced to only one verb since the verbs in the verb-verb sequence constitute sub-parts of a single overall event (Aikhenvald 2006:10–12). Accordingly, it is expected that the dropping of a verb in the verb-verb sequence makes the meaning different from the original one with the verb-verb sequence. However, this clause linker *mha?* can be freely dropped without any change in meaning, as discussed in Section 4.1.6.1. The examples are repeated below:

\[(4.101)\]  
\[
\begin{array}{llllllllll}
& say<AT.NFUT> & ACC & child & T & old.man & LNK & catch<AT.NFUT> & \\
& cu? & βawaq & ?i? & Watan”. & (Repeated) & \\
& ACC & pig & T & Watan & \\
& “The old man told the child, “Watan is catching a pig.””
\end{array}
\]

\[(4.102)\]  
\[
\begin{array}{llllllllll}
& say-PT.NFUT & NOM & old.man & T & child & LNK & catch-PT.NFUT & \\
& ni? & Watan & ku? & βawak ”. & (Repeated) & \\
& NOM & Watan & T & pig & \\
& “The old man told the child, “Watan is catching the pig.””
\end{array}
\]
The optional *mha?* in cases like (4.101b) and (4.102b) suggests that the *mha?*-marked complementation is not an SVC.

Second, either of the verbs in an SVC can function as a verb on its own (Aikhenvald 2006:1). While *mha?* can be used as an independent verb, it is subject to several restrictions unlike the other verbal element in the complex sentence with the *mha?*-marked direct quote, such as *k<um>aal* ‘say (AT)’ in (4.112).

(4.112)  
\texttt{ACC pig T mother-3S.POSS}
‘The chief said, “The child is catching a pig for his mother.”’

The differences of the verbal properties between *mha?* ‘say’ and *kaal* ‘say’ are mainly in three respects. First, the verb *mha?* cannot be inflected for a full range of TAMs in an independent clause, as in (4.112). On the contrary, *k<um>aal* can take the full set of TAM, as in (4.113).

(4.113)  
a. *\texttt{pa-pha}/*\texttt{pa}-mha?/*\texttt{ma}-mha?/*\texttt{ma}-ha? -su?.*
\texttt{AT.FUT-say-2S.T}

b. *\texttt{m-<in>ha?-su}? [ mha? m-<in>uah-cu ].*
\texttt{AT.NFUT <PERF>say-2S.T LNK AT.NFUT-<PERF>come -1S.T}
‘You said that I have come (here) (before).’

(4.114)  
a. *\texttt{pa-kaaral-su}?.
\texttt{FUT.AT-say-2S.T}
‘You will say.

b. *\texttt{k<um>in>al-su}?.*
\texttt{say<AT.NFUT>PERF>-2S.T}
‘You have said.”
Third, the verbal usage of *mha*? in an independent clause is a sloppy usage and can only occur in some informal contexts. The formal expression for the *mha*? in (4.115) is *k<um>aal*, as in (4.116).

    say-1S.T
    ‘I say.’

    say-1S.T  2S.ACC
    ‘I say to you.’ (lit. ‘I tell you.’)

(4.116) a.  *k<um>aal*-cu.
    say<AT.NFUT>-1S.T
    ‘I say.’

   b.  *k<um>aal*-ci?  ?isu?.
    say<AT.NFUT>-1S.T  2S.ACC
    ‘I say to you.’ (lit. ‘I tell you.’)

Lastly, there is an AT-only trigger constraint on *mha*?. Though *mha*? is unmarked for any trigger marking, *mha*? behaves like an AT verb. When it is intransitive, it is only allowed to take a trigger actor, such as -cu in (4.116a) or -ci? in (4.116b). Unlike an NAT verb, *mha*? cannot select a nominative actor, such as -mu in (4.117a).

    say-1S.NOM  T  mother

   b.  kal-un-mu  ?i?  yaya?.
    say-PT.NFUT.1S.NOM  T  mother
    ‘I say to Mother.’ (lit. ‘I tell Mother.’)

In contrast, the verb stem *kaal* ‘say’ can be inflected as an AT *k<um>aal* in (4.116) and as a PT *kal-un* in (4.117b). These differences show that the verbal usage of *mha*? lacks some basic properties of a verb in Mayrinax. Thus, the complex sentence with a *mha*?-marked direct quote cannot be regarded as an instance of the full fledged SVC.
The above discussion shows that the structure of the mha?-marked complementation cannot be an SVC and the clause linker mha?, in turn, cannot be a verb. Thus, the clause linker mha? is better treated as a complementizer. In fact, the complementizer mha? may have its origin in the homophonous verb of saying mha?. Crosslinguistically, it is common for a verb of saying to be grammaticalized as a complementizer, such as Ewe\(^{124}\) (Lord 1974), Akkadian\(^ {125}\) (Deutscher 2000), Greek (Hopper&Traugott 2004), Mañe (Guerin 2008), etc. The deficiency of the verbal mha? suggests that the process of the grammaticalization is still in progress. Another phenomenon accompanied by the grammaticalization of the verb mha? into a complementizer also supports this point of view. Because of the semantic bleaching of the verb of saying mha? in the process of grammaticalization, a variety of verbs of saying, such as k<um>aal ‘say (AT)’, kal-un ‘say (PT)’, and san ‘say (LT)’, are used in the matrix clause to co-occur with the complementizer mha? (cf. Lord 1974 and Hopper&Traugott 2004).

4.1.7 Discussion

Mayrinax Atayal is, amazingly, in possession of many devices to connect a matrix clause and a complement clause. The Mayrinax clause linkers for a full complement clause are homophonous with a variety of syntactic categories: an accusative marker for common NPs (cu?), a coordinating conjunctions (cu?, ru?), a trigger/accusative marker for proper nouns (?i?), a preposition for temporal/locative NPs (cu?, ?i?), a subordinator for subjunctive clauses (?i?), a topic marker (ya?), a possessive marker (na?), a nominative/beneficiary/instrument marker for indefinite NPs (na?), a time adverb (na?), and a verb of saying (mha?). The homophony of these clause linkage markers suggests that some of these syntactic categories may have been the sources of the relevant clause linkers.

\(^{124}\) Ewe is a Niger-Congo language spoken in the southeast Ghana, east of the Volta River, southern Togo, and western Benin. The Ewe speakers are over five million people.

\(^{125}\) Akkadian (or Assyro-Babylonian) is an extinct Semitic language that was spoken in ancient Iraq.
The clause linker *cu?id* has the same phonological shape as several items in Mayrinax: an accusative marker for common NPs, a coordinating conjunction for VPs, a temporal particle for past-tense (or realis) time adverbs. The clause linker *cu?id* is most likely to have its origin in the accusative marker *cu?id*. Across Formosan languages, most of the clause linkers for a full complement clause are homophonous with an accusative marker, such as *dju* in Puyuma and *tu* in Bunun, Kavalan, and Paiwan. It is likely that these clause linkers are the result of reanalysis. The accusative marker *cu?id* has been reanalyzed as a complementizer *cu?id* for complementation with some cognition/perception verbs in Mayrinax. It is possible that the theme of cognition/perception verbs used to be a nominalized clause and hence marked by the accusative marker in AT constructions like other nouns. Later, the accusative marker *cu?id* was reanalyzed as a complementizer and the nominalized clause mark by *cu?id*, a clausal complement. Thereafter, the complementizer *cu?id* has lost the properties of the accusative marker *cu?id*.

The clause linker *ru?id* has the same phonological realization as a coordinating conjunction *ru?id*. The clause linker *ru?id* is not productive in the complementation with a full complement clause in Mayrinax Atayal. In my database, the verbs which select a *ru?id*-marked complement clause are limited to four verbs: one verb of propositional attitude *l<um>alu-jug/*luglug-un ‘think (AT/PT)’, one utterance verb *k<um>aal ‘say (AT)’, and two perception verbs (*mi-taal/*tal-an ‘see (AT/LT)’ and *m-uyj/puyj-an ‘hear (AT/LT)’). The perceptions verbs can select both *ru?id*-marked and *cu?id*-marked complement clauses, while the verb of propositional attitude and the utterance verb select only the *ru?id*-marked complements.

As discussed in Section 4.1.2.2, the clause linker *ru?id* exhibits the properties of both the coordinating conjunction and the complementizer. The mixed properties suggest that reanalysis is in progress. It can be hypothesized that the matrix clauses in the *ru?id*-marked complementation, such as *l<um>alu-jug ‘I think (AT)’, *k<um>aal-cu ‘I say (AT)’ and *tal-an-mu ‘I see (LT)’, used to be parenthetical disjuncts, a type of adverbial adjunct that
expresses information that is not considered to be a locus of the sentence, but rather the speaker’s attitude towards the propositional content of the sentence, such as *fortunately, honestly, to my surprise, in my opinion*. The mixed properties suggest that the bi-clausal disjunct construction has been undergoing reanalysis as a monoclausal complementation: the adverbial disjunct is reanalyzed as the matrix clause, the coordinating conjunction *ru?* as a complementizer, and the main clause as a clausal complement.

Furthermore, the interchangeability of *ru?* and *cu?* in the complement of perception verbs (i.e. *tal-an* ‘see (LT), *pun-an* ‘hear (LT)’) suggests that this reanalysis has been completed as far as these verbs are concerned and that, as a result, *ru?* is now being replaced by the productive complementizer *cu?*. Since such alternation is not permissible with ‘think’ and ‘say’, we may infer that the relevant reanalysis is still on-going with these verbs. This might be due to the semantic nature of these verbs: ‘think’ and ‘say’ are more likely to constitute a disjunct than ‘see’ and ‘hear’.

The source of the clause linker *?i?* is not clear. Although the clause linker *?i?* is homophonous with several items, such as a trigger/accusative marker for proper nouns, a preposition for temporal/locative NPs, and a subordinator for conditional clauses, it demonstrates no overlapping properities with any of the homophonous items. Crosslinguistically, the locative/temporal preposition is commonly found in some languages to mark a source/cause argument of psych-verbs. However, it is not applicable in Mayrinax since the source/cause argument of psych-verbs, such as *ma-?icur* ‘fear (AT)’ is not marked by the locative prepositional *?i?*. Instead, it is marked by an accusative marker *cu?*. Therefore, it is unlikely that the locative/temporal preposition was the source of the clause linker *?i?* of the second type. The origin of the clause linker *?i?* calls for further study.

Complementation with a *?a?-marked full clause occurs when the matrix verb *asi₁* ‘seem’ or *asi₂* ‘assume’. As introduced in Section 4.1.4, the clause linker *?a?* should be analyzed as a complementizer though it is homophonous with a topic marker. The homophony suggests that the clause linker *?a?* may have its origin in the topic marker
It is plausible that the \( \gamma \alpha \) -marked clauses led by \( as_i \)  ‘seem’ or \( as_i \)  ‘assume’ used to function as a disjunct, in a way similar to the matrix verbs of \( ru \) -marked complements, and were later reanalyzed as matrix clauses. Accordingly, the main clause (what followed \( \gamma \alpha \) ) was reanalyzed as a complement and \( \gamma \alpha \) as a complementizer. Note that in no other Formosan languages the topic marker is homophonous with a complementizer. This is a unique characteristic of Mayrinax Atayal.

So far as I know, only one verb \( u\alpha \)  ‘(I) hope’ requires its complement to be led by the clause linker \( n\alpha \). This clause linker \( n\alpha \) is homophonous with several categories: a possessive marker, a nominative/beneficiary/instrument marker for common NPs, and a progressive marker. However, there is no evidence to show a relationship between any of these homophonous categories and the clause linker \( n\alpha \). As discussed in Section 4.1.5.1, the complementizer \( n\alpha \) can be used with other verbs when the complement clauses denote a hypothetical or counter-factual proposition. Thus, the clause linker \( n\alpha \) is best analyzed as a complementizer for subjunctive clauses.

The clause linker \( m\alpha \) for direct quotes is a complementizer, while it has the same phonological shape with a verb of saying \( m\alpha \). Crosslinguistically, it is common for a verb of saying to be grammaticalized as a complementizer (Hopper and Traugott 2004). The examples can be seen in a number of different languages, including Ewe (Lord 1974), Akkadian (Deutscher 2000), Greek (Hopper & Traugott 2004), Mavėa (Guerin 2008), and others. Moreover, a verb of saying also occurs as a clause linker for direct quotes in other Formosan languages, such as \( m\delta a \)  ‘say’ in Thao. Thus, it is inferred that the verb \( m\alpha \) must have come to function as a complementizer.

Based on the discussion above, the identification of the clause linkers for the full complement clauses is summarized in the table below:
Table 4.1. Properties of the clause linkers for full complement clauses in Mayrinax Atayal.

<table>
<thead>
<tr>
<th>Type</th>
<th>Complement-taking verb</th>
<th>Homophonomous/ Possible Source</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>cu?</em>-marked complementation</td>
<td>Cognition verbs:</td>
<td></td>
<td><em>cu?</em> is a complementizer.</td>
</tr>
<tr>
<td></td>
<td><em>snu-a</em> ‘believe (PT)’</td>
<td></td>
<td>The accusative marker <em>cu?</em> is reanalyzed as a complementizer.</td>
</tr>
<tr>
<td></td>
<td><em>baq-a</em> ‘know (PT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>?&lt;um&gt;</em> ‘forget (AT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>?ug-1-an</em> ‘forget (LT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceprion verbs:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>mi-taal</em> ‘see (AT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>tal-an</em> ‘see (LT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>m-ug</em> ‘hear (AT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>pug-an</em> ‘hear (LT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*ru?-marked complementation</td>
<td>Clause linker <em>ru?:</em></td>
<td></td>
<td><em>ru?</em> carries mixed properties of a coordinating conjunction and a complementizer. The coordinating conjunction <em>ru?</em> is being reanalyzed as a complementizer.</td>
</tr>
<tr>
<td></td>
<td><em>&lt;um&gt;</em> ‘think (AT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>lu-lu</em> ‘think (PT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>&lt;sum&gt;</em> ‘say (AT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>kal-an</em> ‘say (PT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clause linkers <em>ru?/cu?:</em></td>
<td></td>
<td></td>
<td><em>ru?</em> is being replaced with <em>cu?</em>.</td>
</tr>
<tr>
<td></td>
<td><em>mi-taal</em> ‘see (AT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>tal-an</em> ‘see (LT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>m-ug</em> ‘hear (AT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>pug-an</em> ‘hear (LT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*?i?-marked complementation</td>
<td>Type 1: (also verbs for *cu?-marked complementation)</td>
<td>trigger/accusative marker for proper nouns, preposition for temporal/locative NPs, and subordinator for conditional clauses</td>
<td><em>?i?</em> is an emphatic marker when it substitutes for the clause linker <em>cu?</em>.</td>
</tr>
<tr>
<td></td>
<td><em>tal-an</em> ‘see (LT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>?ugi-1-an</em> ‘forget (LT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 2:</td>
<td><em>&lt;um&gt;</em> ‘agree (AT)’</td>
<td></td>
<td><em>?i?</em> is a complementizer.</td>
</tr>
<tr>
<td></td>
<td><em>sival-an</em> ‘agree (AT)’</td>
<td></td>
<td>However, the origin of the clause linker <em>?i?</em> is not clear.</td>
</tr>
<tr>
<td></td>
<td><em>ma-?icur</em> ‘fear (AT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>ki-?icur-un</em> ‘fear (PT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*ra?-marked complementation</td>
<td><em>as-i</em> ‘seem’</td>
<td>topic marker</td>
<td><em>ra?</em> is a complementizer.</td>
</tr>
<tr>
<td></td>
<td><em>as-i</em> ‘assume’</td>
<td></td>
<td>The topic marker <em>ra?</em> may be reanalyzed as a complementizer.</td>
</tr>
<tr>
<td>*na?-marked complementation</td>
<td><em>na?</em> ‘hope’</td>
<td>subjunctive marker, possessive marker, nominative/beneficiary /instrument marker for indefinite NPs, and adverb.</td>
<td><em>na?</em> is a complementizer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The subjunctive marker <em>na?</em> occupies the clause linker position and functions as a complementizer.</td>
</tr>
<tr>
<td><em>ma?</em>-marked complementation</td>
<td><em>&lt;um&gt;</em> ‘say (AT)’</td>
<td>verb of ‘saying’</td>
<td><em>ma?</em> is a complementizer.</td>
</tr>
<tr>
<td></td>
<td><em>kal-an</em> ‘say (PT)’</td>
<td></td>
<td>The complementizer is reanalyzed as a verb of saying.</td>
</tr>
<tr>
<td></td>
<td><em>san</em> ‘say (LT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>baq-an</em> ‘know (PT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>?ugi-1-an</em> ‘forget (LT)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>&lt;um&gt;</em> ‘think (AT)’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.2 Defective embedded clauses

A defective embedded clauses involving complementation refers to the complement clause which has a missing argument coreferential with an argument of the matrix clause. In the literature of generative syntax, defective embedded clauses involving complementation are divided into two separate constructions, control and raising, as introduced in Section 1.5. In Mayrinax, the defective complement clauses also can be divided into control and apparent raising. The control constructions can be further divided into “actor control” and “patient control” depending on whether the complement null argument is controlled by the matrix actor or patient. As for the apparent raising construction, a trigger argument appears to have moved out of the complement clause to the matrix trigger position when the matrix clause lacks an overt trigger NP. However, it turns out that the relevant movement is not an instance of raising as defined in the generative framework. Thus, it is called apparent raising-to-trigger (“RtoT”) construction. Mayrinax also exhibits clitic climbing, in which a bound personal pronoun (that is, clitic) moves out of the complement clause and attaches to the matrix predicate. However, clitic climbing should not be confused with the apparent “RtoT” although only trigger bound personal persons can undergo this movement. The control constructions (including actor control and patient control) will be discussed in Section 4.2.1 and the apparent raising constructions (including clitic climbing) in Section 4.2.2.

4.2.1 Control constructions

The Mayrinax control constructions can be divided into two types: actor control and patient control. In Mayrinax, the references of the missing arguments of the complement clauses are controlled by the matrix actor or matrix patient when the matrix predicates are control verbs, such as the actor control verb m-naʔalij ‘try (AT)’ in (4.118a) and the patient control verb siwal-an ‘persuade (PT)’ in (4.118b).

(4.118) a. Actor control:

\[
\begin{array}{llllllllll}
\text{m-naʔalij} & \text{ku?} & \text{?ulaqiʔi} & \text{ʔiʔ} & [ & \text{k<um>ikuʔ} & \text{cuʔ} & \text{ucya} & \text{Δi} & ]. \\
\text{AT.NFUT-start} & \text{T} & \text{child} & \text{LNK} & \text{pick<AT>} & \text{ACC} & \text{tea}
\end{array}
\]

‘The child starts to pick tea (leaves).’
4.2.1.1 Actor control construction

In this study, actor control construction refers to the construction in which the actor of the matrix clause controls the reference of the missing trigger argument in the complement clause. In the Mayrinax actor control, the matrix clause is followed by a defective complement clause with a missing trigger argument, with a linker \( \Delta \) intervening between the matrix and complement clauses. The actor control verbs include a wide range of verb types. Among them, achievement verbs constitute the majority, including \textit{ma-kiβaq} ‘learn (AT)’, \textit{t<um>alam} ‘try (AT)’, \textit{m-usa}i ‘go (AT)’, \textit{m-uah} ‘come (AT)’, \textit{?<um>uji}i ‘forget (AT)’, and \textit{?uji}-an ‘forget (LT)’. Also included are phasal verbs which refer to phasal predicates (e.g., \textit{man-?aliβaj} ‘begin (AT)’ and \textit{ma-naqru} ‘finish (AT)’), modal verbs (e.g., \textit{βaq} ‘can (AT)’), and commentative verbs (e.g., \textit{s<um>iua}i ‘like (AT)’, \textit{s?ua}-an ‘like (LT)’, and \textit{ma-sical} ‘be shy (AT)’).

The reference of the missing argument in the embedded clause is controlled by the matrix actor, as (4.119a) illustrates. The linker \( \Delta \) is obligatory and cannot be replaced with any other linker, as in (4.119b).

\[
\begin{align*}
(4.119) \quad a. \quad \textit{ma-kiβaq} & \quad ?\text{ikuij}_i \quad *(?\text{i}?) \quad [ \quad \text{m-aquas} & \quad \Delta_i \quad ]. \\
& \quad \text{AT.NFUT-learn} \quad 1S.T \quad \text{LNK} \quad \text{AT-sing} \\
& \quad \text{I learn to sing.} \\

b. \quad *\textit{ma-kiβaq} & \quad ?\text{ikuij}_i \quad \text{cu/?ru/?xa/?na/?mha?} \quad [ \quad \text{m-aquas} & \quad \Delta_i \quad ]. \\
& \quad \text{AT.NFUT-learn} \quad 1S.T \quad \text{LNK} \quad \text{AT-sing}
\end{align*}
\]
Actor control sentences like (4.119a) have been analyzed as a serial verb construction (abbreviated as SVC) by Lillian Huang (1995a). Lillian Huang (1995a:190–2) treats the actor control construction as an SVC based on two reasons. First, the clause linker ʔiʔ between the two verbs in the actor control construction is optional and tends to be omitted in fast speech. In addition, the linker ʔiʔ does not occur in the actor control construction of other Atayal dialects, such as Wulai Atayal. Second, the two verbs are used to indicate consecutive or simultaneous actions done by the same actor. However, the SVC analysis is inappropriate to account for the Mayrinax data. First, the clause linker ʔiʔ in the actor control construction is obligatory in Mayrinax Atayal, as shown in (4.120)–(4.121). The linker ʔiʔ is not optional no matter whether it stands alone as in (4.120) and (4.121a) or it is fused with the preceding bound personal pronoun like ciʔ in (4.121b). The presence of the clause linker ʔiʔ signals a clausal boundary between two verbs, which does not fit the monoclausal property of SVC (cf. Aikhenvald 2006:6–7).

(4.120) maʔusaʔ ʔiʔ yataʔi ˈʔiʔ ˈʔiʔ [ m-aquas Δi ].
AT.FUT-go T aunt LNK AT-sing
‘Aunt will go to sing.’

(4.121) a. maʔusaʔ-cuʔi ˈʔiʔ ˈʔiʔ [ m-aquas Δi ].
AT.FUT-go-1S.T LNK AT-sing
‘I will go to sing.’
b. maʔusaʔ-ciʔi [ m-aquas Δi ].
AT.FUT-go-1S.T:LINK AT-sing
‘I will go to sing.’

Second, unlike SVC, the Mayrinax actor control construction may have two negation scopes.

(4.122) t<um>alam-ciʔi [ m-umuaʔ cuʔ βawluʔ Δi ].
try<AT.NFUT>-1S.T:LINK AT-plant ACC string.bean
‘I try to plant string beans.’

Yeh & Huang’s (2009) study on Squliq Atayal also shows that there is no linker and treats such construction as an SVC.
Either of the verbs in the actor control in (4.122) can be negated, as in (4.123). The two negation scopes suggest that the Mayrinax actor control construction is better analyzed as a bi-clausal construction, not a monoclausal SVC.

Third, the two verbs in the Mayrinax actor control do not have an idiomatic reading or a collocation restriction. This behavior is distinct from the verbs of SVC. Generally, the verbs in an SVC tend to form an idiomatic reading or a collocation because the verbs constitute sub-parts of a single event in SVC.

The actor control analysis can better account for these and other syntactic properties of the relevant construction. First, the fact that the coreferential argument (that is, the controlee) must be empty is expected in a control construction (see Section 1.5). The embedded empty category cannot be recovered by a coreferential pronoun, such as -cu in (4.124b) and -iku in (4.124c).

The unrecoverability of the embedded coreferential empty category, as illustrated in (4.124), suggests that the empty category of the controlee indicated by “Δ”, as in (4.124a), behaves like a PRO in the actor control. In addition, the controlee is restricted to the
embedded trigger position, which corresponds to an embedded subject position of PRO in languages like English.

Moreover, contrary to Lillian Huang’s (1995a) observation, the empty category in the actor control construction in Mayrinax need not be an actor as long as it is a trigger argument of the complement clause. The controlees can be an actor, as in (4.125a), or a patient, as in (4.125b).


The relationships of the the controllers and controlees in the actor control are entabulated in Table 4.2.

<table>
<thead>
<tr>
<th>Matrix predicate</th>
<th>Complement predicate</th>
<th>Controller (overt NP)</th>
<th>Controlee (empty NP)</th>
<th>Grammaticality</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>AT</td>
<td>trigger (actor)</td>
<td>trigger (actor)</td>
<td>grammatical</td>
<td>(4.125a)</td>
</tr>
<tr>
<td>AT</td>
<td>NAT</td>
<td>trigger (actor)</td>
<td>trigger (patient)</td>
<td>grammatical</td>
<td>(4.125b)</td>
</tr>
<tr>
<td>NAT</td>
<td>AT</td>
<td>nominative (actor)</td>
<td>trigger (actor)</td>
<td>ungrammatical</td>
<td>(4.126a)</td>
</tr>
<tr>
<td>NAT</td>
<td>NAT</td>
<td>nominative (actor)</td>
<td>trigger (patient)</td>
<td>ungrammatical</td>
<td>(4.126b)</td>
</tr>
</tbody>
</table>

Table 4.2 shows that the empty category must occupy the embedded trigger position of Mayrinax actor control. In addition, the controller in the matrix clause also needs to be a trigger.  

If not, the sentence is ill-formed, as shown in (4.126a) and (4.126b). This

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127 As will be discussed in Section 4.2.2, the controller can be a nominative when an embedded patient is moved into the trigger positon in the matrix clause or outside the matrix clause (that is, in the sentence-final
trigger constraint is reminiscent of the subject-only constraint on the null argument of a control construction in other languages, such as English.

Second, compared to the full complement clauses which take the full range of TAMs, the complement clauses of the actor control construction can only have limited TAMs in Mayrinax Atayal. The complement predicate of an actor control construction cannot take a specific tense/aspectual morpheme, such as the past (or perfective) tense infix <in> or future tense prefix pa-. It can only be unmarked for tense, thus showing only being inflected for trigger marking: AT markers ma-/lm-/Ø, PT -un, LT -an, and B/IT si-.

For example:

    AT.NFUT-begin T uncle LNK AT-cultivate ACC field
    ‘Uncle begins to cultivate a field.’

    AT.NFUT-begin T uncle LNK FUT.AT-cultivate ACC field

    AT.NFUT-begin T uncle LNK AT<PERF>cultivate ACC field

    AT.NFUT-begin T uncle LNK cultivate ACC field

    AT.NFUT-finish T uncle LNK AT-sing ACC field
    ‘Uncle finishes singing.’

    AT.NFUT-finish T uncle LNK AT-sing ACC field

    AT.NFUT-finish T uncle LNK AT<PERF>sing ACC field

---

(position). This movement is to fulfill the requirement that there should be one and only one trigger NP for the whole clause of control constructions. For example, the example (4.126a) can be grammatical when the embedded patient kui? ?ulaqi? is moved to the matrix clause or outside the matrix clause, as shown in (4.ii).

(4.ii) a. sʔuaʔ-an nkuʔ naʔakis, kuʔ ?ulaqiʔ, ?iʔ [ ma-lahaŋ ʔiŋji T Δi ].
    like-LT.NFUT NOM old.man T child LNK AT-take.care.of
    ‘That old man likes to take care of this child.’

    like-LT.NFUT NOM old.man LNK AT-take.care.of T child
    ‘That old man likes to take care of this child.’
We have seen in Section 2.2.2 that the main verbs that are unmarked for TAM are interpreted as (progressive) present tense. But the embedded verbs unmarked for TAM in the actor control are not interpreted as present (progressive) tense.

Morphologically, the embedded verbs have the same phonological shapes as the present (progressive). However, the semantics of these defective complement clauses behave like non-finite clauses in that they can be interpreted as an unrealized proposition, as in (4.128a), or a back-grounded event, as in (4.128a). In any case, the embedded clause of the actor control construction is defective in that it cannot take any specific TAM morphology. Crosslinguistically, it is also known that some languages allow control to have complement clauses with defective tense (e.g., subjunctive) rather than infinitive, such as Albanian (Landau 2004), Hebrew (Landau 2004), Japanese (Uchibori 2000), and Persian (Hashemipour 1989 and Ghomeshi 2001).

There are some structural variations in the Mayrinax actor control. The actor controller can be located in the final position of the matrix clause, as in (4.129a), or in the sentence-final position, as in (4.129b).

   AT.NFUT-begin T man LNK AT-read ACC book
   ‘The man begins to read a book.’

   b. [ man-ʔalinya ʔiʔ [ mi-taal cuʔ ruasΔi ]] ku? mamaliku.
   AT.NFUT-begin LNK AT-read ACC book T man
   ‘The young man begins to read a book.’

Note that the sentence-final actor controller, such as ku? mamaliku in (4.129b), occurs neither in the embedded trigger position nor in the matrix trigger position. This can be proven by replacing a cross-referenced actor with a bound personal pronoun.

(4.130) a. man-ʔalinya-ciʔ [ ma-tawau Δi ].
   AT.NFUT-begin-1S.T:LNK AT-work
   ‘I begin to work.’
b.*man-ʔaliŋay Δʔiʔ [ ma-tawau-cu ]. 
AT.NFUT-begin LNK AT-work-IS.T 

The sentence (4.130a) shows that the controller -ciʔ occurs in the matrix clause. Note that the -ciʔ is a portmanteau in which a first person bound pronoun -cu and a clause linker ?iʔ are realized as a single morpheme -ciʔ. On the contrary, the controller -cu is not allowed to attach to the embedded verb, as in (4.130b). Accordingly, the sentence-final trigger NP in the actor control, such as kuʔ mamaliku in (4.129b), should be outside the embedded clause. Furthermore, the sentence-final position can be occupied by a sentential adverb, such as ?iʔ kisaʔ ‘today’ in (4.131).

(4.131)   [ man-ʔaliŋay kuʔ mamaliku, ?iʔ [ mi-taal 
AT.NFUT-begin T man LNK AT-read 
ACC book OBL today ‘The man began to read a book today.’

In (4.131), the time adverb ?iʔ kisaʔ is adjoined to the whole sentence. This suggests that the sentence-final position is for a sentential element outside the matrix clause.

4.2.1.2 Patient control construction

In patient control, the matrix patient controls the reference of the missing trigger argument in the complement clause. There is a linker ?iʔ between the matrix clause and defective complement clause in Mayrinax Atayal. Crosslinguistically, the patient control verbs are mostly manipulative verbs. Mayrinax Atayal is no exception. The patient control verbs include: pakasʔusʔu-un ‘persuade (PT)’, siwal-an ‘allow (LT)’\(^\text{128}\), paturuʔ-an ‘ask (LT)’, si-paturuʔ ‘ask (BT), psiβaq-un ‘teach (PT)’, qihul-un ‘force (PT)’, maʔicur ‘fear (AT)’, kiʔicur-un ‘fear (PT)’, etc.

\(^{128}\) The AT and LT forms of the verb siwal have different argument structures. The AT s<um>iwal ‘agree (AT)’ selects a full complement clause, while the LT siwal-an ‘allow (LT)’ occurs in a patient control construction. The same distinction is also found in other verbs, such as βaq ‘can (AT)’/ βaq-un ‘know (PT)’.
In (4.132a) the patient ku? ?ulaqi? of the first event controls the reference of the missing argument of the second event ?i? mi-taal cu? katiŋ. The example (4.132b) shows that the embedded null argument in (4.132a) cannot be replaced with a coreferential NP.

In addition to the ?i?-marked defective complements, the manipulative verbs are commonly followed by a direct quote led by mha? in Mayrinax (Lillian Huang 1995a:232–233).

A manipulative verb psiβaq-an ‘teach (LT)’, for example, subcategorizes either for a ?i?-marked complement clause, as in (4.133a), or for an imperative quote, as in (4.133b).

Lillian Huang (1995a) treats this construction like (4.132a) and (4.133a) as a pivotal construction in line with the functionalists’ account. According to Li & Thompson (1981:607), “the defining characteristic of the pivotal construction is that it contains a noun phrase that is simultaneously the subject of the second verb and the direct object of the first verb”. Lillian Huang (1995a) modifies the above definition of the traditionally
viewed pivotal construction to account for the Mayrinax pivotal construction. By her
definition, Mayrinax pivotal construction semantically contains an argument which is
simultaneously the patient of the first event and the actor of the second event (Lillian
Huang 1995a:197).

Note that the so-called “pivotal construction” is treated as a type of SVC by other
linguists, including functional grammarians, such as Li & Thompson (1981). However,
Lillian Huang (1995a) treats pivotal construction as a bi-clausal construction, which is
distinct from SVC. Lillian Huang (1995a:197) indicates that “Different from the above-
mentioned serial verb construction, which expressed consecutive or simultaneous event
done by the same actor, the pivotal construction investigated here is a complex structure
with two verbs, each of which has its own actor agreement”. That is, SVC and pivotal
construction are treated as two separate constructions in Lillian Huang’s (1995a) analysis.
Obviously, the term “pivotal construction” is a problematic term for the construction
examined here though the pivotal analysis is not against the patient control analysis
proposed here in that both argue that the relevant construction is bi-clausal and involves a
shared argument (a coreferential empty category). The major differences lie in the
terminology and theoretical assumptions developed in functional grammar and generative
syntax, respectively. For example, the patient of the first clause and the actor of the
second clause are considered to be a single argument with two functions (i.e., pivot) in
functional grammar. Meanwhile, the two participants are treated as two separate
arguments—an overt NP (patient controller) and an empty NP (controlee)—in the
Chomskyan approach.

Crucially, the patient control should not be mistaken for an instance of SVCs though
the surface strings are similar to switch-function SVC (cf. Aikhenvald&Dixon 2006).
The structure of the switch-function SVC can be schematized as NP1 V1 NP2 V2 (NP3),
in which NP2 serves as the object of V1 and the subject of V2 simultaneously. However,
the Mayrinax construction in question cannot be treated as a type of SVC since there is a

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129 Li & Thompson (1981:594–622) divide SVC into four groups based on the semantic relationships
conveyed by the juxtaposed verbs: (i) two or more separate events; (ii) one verb phrase or clause serving as
the subject or direct object or another verb; (iii) pivotal construction; and (iv) descriptive clauses.

130 This is essentially what Li&Thompson (1981) call pivotal construction. It is also known by different
names, such as core layer serialization (see Foley&Olson 1985 and Crowly 2002).
linker ʔiʔ intervening between the two verbs. Such a linker that indicates the relationship of the two verbs is not allowed.

As discussed above, neither Lillian Huang’s pivotal construction analysis nor the SVC analysis is free from problems. The patient control analysis proposed in this study can better account for the Mayrinax ʔiʔ-marked defective complement clauses, as evidenced in the following respects. First, the existence of the clause linker ʔiʔ which signals an embedded complement clause is expected in the control construction. Second, the obligatory gap is also expected in control constructions. That this gap cannot be replaced by a pronoun suggests that the empty category of this construction behaves like a PRO. Third, unlike the matrix predicates, the embedded verbs in the patient control construction cannot select a full range of TAMs. For example:

force-PT.NFUT NOM father T old.man LNK AT-cultivate
 cu? claq Δ],
   ACC field
   ‘Father forces the old man to cultivate the field.’

force-PT.NFUT NOM father T old.man LNK AT.FUT-cultivate
 cu? claq Δ],
   ACC field

force-PT.NFUT NOM father T old.man LNK AT<PERF>cultivate
 cu? claq Δ],
   ACC field

force-PT.NFUT NOM father T old.man LNK cultivate ACC field

In (4.134), the complement verbs of patient control can be inflected for a trigger marker unmarked for other TAM, such as the AT prefix m- in m-umua? ‘cultivate (AT)’ in (4.134a), or for a future tense marker (carrying an implied trigger marking), such as pa- in pa-pumua? ‘cultivate (AT.FUT)’ in (4.134b). Such limitation on TAM selection is also expected in control constructions.
The sentences in (4.134) show that the embedded verbs of patient control are inflected for trigger marking like the embedded verbs of actor control. However, as in actor control constructions, the embedded verb affixed with a trigger marker, but unmarked for TAM, like *m-umua? in (4.134a), does not express present/past tense. However, it has the identical form with the present/past tense correspondence of an independent clause. It should be noted that the untensed bare verbs, such as *pumua? in (4.136d), cannot occur in the patient control complements. Unlike the actor control, however, the patient control complement can be inflected for future tense. This complement TAM difference between the actor control and patient control seems to correspond to the semantic difference between the two control constructions as well. The complements of patient control are restricted to hypothetical or counterfactual propositions, while the ones of actor control can be hypothetical propositions that may or may not be realized in the future (cf. Section 4.2.1.1).

Given that the complements of patient control can be only inflected with a trigger marker (identical with a present tense) and future tense, the complements of patient control construction are not infinitive. The embedded clauses of Mayrinax patient control construction are, still, defective since they are not free in their TAM selection. Crosslinguistically, some languages allow their control constructions to have defective complement clauses other than infinitives, such as subjunctives attested in Albanian (Landau 2004), Hebrew (Landau 2004), Japanese (Uchibori 2000), and Persian (Hashemipour 1989 and Ghomeshi 2001).

There is an AT-only constraint on the defective complement clauses of the patient control in Mayrinax. The embedded verb in the patient control is obligatorily AT-marked; that is, the controlee must be a trigger actor. If not, the sentence is ill-formed, as shown in (4.135b) and (4.136b).

    AT.NFUT-fear-1S.T ACC bee LNK sting<AT> ACC person
    ‘I fear that a bee might/will sting a person.’

    AT.NFUT-fear-1S.T ACC bee LNK sting-PT T person
The controllers and controlees in patient control constructions along with their grammaticality are shown in Table 4.3.

Table 4.3. Markings of coreferential NPs in Mayrinax Atayal patient control.

<table>
<thead>
<tr>
<th>Matrix predicate</th>
<th>Complement predicate</th>
<th>Controller (overt NP/patient)</th>
<th>Controlee (empty NP/actor)</th>
<th>Grammaticality</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>AT</td>
<td>accusative (patient)</td>
<td>trigger</td>
<td>grammatical</td>
<td>(4.135a)</td>
</tr>
<tr>
<td>PT</td>
<td>AT</td>
<td>trigger (patient)</td>
<td>trigger</td>
<td>grammatical</td>
<td>(4.136a)</td>
</tr>
<tr>
<td>AT</td>
<td>PT</td>
<td>accusative (patient)</td>
<td>nominative</td>
<td>ungrammatical</td>
<td>(4.135b)</td>
</tr>
<tr>
<td>PT</td>
<td>PT</td>
<td>trigger (patient)</td>
<td>nominative</td>
<td>ungrammatical</td>
<td>(4.136b)</td>
</tr>
</tbody>
</table>

Table 4.3 shows that the complement predicates of the Mayrinax patient control need be AT-marked. In contrast, the matrix predicates do not have to follow the AT-only constraint. They can be either AT-marked in (4.135a) or PT-marked in (4.136a). And the controller can be accusative (i.e., cu? βwayiq in (4.135a)) or trigger (i.e., ku? βwayiq in (4.136a)), as long as it is a patient.

Another constraint on the Mayrinax patient control is that the empty category must be an actor. The controlee cannot be a patient even if it is a trigger NP of an NAT embedded verb, as illustrated in (4.137b).

(4.137)  a. Actor controlee:

force-PT.NFUT NOM mother T child LNK kiss<AT>
cku? cuquliq Δi ].

ACC person
Mother forces the child to kiss the person.'
b. Patient controlee:


NOM person

Intended: ‘Mother forces the child to be kissed by the person.’

There are some structural variations in the patient control. Like the actor control, the trigger NP of the matrix clause is also allowed to occur in the sentence-final position.


OBL Dahu

‘Mother forces the man to go to Dahu.’


force-PT.NFUT NOM mother LNK AT-go OBL Dahu

ku? mamliku?.

T man

‘Mother forces the man to go to Dahu.’


OBL Dahu

‘Mother forces the man to go to Dahu.’


ku? mamliku?.

OBL Dahu T man

The trigger NP ku? mamliku ‘that man (T)’ can occur right next to the matrix nominative NP, as in (4.138a), or in the sentence-final position, as in (4.138b). The sentence-final trigger NP ku? mamliku in (4.138b), structurally, does not belong to the embedded clause since ku? mamliku is not allowed to occur right after the embedded verb musa? ‘go (AT)’ as shown in (4.138c).
Further support for this is the fact that the controller *ku? mamaliku* cannot attach to the embedded verb when it is a bound trigger personal pronoun, such as *su?* ‘you’ in (4.139).\(^{131}\)

\[(4.139)\]  
\[\begin{array}{ll}
\text{a. qihl-un-}\text{-su?} & \ni? \text{ yaya} \? \ ?i? \ [ \text{m-usa? \ ?i? \ pakravyiax } \Delta_i ] \\
\text{force-PT.NFUT-2S.T} & \text{NOM mother LNK AT-go OBL Dahu}
\end{array}\]

‘Mother forces you to go to Dahu.’

\[\begin{array}{ll}
\text{b. *qihl-un} & \ni? \text{ yaya} \? \ ?i? \ [ \text{m-usa?-}\text{-su?} \ ?i? \ Pakravyiax } \Delta_i ] \\
\text{force-PT.NFUT} & \text{NOM mother LNK AT-go-2S.T OBL Dahu}
\end{array}\]

In (4.139b) the bound personal pronoun *-su?* cannot be attached to the embedded clause but only to the matrix clause. This proves that the sentence-final trigger NP of patient control, such as *ku? mamaliku* in (4.138b), does not occur in the embedded clause. The position of the sentence-final controller needs to be analyzed as occupying a position outside the matrix clause. Note that the matrix agent of the patient control can also optionally appear in a position outside the matrix clause when the matrix trigger NP is postponed to the sentence-final position, as illustrated in (4.140) below.

\[(4.140)\]  
\[\begin{array}{ll}
\text{qihl-un} & \ni? \text{ yaya} \? \j \ku? \text{ mamaliku} \?i. \\
\text{force-PT.NFUT} & \text{NOM mother T man}
\end{array}\]

‘Mother forces the man to go to Dahu.’

In (4.140), the matrix actor *ni? yaya?* ‘mother (NOM)’ together with the matrix trigger NP *ku? mamaliku* is postponed to the sentence-final position.\(^{132}\)

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\(^{131}\) Clitic climbing is not required in Mayrinax Atayal. Therefore, the embedded personal pronoun can either remain in situ or move to attach a host in the matrix clause. For details of Mayrinax clitic climbing, please refer to Section 4.2.2.

\(^{132}\) The surface order of (4.140) is rather like that of an SVC in that the two predicates are next to each other with the argument NPs postposed. However, (4.140) cannot be treated as an instance of SVC since the two verbs are intervened by a clause linker *?i?*, which indicates a grammatical relation of subordination. Nevertheless, it is possible that the example (4.140) represents the transitional stage of an on-going reanalysis of patient control construction as SVC in Mayrinax Atayal.
Lastly, the postposed trigger NP in the patient control is not confined to the controller. As long as it is a matrix trigger, it is allowed to be postposed in the sentence-final position, as illustrated in (4.141).

\[ (4.141) \]
\[ a. \text{ma-} differing\text{-}cu\text{-}una}\text{ku\text{-}n}\text{a}\text{Ta}\text{ki}\text{is} \text{?i}\text{hi} \text{[r<um>akaap AT.NFUT-fe}ar ACC child T old.man LNK catch<AT> cu? bawak T i].} \]
\[ \text{ACC pig} \]
\[ 'The old man fears that the child may/will catch a pig.' \]
\[ \text{b. ma-} differing\text{-}cu\text{-}una}\text{ku\text{-}n}\text{a}\text{Ta}\text{ki}\text{is} \text{?i}\text{hi} \text{[r<um>akaap cu? bawak T i] ku\text{-}n}\text{a}\text{Ta}\text{ki}\text{is.} \text{AT.NFUT-fe}ar ACC child LNK catch<AT> ACC pig T old.man \]
\[ 'The old man fears that the child may/will catch a pig.' \]

\[ 4.2.2 \text{ Raising constructions} \]

This section introduces three types of complementation constructions that appear to involve “raising”: “raising-to-trigger” (“RtoT”), raising in actor control construction, and clitic climbing. However, a construction with a seemingly “raised” argument is not necessarily an instance of raising as defined in the Generative Grammar. As introduced in Section 1.5, raising is obligatory movement of an argument that semantically belongs to the subordinate clause to the matrix clause. This study shows that “RtoT” construction and clitic climbing in Mayrinax do not involve raising in the Generative Grammar. Only raising in the actor control construction should be considered an instance of raising.

\[ 4.2.2.1 \text{ “Raising-to-trigger”} \]

Lillian Huang (1995a:220–221) mentions a “raising” phenomenon, in which an argument of the complement clause appears in the matrix trigger position, as illustrated in (4.142).

\[ (4.142) \]
\[ a. \text{With a “raised” trigger NP: (Lillian Huang 1995a:220–221; glosses mine)} \]
\[ \text{\betaa}\text{q-}\text{un-}\text{mu ku\text{-}una}\text{ku? \text{?ula}\text{qi}\text{hi}? cu? [yakaat ma-\text{?u}\text{a}h T i].} \text{yakaat ma-\text{?u}\text{a}h \text{\Delta i}} \]
\[ \text{know-PT.NFUT-1S.NOM T child LNK NEG AT.FUT-go } \text{?i? casan}. \text{OBL tomorrow} \]
\[ 'I know that the child will not come tomorrow.' \]
b. Without a “raised” trigger NP: (Lillian Huang 1995a: 221; glosses mine)

\[
\]

OBL tomorrow

‘I know that the child will not come tomorrow.’

In (4.142a), the trigger NP ku? ?ulaqi? that semantically belongs to the complement clause is realized syntactically as a trigger NP in a higher clause. Lillian Huang (1995a) does not provide further discussion on raisin in Mayrinax Atayal, however. In order to facilitate our discussion, the phenomenon which involves a “raised” trigger argument like (4.142) will henceforth be referred to as “raising-to-trigger” (“RtoT”).

As seen in (4.142), “RtoT” applies optionally to the trigger NP of the cu?-marked full complement clause when the matrix clause lacks an overt trigger NP.\(^{133}\) There are three important facts related to the “RtoT” in the cu?-marked complementation. First, the “RtoT” in the cu?-marked complementation is optional since an “RtoT” sentence and its non-“RtoT” counterpart are both grammatical, as in (4.143).

---

\(^{133}\) “RtoT” seems to be also found in the complementation with a full complement clause led by the clause linker ru?. However, such “raising” in the ru?-marked complementation is, in fact, not raising. Consider:


T person LIG this ASP ‘This old man thinks that this person gets drunk.’

b. luulu- -un nku? naβakis ka hani ku? cuquliq ka yani, ru?, think-PT.NFUT NOM old.man LIG this T person LIG this LNK ma-βusuk pro, la ].

AT.NFUT-get.drunk ASP ‘This old man thinks of this person, and then (he) gets drunk.’

*‘This old man thinks that this person gets drunk.’

The ru?-marked clause in (4.iii) is a complement clause. However, the coreferential gap (represented as pro) in (4.iiib) is not a trace created by a raised argument. Instead, it is a null coreferential pronominal element. The structure of (4.iiib) is a coordinating structure in which the linker ru? connects two conjoined clauses which constitute a time sequence relation. Accordingly, (4.iiib) cannot be treated as an instance of “RtoT” in Mayrinax Atayal.
(4.143) a. “RtoT” sentence:

\[ \text{?uji?} \text{-an nku? na} \text{\textasciitilde{\textit{ala}}kis ku? ?ulaqi?} \text{i cu? [ } \text{m<i-taal forget-LT.NFUT NOM old.man T child LNK AT.NFUT<PERF>-read cu? ruas ____ i } \text{].} \]

ACC book
‘The old man forgets that the child has read a book.’

b. Non-“RtoT” correspondence:

\[ \text{?uji?} \text{-an nku? na} \text{\textasciitilde{\textit{ala}}kis cu? [ } \text{m<i-taal cu? ruas ku? ?ulaqi?} \text{].} \]

T child
‘The old man forgets that the child has read a book.’

Second, only the embedded trigger NP may optionally undergo this “RtoT”, whereas a non-trigger NP cannot.


know-Pt.NFUT-1S.NOM LNK AT.NFUT-drink ACC wine T man
‘I know that the man drank/drinks/is drinking wine.’

b. \text{\textasciitilde{\textit{Baq-un-mu ku? mamaliku, cu? [ ma-nubway know-Pt.NFUT-1S.NOM T man LNK AT.NFUT-drink cu? quaw ____ i].}}

ACC wine
‘I know that the man drank/drinks/is drinking wine.’

c. \*\text{\textasciitilde{\textit{Baq-un-mu ku? quaw, cu? [ ma-nubway ____ i ku? mamaliku].}}

know-Pt-1S.NOM T wine LNK AT-drink T man

The examples in (4.144) show that only the embedded trigger NP \text{ku? mamaliku} can optionally appear in the trigger position of the matrix clause. The sentence (4.144c) is ungrammatical because the embedded accusative NP \text{cu? quaw} is moved to the matrix trigger position.

Third, the target position must be a trigger position in the “RtoT” construction. Raising to a non-trigger position is prohibited, even if the raised NP is an embedded trigger NP, such as \text{ku? ?ulaqi?} in (4.145).
ACC book

T child

‘The old man forgets that the child has read a book.’

On the other side of the coin, the matrix clauses of “RtoT” need be NAT-marked, in which the matrix trigger position is potentially available. “RtoT” cannot happen when the matrix clause is AT-marked, as in (4.145a). As seen in (4.145b), the matrix trigger position is occupied by ku? naβakis so that it is not available for the raised NP.

Fourth, the embedded trigger NP is moved out of a tensed clause. As introduced in Section 4.1.1.1, the cu?-marked full complement clauses behave like independent clauses and, thus, can be inflected for different TAMs, as shown in the repeated examples below.

know-PT.NFUT-2S.NOM LNK PROG LNK AT-go 3S.T
‘You know that he is going.’

know-PT.NFUT-2S.NOM LNK AT.FUT-go OBL today 3S.T
‘You know that he will go today.’

c. βaq-un-su? cu? [ m<in>usa? cu? hisa?] 
know-PT.NFUT-2S.NOM LNK AT.NFUT<PERF> go OBL yesterday ?ihiya? ]. (Repeated) 
3S.T
‘You know that he has been (there) yesterday.’

The embedded trigger NPs in (4.6) can optionally occur in the trigger positions of the matrix NAT clauses, as in (4.146).
Compared with (4.6), the embedded verbs in the “RtoT” counterparts in (4.146) remain tensed.

The above facts suggest that the “RtoT” construction is not an instance of raising as defined in the generative framework (Chomsky 1981, 1986, 1995). The optionality of the “RtoT” operation raises a question of whether it should be analyzed as an instance of raising, as raising generally is an obligatory operation, as demonstrated in the English examples below.

(4.147) a. *It seems [John to be happy].
   b. John1 seems [_____i to be happy].

In the generative framework, this is understood as a Case-driven, obligatory movement to satisfy the Case filter (i.e., the requirement that all overt NPs must have Case). In (4.148a), the embedded subject fails to receive Case, as the infinitive clause does not assign nominative Case (NOM). Thus, it is raised to the matrix subject position, where NOM is available.

In addition, “RtoT” is not exactly the same situation as the typical raising verb seem in English, which does not assign a thematic role (theta role) to the matrix subject. This makes the movement legitimate, as the moved element will not receive two theta-roles (in violation of the Theta Criterion). In contrast, in the Mayrinax “RtoT” construction, the matrix verb does assign a theta-role to the matrix trigger argument, such as location assigned by ?uji?an ‘forget (LT)’ in (4.143a), or patient assigned by βaq-un ‘know (PT)’ in (4.142a), (4.144b), and (4.146). The theta-role in question is assigned to the clausal complement in the relevant examples. Though the clausal complement is the trigger, it
cannot be marked by a prenominal trigger marker, because it is not an NP. I take the fact that the “trigger” clausal complement cannot be marked by a trigger prenominal marker, such as ku? in (4.148), to suggest that the clausal complement in question does not occur in the same position as the NP trigger.

ACC book
‘The chief knows that the young man is reading a book.’

ACC book T young.man
‘The chief knows that the young man is reading a book.’

Rather, in sentences like (4.148b), the trigger NP position is left empty (or occupied by a phonetically null expletive) and this position does not receive any theta-role in sentences. The situation is similar to the object expletive construction in English, in which the theme theta-role is assigned to a clausal complement that is extraposed, e.g., I find it interesting [ that more students are learning Hawaiian this year ].

Based on the above discussion, it is highly questionable that what is called “RtoT” actually involves raising since the “RtoT” in the cu?-marked complementation is substantially distinct from what is generally understood as raising. Rather, the phenomenon in question is analogous to tough-construction (Chomsky 1977, 1981), as exemplified by (4.149) below.

(4.149)  a. It is tough [ PRO to solve the problem].

b. The problem is tough [ OP1 [ PRO to solve _____1 ]].

Note that (4.149b) appears to be derived by raising the embedded object the problem to the matrix subject position. However, that cannot be the case for two reasons: (i) “raising” is optional (there is no Case motivation for the embedded object to move); and (ii) the matrix subject position is an argument position to which a theta-role (i.e., the
theme of tough) can be potentially assigned. On the other hand, these are exactly the same properties exhibited by “RtoT” in Mayrinax Atayal.

Tough-construction has been analyzed as involving A’-movement (that is, A-bar movement), in a way similar to wh-movement. Chomsky (1977) argues that tough-construction involves an A’-movement of a null operator (OP), which originates in the embedded clause, moves to its specifier position, and then, is coindexed with the matrix subject, such as the problem in (4.149b). That is, the seemingly “raised” argument, such as the problem in (4.149b), is based-generated in the matrix subject position. In other words, the relationship between the matrix subject and the gap in the embedded clause is therefore similar to that between the head noun and the gap in the relative clause.

The null operator analysis has been applied to account for some apparent raising (or called pseudo raising) for languages, such as Tongan (Otsuka 2000) and Portuguese (Rooryck 2000). The null operator analysis for the tough-construction is also applicable to account for the phenomenon in the Mayrinax “RtoT” in the cu?-marked complementation since both constructions share key properties.

First, the matrix subject position is a theta(θ)-position in tough-construction, while the matrix trigger NP also appears to be a θ-position in the cu?-marked complementation.

Second, in both cases, movement is not motivated by lack of Case. In tough-construction, the missing accusative argument of the defective clause is coindexed with the matrix subject in tough-construction; meanwhile, the matrix trigger NP is coreferential with the missing trigger argument of the defective complement clause. Both missing arguments occupy a Case position in the complement clauses (as evidenced by the grammaticality of their respective non-raising counterpart). Thus, both movements are not Case-driven.

Third, in both cases, movement is optional.

Fourth, the finiteness of the complement clauses remains the same no matter whether there is a raised argument or not. In the English tough-construction, the embedded clause is infinitival both before or after the operator movement. Similarly, in Mayrinax “RtoT”,

134 Chomsky’s (1981) analysis of tough-construction is essentially similar to that of pseudo-cleft, such as John, is [who, is [ tough to please _____ ]].
the complement clause is tensed no matter whether the “RtoT” applies in the cu?-marked complementation or not.

Applying the operator movement to account for the “RtoT” construction in Mayrinax, the base structure of the “RtoT” sentence (4.143a) is analyzed as (4.150).

(4.150) ʔuŋiʔ-an  nkuʔ  naʃakis  kuʔ  ?ulaqiʔ?; [CP  OPi  [c· cuʔ
forget-LT.NFUT NOM old.man T  child  LNK
[IP  m<in>i-taal  cuʔ  ruas  t1 ]].
AT.NFUT<PERF>-read  ACC  book
‘The old man forgets that the child has read a book.’

In the null operator analysis, the trigger NP kuʔ  ?ulaqiʔ? is assumed to be base-generated in the matrix trigger position. The null operator is moved to the specifier of CP and A’-binds its trace in the complement clause. The matrix trigger NP is co-indexed with the operator and, in turn, with the embedded trace. Note that the A’-movement analysis of the “RtoT” in the cu?-marked complementation is supported by the fact that only trigger can undergo this optional “raising” in Mayrinax Atayal. As introduced in Section 4.1.1.2, only trigger NP can be wh-questioned in the pseudo-cleft construction, as shown in the repeated examples below.

(4.28)  a.  Lillian Huang (1995a:139; glosses mine): (Repeate)
nanuan,  kuʔ  β<in>ainay  niʔ  yayaʔ  ?ʔiʔ  isuʔ  ____iʔ?
what  T  buy<PT.NFUT.PERF> NOM mother OBL 2S
‘What has Mother bought for you?’
(lit. ‘What is (the thing) that Mother has bought for you?’)

(4.151)  *imaʔ  kuʔ  β<in>ainay  ____iʔ  ?ʔiʔ  isuʔ  ____iʔ  kuʔ  situiŋ ؟
who  T  buy<PT.NFUT.PERF> OBL 2S  T  clothes
Intended: ‘Who has bought the clothes for you?’
(lit. ‘Who is (the person) that has bought the clothes for you?’)
4.2.2.2 Raising in actor control construction

In addition to the “RtoT” in the cu?-marked complementation, the raising from an embedded argument to a matrix trigger position is also found in the actor control construction. Consider:

(4.143) a. “RtoT” sentence: (Repeated)

\[
\begin{align*}
?\nuji?-an & \ nku? \ nja\betaakis \ ku? \ ?ulaqi?; \ cu? \ [ \ m<in>i-taal \ forget-LT.NFUT \ NOM \ old.man \ T \ child \ LNK \ AT.NFUT<PERF>-read \ cu? \ ruas \ \_\_\_\_i \ ]. \\
\text{ACC} \ book \\
\text{‘The old man forgets that the child has read a book.’}
\end{align*}
\]

b. Non-“RtoT” correspondence: (Repeated)

\[
\begin{align*}
?\nuji?-an & \ nku? \ nja\betaakis \ cu? \ [ \ m<in>i-taal \ cu? \ ruas \ ku? \ ?ulaqi? \ ]. \\
\text{T \ child} \\
\text{‘The old man forgets that the child has read a book.’}
\end{align*}
\]

(4.152) a. Raising in the actor control construction:

\[
\begin{align*}
?\nuji?-an & \ nku? \ ?ulaqi?; \ ku? \ ruas; \ ?i? \ [ \ mi-taal \ \_\_\_\_j \ \Delta_i \ ]. \\
\text{forget-LT.NFUT \ NOM \ child \ T \ book \ LNK \ AT-see} \\
\text{‘The child forgets to read a book.’}
\end{align*}
\]

b. Non-raising correspondence:

\[
\begin{align*}
*?\nuji?-an & \ nku? \ ?ulaqi?; \ ?i? \ [ \ mi-taal \ cu? \ ruas \ \Delta_i \ ]. \\
\text{forget-LT.NFUT \ NOM \ child \ LNK \ AT-see} \ \text{ACC \ book} \\
\text{‘The child forgets to read a book.’}
\end{align*}
\]

As seen in (4.152), the accusative patient of the embedded AT clause is obligatorily moved to the matrix trigger position. At first glance, the raising in the actor control construction in (4.152a) is similar to the “RtoT” in (4.143a). First, the raised NPs of both constructions target the matrix trigger positions, such as \( ku? \ ?ulaqi? \) in (4.143a) and \( ku? \ ruas \) in (4.152a). Second, the matrix clauses in both constructions are required to be NAT-marked, in which the matrix trigger NP position is available. In (4.153), the

135 The examples of raising in the actor control construction have already been noted in Lillian Huang’s (1995a:193–194) discussion on the serial verb construction (that is, actor control in this study). However, she does not turn to a raising analysis to account for these examples. Instead, Lillian Huang (1995a:194) only indicates that the focused NP (that is, the trigger NP) shows agreement with the focus marking of the first verb. Her account does not appeal to movement or raising.
embedded patient *cuʔ claq cannot be extracted when the matrix verb is AT-marked in the actor control.

\[(4.153)\]
\[\text{a. } \text{ma-naqru-cǐ?}_{i} [ \text{ma-tawau } cuʔ \text{ claq } \Delta_{i} ] . \]
\[\text{AT.NFUT-finish-1.S.T:LNK AT-cultivate ACC field} \]
\[\text{‘I finish cultivating a field,’} \]
\[\text{b. } *\text{ma-naqru-cǐ?}_{i} \text{ kuʔ claq}_{j} [ \text{ma-tawau } \_\_\_\_j \text{ } \Delta_{i} ] . \]
\[\text{AT.NFUT-finish-1.S.T:LNK T field AT-cultivate} \]

Third, in both cases, movement is not Case-driven. The matrix trigger NP *kuʔ ulaqi? of the “RtoT” construction in (4.143a) is moved from the embedded trigger position of a tensed complement clause. As for the raised trigger *kuʔ ruas in (4.153a), it is extracted from an accusative patient of the defective complement clause.

However, careful examination reveals that raising in the actor control construction is a different phenomenon from the “RtoT” in the cuʔ-marked complementation. First, the raising in the actor construction is obligatory, as in (4.153), while it is optional in the “RtoT” construction, as in (4.143). Second, the raised NP in the actor control construction is not extracted from the embedded trigger position. Instead, it is from the accusative position of the embedded clause. Therefore, the null operator movement proposed for the “RtoT” construction in the cuʔ-marked complementation does not apply to the case of the raising in the actor control construction.

Based on the above reasons, the raising in the actor control construction is better analyzed as an instance of raising. Most of all, the obligatory raising in the actor construction resembles raising since raising is normally an obligatory operation. Another similarity is that the raised argument in the actor control construction is moved from a non-trigger position to a trigger position when the matrix trigger NP position is not occupied by an overt NP. Similarly, in a raising construction, an embedded subject, such as Mary in (4.154a), is obligatorily moved from a Caseless position of the infinitive clause into a Case position in the matrix clause when the matrix verb seem does not subcategorize for an NP that could occur as the matrix subject. Note that this obligatory raising-to-subject is not only motivated by the lack of Case, but also satisfies the
Extended Projection Principle (EPP), a requirement that all sentences must have a subject (Chomsky 1981).

(4.154) a. Mary seems [____, to hit the jackpot].
    b. *It seems [Mary to hit the jackpot].

As discussed in Section 4.2.1.1, a control sentence in Mayrinax is required to have an overt trigger NP for the whole clause and an empty trigger NP in the embedded clause simultaneously. Consider the following repeated examples of actor control:

(4.125) a. AT-AT actor control pattern: (Repeated)
    like<AT.NFUT> T old.man LNK AT-take.care.of ACC child
    ‘The old man likes to take care of this child.’
    b. AT-NAT actor control pattern: (Repeated)
    like<AT.NFUT> T old.man LNK take.care.of-LT NOM child
    ‘The old man likes to be taken care of by this child.’

(4.126) a. NAT-AT actor control construction: (Repeated)
    like-LT.NFUT NOM old.man LNK AT-take.care.of ACC child
    ‘The old man likes to take care of this child.’
    b. NAT-NAT actor control construction: (Repeated)
    like-LT.NFUT NOM old.man LNK take.care.of-LT NOM child
    ‘The old man likes to be taken care of by this child.’

In (4.125), there is a matrix trigger NP ku? naβakis and an embedded trigger null argument in both AT-AT and AT-NAT patterns. The examples in (4.126) are ungrammatical because there is no overt trigger NP in the matrix NAT clauses. Note that this constraint is strikingly similar to the EPP, in which a clause must contain an NP in the subject position. In this respect, the trigger in Mayrinax behaves like the notion “subject” in languages (e.g., English) in that all sentences must have a trigger NP in Mayrinax Atayal.
Due to the lack of the matrix overt NP, the embedded accusative patient in (4.126a) is required to move to fill in the matrix trigger position so that the ungrammatical sentence can be rescued, as in (4.155a).

(4.155)  a.  NAT-AT actor control construction:
\[
\begin{align*}
&\text{s?uaʔ-an nkuʔ naβakis, } \text{kuʔ ?ulaqiʔi} \text{?iʔ [ ma-lahaŋ } \Delta_i ] . \\
&\text{like-LT.NFUT NOM old.man T child LNK AT-take.care.of}
\end{align*}
\]

‘The old man likes to take care of this child.’

b.  NAT-NAT actor control construction:
\[
\begin{align*}
&*\text{s?uaʔ-an nkuʔ naβakis, } \text{kuʔ ?ulaqiʔi} \text{?iʔ [ klahan-an } \Delta_i ] . \\
&\text{like-LT.NFUT NOM old.man T child LNK take.care.of-LT}
\end{align*}
\]

Intended: ‘The old man likes to be taken care of by this child.’

However, the nominative actor of the embedded NAT verb in (4.126b) is not allowed to move to the matrix trigger position, as in (4.155b). That the embedded non-trigger actor cannot move into the matrix trigger position might be due to the fact that the position of non-trigger actor is rather fixed in Mayrinax Atayal, as mentioned in Section 2.2.1.

The above facts suggest that the raising in the NAT-AT actor control construction is motivated by a constraint akin to the EPP. Similar to the raising in English, an accusative NP of an AT embedded verb is obligatorily moved to a matrix trigger position when the NAT actor control verb is in lack of an overt trigger NP.

It should be noted that raising in the actor control constructions have some other alternative constituent orders, as illustrated in (4.156).

(4.156)  Raising in the actor control construction:
\[
\begin{align*}
a. &\text{t<in>alam-an nkuʔ tawkiʔi } \text{kuʔ quawj } \text{?iʔ [ m-nuβuaŋ } \Delta_i ] . \\
&\text{try<PERF>-LT.NFUT NOM chief T wine LNK AT-drink}
\end{align*}
\]

‘That chief has tried to drink wine.’

b.  [ t<in>alam-an nkuʔ tawkiʔi } \text{quawj } \text{?iʔ [ m-nuβuaŋ } \Delta_i ] \\
\text{try<PERF>-LT.NFUT NOM chief LNK AT-drink}
\]

\text{kuʔ quawj,}

T wine

‘That chief has tried to drink wine.’
As discussed in Section 4.2.1.1 and Section 4.2.1.2, the matrix trigger NP of a control construction (both actor control and patient control) is allowed to move to the sentence-final position, which is outside the matrix clause. Accordingly, the raised NP in the matrix trigger position is cyclically moved to the sentence-final position, such as ku? quaw in (4.156b) and (4.156c), as evidenced by the same trigger marking. In addition to the matrix trigger NP, the matrix nominative NP, such as nku? tawqi in (4.156c), can be postposed together with the matrix trigger NP ku? quaw. The postposed two NPs in (4.156c), again, support our proposal that the sentence-final position with the postposed NP(s) is not an A-position but an A’-position, as more than one NP can be postposed.

The structural variations of the raising in the actor control are exactly the same as the ones of the patient control when compared to the examples of patient control in (4.157).

(4.157) Patient control construction:

   teach-LT.NFUT NOM chief T child LNK hunt<AT>
   ‘The chief teaches the child to hunt.’

   teach-LT.NFUT NOM chief LNK hunt<AT> T child
   ‘The chief teaches the child to hunt.’

c. [ pisiq-an ___i ___j ?i? [ q<um>aluap Δj ]]
   teach-LT.NFUT LNK hunt<AT>
   NOM chief T child
   ‘The chief teaches the child to hunt.’

The sameness of the structural variationas between the raising in the actor control and patient control supports that the matrix NP position filled with a raised NP in the actor control acts the same as the matrix NP in the patient control.
4.2.2.3 Clitic climbing

Mayrinax Atayal also exhibits what looks like the raising of a bound personal pronoun. In (4.159b), the pronominal argument of the embedded NAT-marked clause appears on the matrix verb in the cu?-marked complementation. Example (4.158b) is an instance of the so-called clitic climbing in Mayrinax Atayal. A clitic is a morpheme that is grammatically independent, but phonologically dependent on another word. Lillian Huang (1995a:29) indicates that the bound trigger and nominative personal pronouns are clitics. Compare the following sentences in (4.158) and (4.159):

(4.158) a. snua-un-mu? cu? [ ma-?uah-su?].
   believe-LT.NFUT-1S.NEOM LNK AT.FUT-come-2S.T
   ‘I believe that you will come.’
   b. snua-un-misu?i cu? [ ma-uah ____i].
   believe-LT.NFUT-1S.NOM:2S.T LNK AT.FUT-come
   ‘I believe that you will come.’
   believe-LT.NFUT-1S.NOM-2S.T LNK AT.FUT-come

   believe-LT.NFUT-1S.NOM LNK AT.FUT-come T child
   ‘I believe that the child will come.’
   believe-LT.NFUT T child LNK AT.FUT-come
   ‘I believe that the child will come.’

When there is a trigger gap in the NAT-marked matrix clause, the embedded trigger bound personal pronoun can optionally attach to the matrix predicate, such as -su? of the portmanteau -misu?136 in (4.158b). The clitic climbing in (4.158b) is the “RtoT” in the cu?-marked complementation discussed in Section 4.2.2.1 since other full NPs, such as ku? ?ulaqi? in (4.159a), appear in the matrix trigger position.

The occurrence of clitic climbing is not necessarily the indication of a raising construction in Mayrinax Atayal, however. As introduced in Section 4.2.2.1, the “RtoT” is attested in the cu?-marked complementation with an NAT matrix clause in Mayrinax.

136 The portmanteau -misu? is composed of a first person nominative -mu? and a second person trigger -su?.
However, the clitic climbing is also found in the complementation other than the 
\(cu\?\)-marked complementation. For instance, clitic climbing also occurs in the \(\nu\)\?-marked complementation.

(4.160) a. \(asi_1\) \(\nu\)\? [ \(r<\text{um}>\text{akaap-}cimu\) cu? hottarkuy ].
seem \(\text{LNK}\) \(\text{catch}<\text{AT.NFUT}>\text{-2P.T}\) ACC fire.fly
‘It seems that you are catching fireflies.’

b. \(asi_1\)-cimu\(i\) \(\nu\)\? [ \(r<\text{um}>\text{akaap}\) cu? hottarkuy \(\text{-}\text{i}\) ].
seem-2P.T \(\text{LNK}\) \(\text{catch}<\text{AT.NFUT}>\text{drunk}\) ACC fire.fly
‘It seems that you are catching fireflies.’

(4.161) a. \(asi_1\) \(\nu\)\? [ \(r<\text{um}>\text{akaap}\) cu? hottarkuy \(\text{ku?} \ ?\text{ulaqi?}\) ].
seem \(\text{LNK}\) \(\text{catch}<\text{AT.NFUT}>\text{drunk}\) ACC fire.fly T child
‘It seems that the child is catching fireflies.’

b. \(asi_1\) \(\text{ku} \ \text{ulaqi?}_i\) \(\nu\)\? [ \(r<\text{um}>\text{akaap}\) cu? hottarkuy \(\text{-}\text{i}\) ].
seem T child \(\text{LNK}\) \(\text{catch}<\text{AT.NFUT}>\text{drunk}\) ACC fire.fly

In (4.160a), the trigger clitic \(-cimu\) of the complement clause is attached to the matrix verb \(asi_1\) ‘seem’. Note that the semantics of the verb \(asi_1\) ‘seem’ does not allowed it to subcategorize for an argument. This is evidenced by the fact that the embedded NP \(ku? \ \text{ulaqi?}\) (4.161b) cannot appear in the matrix trigger position. Thus, clitic climbing involving the \(\nu\)\?-marked complementation cannot be understood as an instance of “\(\text{RtoT}\)”.

In addition to the \(cu\?\)-marked and \(\nu\)\?-marked complementation, clitic climbing is also found in the \(na\?)\?-marked complementation. The trigger clitic pronouns of the \(na\?)\?-marked complement clause can optionally to attach to the matrix predicate \(ua?\) ‘hope’, such as \(-\text{cami}\) in (4.162).

(4.162) a. \(ua? \ \text{na?} [ \text{pa-}\nu\beta\text{way-}\text{cami} \ cu? \ ?\text{aaŋ} ].
\(\text{hope}\) \(\text{LNK}\) \(\text{A.FUT-drink-1P.EXCL.T}\) ACC soup
‘(I) hope that we will drink soup.’

b. \(ua?\)-cami\(i\) \(\text{na?} [ \text{pa-}\nu\beta\text{way-}_i\) \(\text{cu?} \ ?\text{aaŋ} ].
\(\text{hope-1P.EXCL.T}\) \(\text{LNK}\) \(\text{A.FUT-drink}\) ACC soup
‘(I) hope that we will drink soup.’
    hope LNK AT.FUT-drink ACC soup T child
    ‘(I) hope that the child will drink soup.’

    hope T child LNK AT.FUT-drink ACC soup
    ‘(I) hope that the child will drink soup.’

However, clitic climbing in the na?-marked complementation cannot be analyzed as an instance of “RtoT since an embedded trigger NP, such as ku? ?ulaqi? in (4.163b), is not allowed to appear in the matrix trigger position.

Based on the above discussion, clitic climbing is available only to clitic trigger pronouns in three types of constructions: cu?-marked complementation, γa?-marked complementation, and na?-marked complementation. However, only the cu?-marked complementation is an instance of “RtoT”. An embedded trigger clitic can attach to the matrix NAT-marked predicate in these three constructions. It seems that this operation has been extended to the non-pronominal arguments in cu?-marked complementation. The differences between cu?-marked complementation and γa?/-na?-marked complementation seem to support our hypothesis that cu? has become a full-fledged complementizer and (hence “RtoT” of full NPs is also permissible), while other linkers, such as γa? and na?, are still in a transitional status (see Section 4.1.7).

4.3 Summary
Mayrinax Atayal is a Formosan language with the largest inventory of clause linkers for connecting full complement clauses. These clause linkers include: cu?, ru?, ʔi?, na?, γa?, and mha?. Each of the six clause linkers is selected by a different group of complement-taking (CPT) verbs. At the same time, the six clause linkers are homophonous with other syntactic items in Mayrinax Atayal. The homophony suggests that some of these clause linkers may have their origins in these other homophonous syntactic categories though synchronically all the six linkers function as a complementizer. Among the homophonous items with the clause linkers, the most likely sources for the clause linkers includes: (i) accusative Case marker (cu?); (ii) coordinating conjunction (ru?); and (iii) verb of saying
The complementizer cu? may have derived from an accusative Case marker cu?, as similar homophony is also attested in other genetically related languages, such as Puyuma (daq) and Bunu/Kavalan/Piawan (tu). The clause linker ru? may have evolved from the coordinating conjunction ru?. This is evidenced by the fact that the linker ru? still shares some syntactic properties of the homophonous coordinating conjunction ru?. This suggests that the development from the coordinating conjunction ru? into the complementizer ru? is still in progress. As for the clause linker mha?, its origin is very like to be the verb of saying mha? which underwent grammaticalization in its historical development.

As for the defective complement clauses, they fall into two types: control and raising. Like Amis, Mayrinax control is divided into actor control and patient control. Both constructions in question involve an empty category in the embedded trigger position. When the matrix actor is coreferential with the empty category, it is called “actor control”. It is referred as “patient control” when the reference of the empty category is controlled by the matrix patient. Both actor/patient control constructions have an overt linker ?i? intervening between the matrix clause and defective embedded clause. The existence of the overt linker ?i? suggests that the constructions in question may not be SVC as Lillian Huang (1995a) proposes. The discussion in Section 4.2.1 also provides other pieces of evidence to show that the constructions in question are not SVC. My control analysis for these constructions is supported by the syntactic properties of the empty category, which are similar to those of PRO. First, the empty category in actor control or patient control cannot be recovered by an overt NP. PRO is a base-generated empty category so it can never be realized as an overt NP. Second, it is required to occupy a trigger position in the embedded clause, which is similar to the embedded subject of PRO in other languages like English. (Note that the empty category of patient control needs to be an actor in addition to occupying in a trigger position.) Furthermore, the control analysis is also supported by the defective TAMs of the embedded clauses, which is in a way similar to the nonfinite verbs in the control construction of other languages (e.g., English). The embedded verbs in the actor control cannot take any specific TAM morphology, while the embedded verbs in the patient control can only be inflected for trigger marking and/or future tense. Crosslinguistically,
some languages allow their control constructions to have defective TAM of the complement clauses other than infinitives, such as Albanian (Landau 2004), Hebrew (Landau 2004), Japanese (Uchibori 2000), and Persian (Hashemipour 1989 and Ghomeshi 2001).

Regarding the complementation with a “raised” argument, there are three types of constructions: “Raising-to-trigger” (“RtoT”), raising in the actor control, and clitic climbing. “RtoT” and clitic climbing both involve the embedded trigger argument/clitic realized as a trigger NP/clitic in the matrix clause. As for the raising in the actor control, it refers to the actor construction in which the embedded accusative patient of the complement clause is obligatorily raised into the matrix trigger position when there is no overt trigger argument in the matrix clause. The current study shows that both “RtoT” and clitic climbing are not raising as defined in the generative literature, as “raising” in “RtoT” and clitic climbing are optional, while raising operations need be obligatory. Given that the optional movement of “RtoT” resembles the English tough-constructicon, the present study proposes that “RtoT” is better treated as an instance of A’-movement of null operator (cf. Chomsky 1977, 1981). On the other hand, the raising in the NAT-AT actor control is an instance of raising, as supported by the fact that the movement is obligatory. Raising in the actor control is driven by the need of an overt trigger NP, which is in a way similar to the requirement of Extended Projection Principle (EPP), that is, each clause must have a subject.
CHAPTER FIVE
COMPLEMENTATION IN TSOU

This chapter investigates the syntax of sentential complementation in Tsou. This study covers three types of syntactic constructions related to Tsou complementation: (i) full complement clauses; (ii) defective complement clauses including patient control, apparent patient control, and “raising-to-trigger” (“RtoT”); and (iii) serial verb constructions (SVC).

(5.1) Full complement clauses:

a. os-ʔo cohiv-i (ho) [ mi-ta,\textsuperscript{137} m-umʔu ta ñuvnu.]
NAT.NFUT-1S.NOM know-LT LNK AT.NFUT-3S.T AT-plant ACC flower
ʔe oko
T child 'I know that the child is planting flowers.

b. os-ʔo taʔunan-a (*ho) [ mo yoŋhu
si mamespiŋi ].
T girl 'I think that the girl is beautiful.'

(5.2) Defective complement clauses:

a. Patient control:

os-ʔo pahsvusvit-i ʔe ʔoʔoko ho [ (te) tua
NAT.NFUT-1S.NOM advise-LT T PL-child LNK FUT AT.pick
ʔocy a ∆j ].
tea.leaves 'I advised the children to pick tea leaves.

b. Apparent patient control:

os-ʔo pahsvusvit-i ʔe ʔoʔoko ho [ p(o)a-tua
NAT.NFUT-1S.NOM advise-LT T PL-child LNK CAUS-AT.pick
ʔocy a ( ∆j ) ∆i ].
tea.leaves 'I advised the children to make pick tea leaves.

\textsuperscript{137} The bound personal pronoun -\textit{ta} attached to the auxiliary \textit{mi}- is an agreed third person pronoun which is invariably coindexed with the actor of the same clause (i.e., \textit{ʔe oko ‘the child (T)’}) regardless of the trigger marking of the clause (Starosta 1988, Ya-yin Chang 1998, Chang & Tsai 2001, and others).
c. “Raising-to-trigger” (“RtoT”):

\[
\text{os-}?o \quad \text{cohiv-i} \quad \text{?e oko} \quad \text{ho} \quad \text{[mi-ta} \quad \text{m-um} ?u} \\
\text{NAT.NFUT-1S.NOM know-LT T child LNK AT.NFUT-3S.T AT-plant} \\
\text{ta} \quad \text{bu} \quad \text{nu} \quad \text{_____ i]}. \\
\text{ACC flower} \\
\text{‘I know that the child is planting flowers.}
\]

(5.3) Serial verb constructions (SVCs):

a. Same-actor SVC:

\[
\text{mi-ta} \quad \text{[v1 m-ici} \quad \text{[v2 aut} ?ucu] \quad \text{to} \quad \text{hahoc} \text{ьu} \\
\text{AT.NFUT-3S.T AT-want AT.take.care.of ACC man} \\
\text{?e mamespi} \quad \text{i} . \\
\text{T woman} \\
\text{‘The woman wants to take care of the man.’}
\]

b. Same-trigger SVC:

\[
\text{mi-ta} \quad \text{[v1 m-ici] \quad [v2 aut} ?uc-a \quad \text{] \quad \text{to} \quad \text{hahoc} \text{ьu} \quad \text{?e mamespi} \quad \text{i} . \\
\text{AT.NFUT-3S.T AT-want take.care.of-PT} \\
\text{ta} \quad \text{hahoc} \text{ьu} \quad \text{?e mamespi} \quad \text{i} . \\
\text{NOM man T woman} \\
\text{‘The woman wants to be taken care of by the man.’}
\]

The distinction between the full and defective complement clauses is whether there is a missing argument in the complement clauses. The full complement-clause constructions have no missing argument, as in (5.1). There are two types of clause linkers for the Tsou full complement clauses: the overt linker ho and the covert linker (represented as Ø).

Most of the complement-taking verbs, such as cohivi ‘know (LT)’ in (5.1a), select a ho-marked full complement clause, while few verbs, such as ta?unana ‘think (PT)’ in (5.1b), take a Ø-marked full complement clause.

The complementation constructions with defective complement clauses include: (i) patient control; (ii) apparent patient control; and (iii) “RtoT”. All of the three constructions contain a missing argument in the embedded clause, as shown in (5.2). The patient control construction is a complex construction in which a matrix patient controls the reference of the missing argument in the embedded clause, as in (5.2a). The apparent patient control sentence (5.2b) seems to have a similar structure to that of patient control sentence (5.2a) in that the matrix verb pahsu?uvti ‘advise (LT)’ in (5.2b) subcategorizes

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138 The verb mici ‘want (AT)’ has a variant mioci. There is no grammatical/semantic difference between mici and mioci. In order to avoid confusion, mici is consistently used in this dissertation.
for two complements: a patient and a defective clausal complement marked by a linker ho. Regarding the subcategorization, the matrix verb in the apparent patient control in Tsou behaves like the patient control verbs in Amis and Mayrinax Atayal. Different from the patient control in Amis and Atayal, however, the defective complement clauses in the apparent patient control of Tsou are required to undergo causativization. Accordingly, the controller is switched from the matrix patient to the matrix actor. This phenomenon is attributed to “actor sensitivity” proposed by Chang & Tsai (2001). Therefore, the construction like (5.2b) in Tsou is not patient control. In order not to confuse readers, it is called “apparent patient control” in this study.

As for the “raising-to-trigger” (“RtoT”) phenomenon, a trigger NP of the full complement clause appears in the trigger position of the NAT matrix clause. However, this construction should not be considered as an instance of raising as defined in the generative framework (Chomsky 1981, 1986, 1995), as will be discussed in Section 5.2.3.

The linear order of the Tsou SVC is similar to that of the actor control pattern in Amis in that there is an apparent verb-verb sequence, as in (5.3). However, it cannot be treated as an instance of actor control since there is evidence to suggest that the relevant construction is monoclausal, in which the juxtaposed verbs share one argument and one single set of tense and aspect marking (TAM). The present study proposes two types of SVCs in Tsou: same-actor SVC, as in (5.3a), and same-trigger SVC, as in (5.3b).

Complementation in Tsou exhibits a unique type among the Formosan languages. First, Tsou exclusively uses a clause linker ho homophonous with a coordinating conjunction ho to connect a complement clause, as in (5.4)\(^{139}\).

\[
\begin{align*}
\text{(5.4) a. Coordinating conjunction: } & \text{ho (Tung 1964: 121; glosses mine)} \\
\text{mi-} & \text{ʔo-cu uh to hopo ho oeŋtu.} \\
\text{AT.NFUT-1S.NOM-ASP AT.go OBL bed and AT.sleep} \\
\text{‗I went to the bed and slept.‘}
\end{align*}
\]

\(^{139}\) As discussed in Section 4.1.2, Mayrinax Atayal also uses a clause linker ruʔ homophonous with the coordinating conjunction ruʔ. However, the ruʔ-marked full complement clauses are only selected by a few verbs. The most productive clause linker for a full complement clause is cuʔ homophonous with an accusative marker in Mayrinax. In contrast, the Tsou clause linker ho is selected to link a full complement clause by most verbs.
b. Complement clause linker: *ho

os-?o aytI *ho [ mo m-eobaJo ta tokeuya
NAT.NFUT-1S.NOM see-LT LNK AT.NFUT AT-chase ACC butterfly
?e ηiau].
T cat
‘I saw that the cat was chasing butterflies.’

In contrast, most Formosan languages use a linker homophonous with an accusative
marker, such as *cu? in Mayrinax Atayal, *du in Puyuma, and *tu in Bunun, Kavalan and
Paiwan.

Second, Tsou uses the same overt linker *ho to mark both full complement clauses, as
in (5.1), and defective complement clauses (not including “RtoT”), as in (5.2a) and (5.2b).
The full complement clauses and defective complement clauses (not including “RtoT”)
are not marked with the same overt clause linker in other Formosan languages.140 Take
Paiwan for example.

(5.5) Paiwan: Full complement clause

k<om>oan-a?en [ *tu/a ma-pu[av-a?a?en ].
know<AT.NFUT>-1S.T LNK AT.NFUT-get.drunk-ASP-1S.T
‘I know that I have gotten drunk.

(5.6) Paiwan: Defective complement clause

a. Actor control construction:
patakit⁴⁴ timad⁴⁴u_i [ *tu/a t<om>o-k[ Δₑ ta vava ].
AT.NFUT.start 3S.T LNK drink<AT> ACC wine
‘He started to drink wine.

b. Patient control construction:
?u-l<in>awi timad⁴⁴u_i [ *tu/a k<om>an Δ₃
1S.NOM-allow<PT.PERF> 3S.T LNK eat<AT>
ta vutul ].
ACC pork
‘I have allowed him to eat pork.’

140 Mayrinax Atayal is the exception in that the same clause linker *ii? is used to link some full complement
clauses and defective complement clauses (not including apparent raising). But the *ii?-marked full
complement clauses are selected by only a couple of verbs though the clause linker *ii? is the only clause
linker for defective complement clauses. Rather, the most productive clause linker for full complement
clauses is *cu? in Mayrinax. Still, the case in Mayrinax cannot be parallel to the one in Tsou.
In Paiwan, the full complement clauses are marked with a clause linker *tu*, as in (5.5); and the actor/patient control contructions with a missing argument marked by a different clause linker *a*, as in (5.6).

Third, among Formosan languages, Tsou is the only one where a verb is preceded by an auxiliary verb, on which TAM morphology occurs. In addition, there is a “focus harmony” (that is, trigger harmony in our terminology) between the main verb and the preceding auxiliary verb (Starosta 1988 and Yung-li Chang 2006a). Different from Tsou, it is the trigger marker attached to the verb that carries TAM information in other Formosan languages. This fact is especially relevant in analyzing the verb-verb sequence in Tsou. While we find verb-verb sequences in many Formosan languages, it is only in Tsou that the verb-verb sequence are preceded by an auxiliary verb. In Amis and Atayal, each verb in apparent verb-verb sequence carries a separate TAM marker and hence the verb sequence in question cannot be analyzed as an instance of SVC. On the contrary, most Formosan linguists agree that the verb juxtaposition in Tsou should be analyzed as SVC, as TAM is marked only once in the verb-verb sequence (Lillian Huang 1997; Zeitoun 2000c; Yung-li Chang 2006a, 2006b, 2009, 2010; Lin 2009; Huei-ju Huang 2010; and others).

There are many previous studies related to Tsou complementation, including Starosta (1988), Zeitoun (2000c), Chang & Tsai (2001), Lin (2002, 2009), Ya-yin Chang (2004), Huei-ju Huang (2003, 2010), Yung-li Chang (2006b, 2009, 2010), Tsai (2007), and Yeh & Huang (2009), etc. Among them, Lin’s (2002) study on Tsou is one of the most comprehensive studies in terms of Formosan complementation based on the functional/cognitive approach. However, no comprehensive work has been done based on the syntactic structures and properties of Tsou complementation. In addition, there are some gaps in the existing literature: the same-trigger SVCs, patient control and “RtoT” have never been explored yet. Thus, my study aims at filling these significant gaps in the study of Tsou complementation.

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141 Yung-li Chang’s (2006b, 2009, 2010) studies on adverbial verb constructions treat the adverb-verb sequence as one type of SVCs in Formosan languages, mainly Tsou and Kavalan. Note that the present study only investigates the verb-verb sequences and does not extend to the adverbial verb constructions.
142 Tung (1964) is the first work that introduces the “complex sentences” in Tsou. However, the complex sentences in his work cover adverbial subordinate constructions only. Most of the examples involve temporal and conditional subordinate clauses, not complement clauses.
This chapter is divided into three major sections. We discuss full complement clauses in Section 5.1, defective complement clauses in Section 5.2, and SVCs in Section 5.3. Regarding the full complement clauses, they are further divided into ho-marked complementation in Section 5.1.1 and Ø-marked complementation in Section 5.1.2. The defective complement clauses include patient control and apparent patient control in Section 5.2.1 and “RtoT” in 5.2.2. Given that SVC is monoclausal, the Tsou SVCs are discussed separately in Section 5.3.

5.1 Full embedded clauses
Tsou utilizes an overt linker ho (or hocilhonci) and a covert linker Ø (an empty linker) to connect the matrix clause and the full complement clause (Lin 2002). Most of the complement-taking (CPT) verbs subcategorize for a ho-marked complement clause. The CPT verbs which select Ø-marked complement clauses are limited to few verbs. I will discuss the ho-marked full complement clauses in Section 5.1.1 and Ø-marked full complement clauses in Section 5.1.2.

5.1.1 ho-marked complementation
5.1.1.1 Syntactic properties
The structure of the ho-marked complementation refers to a subordinate structure in which a matrix clause is followed by a full complement clause led by ho (or hocilhonci), as in (5.7).

(5.7)  a. os-ʔo cohiv-i (ho) [ mo m-imo to chumu
      NAT.NFUT-1S.NOM know-LT LNK AT.NFUT AT-drink ACC water
      ta ʔuachumu144 ].
      T bull
      ‘I know that the bull is drinking water.’

b. mo smoyo ʔe ino *(ho)-*(ci)-ta oepuŋ-a ʔo nave
      AT.NFUT AT.fear T mother LNK-SBJV-3S.NOM eat.up-PT T rice
      ‘Mother fears that he would eat up the rice.’

143 The morphological complexes hocil and honci are used to indicate hypothetical events.
144 ʔuachumu ‘bull’ is a compound word which can be decomposed into two words, ʔua ‘deer’ and chumu ‘water’.
The two clause linkers *ho* and *ho-ci* reflect an indicative-subjunctive distinction of the full complement clauses in Tsou (cf. Noonan 1985). The clause linker *ho* marks an indicative complement which refers to an actual or possible situation, while *ho-ci* (or *honi-ci*) selects a subjunctive complement which refers to a hypothetical or counterfactual situation (cf. Huei-ju Huang 2003). The clause linker *ho* is used to link an indicative full complement clause, as in (5.7a). The indicative clause linker *ho* in (5.7a) is optional, but the native speakers indicate that the sentences sound more correct when keeping the linker *ho*. As for the subjunctive full complement clauses, the linker *ho* need be suffixed with a subjunctive marker -ci, as in (5.7b). When the clause linker is the morphologically complex *ho-ci* in (5.7b), neither sub-part of *ho-ci* can be omitted. The complementation construction with an indicative full complement clause led by *ho* is henceforth referred as *ho*-marked complementation, while the complementation construction with a subjunctive full complement clause led by *ho-ci* is called *hoci*-marked complementation.

The CPT verbs which select a *ho*-marked full embedded clause are many and of various semantic types: propositional attitude predicate (e.g., *tauvyva/tauzva* [TP/TF] ‘believe (PT)’ in (5.8a)), perception predicate (e.g., *taðui* ‘hear (LT)’ in (5.8b)), achievement predicate (e.g., *taʔpayoa* ‘forget (PT)’ in (5.8c)), commentative predicate (e.g., *umnu* ‘good (AT)’ in (5.8d)), manipulative predicates (e.g., *teomneni* ‘allow (BT)’ in (5.8e) and *potani* ‘prevent (LT)’ in (5.8f)), etc.

(5.8)  

a. *osʔo  tauvy-a (ho) [ mi-ko naʔno
    NAT.NFUT-1S.NOM believe-PT LNK AT.NFUT-2S.T AT.very
    ananaʔo [ AT.conscientious
    ‘I believe that *you* are very conscientious.’

---

145 In Huei-ju Huang (2003), the differences between the *ho*-marked and *hoci*-marked complements are attributed to the reality distinction. The reality distinction corresponds to Noonan’s (1985) indicative/subjunctive distinction adopted in this study.

146 The two words TP and TF stand for the Tapang and Tfuya dialects, respectively. That is, the distinction between the two verbs *tauvyva* and *tauzva* is a dialectal difference, where *tauvyva* appears in Tapang dialect, and *tauzva* in Tfuya.

147 The subcategorization of the complement-taking verbs follow Noonan’s (1985) version.
b. os-ʔo **tadu-i** (ho) [ mi-ko naʔno kaerello ].
NAT.NFUT-1S.NOM hear-LT LNK AT.NFUT-2S.T AT.very AT.happy ‘I heard that you are very happy.’

c. os-ʔo **taʔpayo-a** (ho) [ mi-ko uh ne148 ʔeesaŋsi NAT.NFUT-1S.NOM forget-PT LNK AT.NFUT-2S.T AT.go OBL plain ne hucma ].
OBL the.previous.day ‘I forgot that you went to the plain yesterday.’

d. mo naʔno **umnu** (ho) [ te-hinʔi m-unʔu ta ʔocyay AT.NFUT AT.very AT.good LNK FUT-3S.T AT-plant ACC tea ?e yuʔafuynanai ].
T young.men ‘It is very good that the young men will plant tea.’

e. i-si, **teom-neni** ta inoʔi (ho) [ te-ʔo uh NAT.NFUT-3S.NOM allow-BT NOM mother LNK FUT-1S.T AT.go ne maybayu ].
OBL Chiayi ‘Mother allowed me to go to Chiayi.’
(lit. ‘Mother allowed that I go to Chiayi.’)

f. o-ʔu-da **potan-i** ho [ te-ta tutpuutu to feuʔu ].
NAT.NFUT-1S.NOM-ASP dissuade-LT LNK FUT-3S.T AT.catch ACC pig ‘I had dissuaded him from catching a pig.’
(lit. ‘I had dissuaded that he would have caught a pig.’)

In other Formosan languages, manipulative verbs typically appear in a patient control construction, not in a full complement-clause construction. However, some of the Tsou manipulative verbs, such as **teomneni** ‘allow (BT)’ in (5.8e) and **potani** ‘prevent (LT)’ in (5.8f), occur in the ho-marked complementation (Zeitoun 2000c, Lin 2002 and Huei-ju Huang 2010). Meanwhile, others appear in the patient control and apparent patient control constructions, which will be discussed in Section 5.3.1.

Most of the CPT predicates that take a ho-marked complement clause appear to be obligatorily NAT-marked. For instance, the NAT verb **ayti** ‘see (LT)’ can select either a trigger patient NP or a ho-marked sentential complement, as in (5.9). In contrast, the AT

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148 The preposition ne is used to mark the past time adverbs, such as ne hucma ‘yesterday’, ne seihu ‘the day before yesterday’, etc. Another preposition ho marks future time adverbs, such as ho hucma ‘tomorrow’, ho seihu ‘the day after tomorrow’, etc. For further information on Tsou time adverbs, please see Weng (2000), Pan (2007), etc.
verb *bayto* ‘see (AT)’ can only select a patient NP, not a sentential complement, as the examples in (5.10) illustrate.

(5.9)  

a. **os-ʔo ayt-i si yosku.**  
  NAT.NFUT-1S.NOM see-LT T fish  
  ‘I saw/see/am seeing the fish.’  

b. **os-ʔo ayt-i ho [ mo tutpųtu to feuʔu ?o pasuya ].**  
  NAT.NFUT-1S.NOM see-LT LNK AT.NFUT AT.catch ACC pig T Pasuya  
  ‘I saw that Pasuya is catching a pig.’

(5.10)  

a. **mi-ʔo b-ayto to yosku.**  
  AT.NFUT-1S.T AT-see ACC fish  
  ‘I saw/see/am seeing a fish.’  

b. ***mi-ʔo b-ayto ho [ mo tutpųtu to feuʔuʔo pasuya ].**  
  AT.NFUT-1S.T AT-see LNK AT.NFUT AT.catch ACC pig T Pasuya

A few AT-marked CPT verbs are allowed to select a *ho*-marked full complement clause, however, such as *umnu* ‘good (AT)’ in (5.8d).

The *ho*-marked complement clauses act like independent clauses, as evidenced in the following respects. First, no argument in the *ho*-marked complement clause can be omitted.149

(5.11)  

a. **os-ʔo cohiv-i ho [ i-si eoɓak-a**  
  NAT.NFUT-1S.NOM know-LT LNK NAT.NFUT-3S.NOM beat-PT  
  ta hahocŋu *( na aʔo),).**  
  NOM man T 1S  
  ‘I know that the man beat me.’

b. **mo kaebu ?o mamespiŋi ho [ i-si ayt-i**  
  AT.NFUT AT.be.happy T woman LNK NAT.NFUT-3S.NOM see-LT  
  ta hahocŋu *( na tayni,i).**  
  NOM man T 3S  
  ‘The woman is happy that the man looks at her.’

---

149 The exceptions can be made only when these sentences occur in conversation, in which the embedded actor(s) is/are known by the context.
The embedded argument in the ho-marked complement clauses cannot be omitted even when it is coreferential with the matrix nominative NP, as in (5.11a), or with the matrix trigger NP, as in (5.11b).

Second, there is no trigger constraint in the ho-marked complement clauses.

(5.12) a. i-siₙ cohiv-i to amo₁ ho [ mo
NAT.NFUT-3S.NOM know-LT NOM father LNK AT.NFUT
tusbuku si oko ].
AT.pick.bamboo.shoot T child
‘Father knows that the child is picking bamboo shoots.’

b. i-siₙ cohiv-i to amo₁ ho [ i-si
NAT.NFUT-3S.NOM know-LT NOM father LNK NAT.NFUT-3S.T
tusbuk-a ta oko si s bunku ].
pick.bamboo.shoot-PT ACC child T bamboo.shoot
‘Father knows that that child is picking the bamboo shoots.’

The examples in (5.12) show that the ho-marked complement clauses can be either AT or PT-marked.

Third, there is no TAM constraint in the ho-marked complement clauses. The ho-marked full complement clauses can be marked for different TAMs, as (5.13) and (5.14) illustrate.

(5.13) a. os-ʔo tada-i ho [ *(moh-ta) tuptutu no zumu
NAT.NFUT-1S.NOM hear-LT LNK AT.NFUT-3S.T AT.catch ACC bird
ʔe pasuya ].
T Pasuya
‘I heard that Pasuya caught a bird (before).’

b. os-ʔo tada-i ho [ *(mi-ta) tuptutu no zumu
NAT.NFUT-1S.NOM hear-LT LNK AT.NFUT-3S.T AT.catch ACC bird
ʔe pasuya ].
T Pasuya
‘I heard that Pasuya caught/is catching a bird.’

c. os-ʔo tada-i ho [ *(te-ta) tuptutu no zumu
NAT.NFUT-1S.NOM hear-LT LNK FUT-3S.T AT.catch ACC bird
ʔe pasuya ].
T Pasuya
‘I heard that Pasuya will catch a bird.’
(5.14)  a. os-ʔo tāfu-i ho [ *(oh-ta) tutpuut-a
NAT.NFUT-1S.NOM hear-LT LNK NAT.NFUT-3S.NOM catch-PT
ta pasuya si zomū ].
NOM Pasuya T bird
‘I heard that Pasuya caught the bird.’

b. os-ʔo tāfu-i ho [ *(i-ta) tutpuut-a
NAT.NFUT-1S.NOM hear-LT LNK NAT.NFUT-3S.NOM catch-PT
ta pasuya si zomū ].
NOM Pasuya T bird
‘I heard that Pasuya caught/is catching the bird.’

c. os-ʔo tāfu-i ho [ *(te-ta) tutpuut-a
NAT.NFUT-1S.NOM hear-LT LNK FUT-3S.NOM catch-PT
ta pasuya si zomū ].
NOM Pasuya T bird
‘I heard that Pasuya will catch the bird.’

As introduced in Section 2.4.3, the TAM information is realized on the auxiliary verbs instead of the main verbs in Tsou. In each data set of (5.13) and (5.14), the embedded auxiliary verbs are inflected for remote past, near past/present, and future tense. The only constraint for the ho-marked full complement clauses is that they cannot be tenseless. All the auxiliary verbs in the ho-marked complement clauses are obligatory, as in (5.13) and (5.14).

The hocī-marked complementation refers to a complementation construction with a subjunctive full complement clause led by a linker hocī (or honci)\textsuperscript{150}. According to Hui-ju Huang (2003), the CPT predicates which select a hocī-marked complement are mostly non-factive verbs, such as predicates of fearing (e.g., smoyo ‘fear (AT)’ in (5.7b)),

\textsuperscript{150} The morphological complex ho-ci has a variant honci. Hui-ju Haung (2003:69) indicates that “hocī and honci are basically equivalents in meaning and function.” In my database, the clause linker ho-ci is used to mark a hypothetical event. The form hon-ci takes place only when the speaker is certain that the proposition will not happen. Consider:

(5.1)  a. i-ko tāuy-a [ hon-ci-ta aʔumtu m-uʔho no iski ].
NAT.NFUT-2S.NOM believe-PT LNK-SBJV-3S.T AT.really AT-shoot ACC eagle
‘You believe that he will really shoot an eagle?’
(Note: The speaker disbelieves that he can really shoot an eagle.)

b. i-ko tāuy-a [ ho te-ta aʔumtu m-uʔho no iski ].
NAT.NFUT-2S.NOM believe-PT LNK FUT-3S.T AT.really AT-shoot ACC eagle
‘You believe that he will really shoot an eagle.’
desirative predicates (e.g., taʔtai/taʔtaza [TP/TF] ‘hope (PT)’ in (5.15a)), and commentative predicates (e.g., kuzoa ‘dislike (PT)’ in (5.15b)).

(5.15) a. os-ʔo taʔtai-151 *(ho)-ci [ m-uchu ho hicma ].
NAT.NFUT-1S.NOM hope-PT LNK-SBJV AT-rain OBL the.next.day
‘I hope that (it) would rain tomorrow.’

b. i-taʔ kuzo-a ?e inoʔ *(ho)-ci [ 6-ayto
NAT.NFUT-3S.NOM dislike-PT T mother LNK-SBJV AT-see
no hicu ?e oko ].
ACC ghost T child
‘The mother dislikes that the child might see a ghost.’

However, the dividing line between factive and non-factive verbs is not clear, as Huei-ju Huang (2003) has observed. First, some CPT predicates can select either ho or hocilhonci as its clause linker depending on the intention/presupposition of the speakers. Compare (5.16a) with (5.16b):

(5.16) Huei-ju Huang (2003:67, glosses mine):

a. os-ʔo tote-a ho [ te esmi ?o paicu ].
NAT.NFUT-1S.NOM wait-PT LNK FUT AT.arrive T PaicU152
‘I am waiting for PaicU to come.’
(Note: The speaker is certain that PaicU will come.)

b. os-ʔo tote-a ho-ci [ esmi ?o paicu ].
NAT.NFUT-1S.NOM wait-PT LNK-SBJV AT.arrive T PaicU
‘I am waiting for PaicU to come.’
(Note: The speaker is not certain if PaicU will come.)

Huei-ju Huang (2003:67) notes that the proposition ho te esmi ?o paicu ‘PaicU will come’ in (5.16a) is with high possibility, but the speaker is uncertain if ho-ci esmi ?o paicu will happen in (5.16b).

151 The word taʔtai ‘hope (PT)’ belongs to the Tapang dialect. The correspondent form in Tfuya is taʔtaza. Li (1992:31) indicates that the sounds /z/ or /iz/ in Tfuya and Luhtu dialects correspond to /i/ (or /y/) or Ø in Tapang dialect.

152 Note that the capital “U” is the romanization spelling for the high back unround vowel /u/, such as “U” in ‘PaicU’ for the the female name /paicu/ in (5.16).
Second, some factive verbs can select a *hoci*-marked complement when the speaker is uncertain about the proposition, as in (5.17b).

(5.17) a. os-ʔo **cohiv-i ho** [ te tua ṭocya
NAT.NFUT-1S.NOM know-PT LNK FUT AT.pick tea(leave)
ta ṭo-ʔoko maytanʔe ].
T PL-child today
‘I know that the children will pick tea leaves today.’
(Note: The speaker is certain that the children will pick tea leaves today.)

b. os-ʔo **cohiv-i ho-ci** [ (*te) tua ṭocya
NAT.NFUT-1S.NOM know-PT LNK-SBJV FUT AT.pick tea(leave)
ta ṭo-ʔoko maytanʔe ].
T PL-child today
‘I know that the children might pick tea leaves today.’
(Note: The speaker is not certain if the children will pick tea leaves today.)

Nevertheless, some factive verbs are not allowed to select a *hoci*-marked complement due to the restriction of semantics, such as **asansana** ‘sure (PT)’ in (5.18).

(5.18) a. os-ʔo **asansan-a ho** [ te-hinʔi, ea-a
NAT.NFUT-1S.NOM certain-PT LNK FUT-3P.NOM get-PT
to yuʔafuynanai ṭo fuzu ].
NOM young.men T wild.pig
‘I am certain that the young men will get the wild pig.’

b. *os-ʔo **asansan-a ho-ci-hinʔi** [ ea-a
NAT.NFUT-1S.NOM certain-PT LNK-SBJV-3P.NOM get-PT
to yuʔafuynanai ṭo fuzu ].
NOM young.men T wild.pig

The syntactic properties of the *hoci*-marked subjunctives are mostly similar to the properties of the *ho*-marked indicatives in that both seem to act like independent clauses: they disallow a missing argument and there is no trigger constraint on the complement predicates. Still, the *hoci*-marked subjectives differ from the *ho*-marked indicatives mainly in their coding of TAM information on their verbal morphology. The predicates of the *hoci*-marked complements cannot select the full range of TAMs. The predicates in the *hoci*-marked subjunctives must remain unmarked for the tense/aspect (i.e., they occur without an auxiliary verb), as in (5.19a), or be inflected for remote past tense, as in (5.20).
(5.19)  a. os-ʔo tauyv-a ho-ci [(*mo)/(*te) m-uʔchu
NAT.NFUT-1S.NOM believe-PT LNK-SBJV AT.NFUT/FUT AT-rain
maytanʔe ].
now/today
‘I believe that (it) would rain now/will rain today.’
(Note: the speaker is not certain if it will rain today.)

b. os-ʔo tauyv-a ho [ *(mo)/*(te) m-uʔchu maytanʔe ].
NAT-1S.NOM believe-PT LNK AT.NFUT/FUT AT-rain now/today
‘I believe that (it) is raining now/will rain today.’
(Note: the speaker is certain that it is raining now/will rain today.)

(5.20) Counterfactual/Subjunctive (conditional):

(5.21) os-ʔo kuzo-a [ ho-ci-ta ꞌi tutpuutu
NAT.NFUT-1S.NOM dislike-PT LNK-SBJV-3S.T AT.catch
to fko ꞌe oko-ʔu ꞌi ].
ACC snake T child-1S.POSS
‘I dislike that my child would catch a snake.’

When the subjunctive predicate occurs without an auxiliary verb, its interpretation is neutral in that it can have a present or future tense interpretation, as in (5.19a). On the contrary, the TAM of the auxiliary verbs cannot be omitted in the ho-marked clausal complements, as in (5.19b).

Note that the coreferential third person pronoun of the embedded clause, such as -ta ‘he (T)’ in (5.21), attaches to the morphological complex hoci when the embedded predicate is not preceded by any auxiliary verb. Consider:

(5.20) Os-ʔo tataʔi-a ho-ci [ moh-ta m-umʔu
NAT.NFUT-1S.NOM wish-PT LNK-SBJV AT.NFUT-3S.T AT-plant
to wasavi ].
ACC wasabi
‘I wish that he had planted wasabi.’

When the embedded predicate occurs with a remote-past auxiliary verb, it is distinct from the past indicative correspondence in that the subjunctive refers to a counter-factual or hypothetical event in the past (cf. Huei-ju Huang 2003:67). In (5.20) the hoci-marked subjunctive denotes a counter-factual event, marked by the past auxiliary verb moh. The counter-factual interpretation is not inherent to moh or other past tense auxiliary verbs.
For instance, the *ho*-marked indicative in (5.22) is also preceded by the same remote past auxiliary verb *moh*. However, it cannot be interpreted as a counter-factual event.

(5.22) Indicative correspondence of (5.20):
\[
\text{os-ʔo tataʔi-a } \text{ho} [\text{moh-ta } \text{m-umʔu} \text{ to wasavi }].
\]
\[
\text{NAT.NFUT-1S.NOM } \text{envy-PT } \text{LNK } \text{AT.NFUT-3S.T} \text{ AT-plant ACC wasabi}
\]
‘I envy that he planted wasabi (before).’

The indicative-subjunctive distinction between (5.20) and (5.22) is also reflected in the two different interpretations of the verb *tataʔia*—‘wish’ in (5.22) and ‘envy’ in (5.20).

5.1.1.2 Identification
The goal of this section is to identify the syntactic category of the clause linker *ho* used with full complement clauses. The complement clause linker *ho* is homophonous with the coordinating conjunction (cf. Tung 1964; Szakos 1994; Zeitoun 2000c; Lin 2002; Huei-ju Huang 2010; and others). Accordingly, there are two possibilities for the clause linker *ho*—a coordinating conjunction and a complementizer.

In Tsou, the coordinating conjunction *ho* conjoins two equivalent parts of speech, such as two nouns, two verbs, etc (Ya-yin Chang 1998). For example:

(5.23) a. NP ho NP:
\[
\text{mi-mia autʔucu ta } \eta iau \ \text{*(ho) avʔu}.
\]
\[
\text{AT.NFUT-1P.EXCL.T AT-keep ACC cat CONJ dog}
\]
‘We keep cats and dogs.’

b. VP ho VP:
\[
\text{mo coeconu *(ho) ɓ-onu ta yosku } \text{ʔe habocu}.
\]
\[
\text{AT.NFUT AT.walk CONJ AT-eat ACC fish T man}
\]
‘The man is walking and eating fish.’

The coordinating conjunction *ho* can also connect two clauses which form a time-sequence (or cause-effect) relationship, as in (5.24).
In (5.24) the two clauses linked by ho cannot be exchanged. The semantics of (5.24b) is not comprehensible since the event ‘he waters flowers’ can never happen before “he uses water in a water tank” in the real world.

The coordinating conjunction ho cannot link two parallel clauses, i.e., two clauses denoting two simultaneous events.

The example (5.25a) shows that the coordinating conjunction ho cannot conjoin two clauses if the simultaneous reading is intended. Note that when ho is present, as in (5.25b), the clause following ho must be interpreted as an adverbial subordinate clause. That is, the linker ho in (5.25b) is not a coordinating conjunction but a subordinator.

It should be noted that the coordinating conjunction ho is obligatory in Tsou. Even when connecting more than two constituents, none of the ho’s can be omitted, as in (5.26).

153 The symbol # is used to indicate semantically infelicitous sentences.
Based on the syntactic properties of the coordinating conjunction *ho* introduced above, let us examine if the clause linker *ho* in question acts like the coordinating conjunction *ho*.

First, the conjoined clauses linked by the coordinating conjunction *ho* cannot be exchanged since the order of the two clauses implies a time-sequence and cause-effect relationship.

The order of the matrix-subordinate clauses in (5.27a) cannot be changed since the sentence with the reverse order, as in (5.28), can no longer be interpreted as a complementation construction. Rather, (5.28) must be interpreted as a coordinate structure.155

---

154 The obligatoriness of the coordinating conjunction is also found in Mayrinax Atayal. As discussed in Section 4.1.2.2, the Mayrinax coordinating conjunction *ru*? is also obligatory.  
155 Because of the homophony between the coordinating conjunction *ho* and complement clause linker *ho*, the complex sentences with a *ho*-marked clause per se are structurally ambiguous in Tsou. A *ho*-marked complementation sentence can be mistaken as a coordinate structure when the matrix and subordinate clauses accidentally can be interpreted as having a time sequence or cause-effect relationship. But the chances are rare. In addition, the structural ambiguity between the *ho*-marked coordination and *ho*-marked complementation can be removed by examining a pragmatic/semantic constraint of time sequence (or cause-effect relationship) on Tsou coordination. By applying the pragmatic/semantic constraint, the coordination interpretation of (5.27b) is impossible since the first event ‘I hear’ never occurs before the second event ‘he is singing’. Example (5.28) with the exchanged clauses is not a complementation construction since the verb *pasunayno* ‘sing (AT)’ is not a CPT predicate. Therefore, the clause linker *ho* in (5.27) does not behave like the coordinating conjunction *ho*. 

---
Second, the complement clause linker *ho* is optional, while the coordinating conjunction *ho* is obligatory. If the complement clause linker *ho* were the coordinating conjunction *ho*, then it should also be obligatory. As introduced in Section 5.1.1.1, the complement clause linker *ho* can be omitted in almost all cases except under one condition. That is, the complement clause linker *ho* cannot be optional when it is a sub-part of the subjunctive clause linker *ho* (or *honci*). The optionality of the clause linker *ho* also suggests that it be not the coordinating conjunction *ho*.

Third, *wh*-extraction test can be used to examine if the *ho*-marked complementation in question is a coordinate structure. According to Ross’s (1967) Coordinate Structure Constraint (CSC), a *wh*-element cannot be moved out of its conjunct in a coordinating construction. Before examining if the CSC is observed in the *ho*-marked complementation, a concise introduction to Tsou nominal interrogatives is necessary. The nominal interrogatives in Tsou can be divided into two types: *wh*-in-situ questions and *wh*-questions in pseudo-clefts (cf. Ya-yin Chang 1998). In the *wh*-in-situ questions, the *wh*-nominal, such as *cuma* ‘what’ in (5.29b), occurs in the same position as its declarative counterpart, such as *wasavi* ‘wasabi’ in (5.29a).

\[
\begin{align*}
\text{(5.29) a.} & \quad \text{mi-ko m-um?u no *wasavi* maytan?e.} \\
& \quad \text{AT.NFUT-2S.T AT-plant ACC wasabi today(now) ‘You planted/plant wasabi today.’ or ‘You are planting wasabi now.’} \\
\text{b.} & \quad \text{mi-ko m-um?u no *cuma* maytan?e ?} \\
& \quad \text{AT.NFUT-2S.T AT-plant ACC what today(now) ‘What do/did you plant today?’ or ‘What are you planting now?’} \\
& \quad \text{(lit. ‘You planted/plant what today?’ or ‘You are planting what now?’)}
\end{align*}
\]

According to Ya-yin Chang (1998:92), *wh*-words cannot remain in situ if they are used as the trigger argument, such as *sia* ‘who’ in (5.30).

\[
\begin{align*}
\text{(5.30) Ya-yin Chang (1998:92; glosses mine):} & \quad *\text{mo eothako ta mo?o na *sia* ?} . \\
& \quad \text{AT.NFUT AT-hit ACC Mo’o T who} \\
& \quad \text{Intended: ‘Who hit Mo’o?’}
\end{align*}
\]

As for the pseudo-cleft questions in Tsou, the nominal *wh*-word is typically located in the predicate position of an equational sentence.
(5.31)  a. [(zou) sia_i] [ ?o mo tutp\u2013utu ta fkoi ]?
     PRED who T AT.NFUT catch AT ACC snake
     ‘Who is (the person) that is catching the snake?’

     b. *[ (zou) sia_i] [ ?o i-ta tutp\u2013ut-a si fkoi ]?
     PRED who T NAT.NFUT-3S.T catch-PT T snake

The structure of (5.31) can be schematized as an “NP(predicate)-NP(trigger)” equational sentence. In (5.31), the wh-word sia ‘who’ is a predicate NP, while the rest of the sentence is turned into a headless relative clause and occupies the trigger position, as marked by a trigger marker ?o. Note that the gap in the pseudo-cleft constructions (including the wh-questions in pseudo-clefts) is limited to the embedded trigger argument, as shown in (5.31).\footnote{156}

Applying Ross’s (1967) CSC, let us examine if the wh-element can be extracted out of the ho-marked complement clauses in Tsou. If the clause linker ho is the coordinating conjunction ho, the wh-extraction should not be allowed. Consider:

(5.32)  i-ko cohiv-i (ho) [ i-si ?a?usin-i 
          NAT.NFUT-2S.NOM know-LT LNK NAT.NFUT-3S.NOM attack-LT 
          ta fuzu ?e oko ].
          NOM wild.pig T child
     ‘You know that the wild pig attacked the child.’

(5.33)  a. i-ko cohiv-i (*ho) [ sia_i na [ i-si ?a?usin-i 
          NAT.NFUT-2S.NOM know-LT LNK who T NAT.NFUT-3S.NOM attack-LT 
          no fuzu \Delta_i ] ]
          NOM wild.pig
     ‘You know who(m) a wild pig attacked.’
     (lit. ‘You know who is (the one) that a wild pig attacked?’)

b. (zou) sia_i [ co os-ko cohiv-i __i 
          EMP who T NAT.NFUT-2S.NOM know-LT 
          [ ho i-si ?a?usin-i no fuzu \Delta_i ] ]
          LNK NAT.NFUT-3S.NOM attack-LT NOM wild.pig
     ‘Who(m) do you know that a wild pig attacked?’
     (lit. ‘Who(m) is (the one) that you know that a wild pig attacked?’)

\footnote{156} It is assumed that the gap in the pseudo-cleft construction is a trace of the movement of a null operator in the generative framework (Ya-yin Chang 1998).
The examples in (5.33) show that sia ‘who’ can occur in the predicate of the embedded pseudo-cleft, as in (5.33a), or move into a matrix predicate outside the pseudo-cleft, as in (5.33b). The wh-extraction test suggests that the clause linker ho cannot be a coordinating conjunction. In addition, the first two tests also show that the clause linker does not behave like a coordinating conjunction. Thus, the clause linker ho is better analyzed as a complementizer.

Despite the fact that the syntactic properties of the complementizer ho do not resemble those of the coordinating conjunction, the homophony suggests that the complementizer ho might have its origin in the coordinating conjunction. The coordinating conjunction ho links two equivalent constituents except for two conjoined clauses; on the other hand, the clause linker ho is normally interpreted as a subordinator (including complementizer) when it appears between two clauses.\(^{157}\) It is reasonable to infer that the coordinating conjunction ho conjoining two clauses has been reanalyzed as a complementizer for a complement clause or a subordinator for an adverbial clause in its historical development. The finding here supports the process of “conjunctive reduction” proposed by Tsai (2007). Tsai (2007) proposes that there are two directions for the conjunctive reduction (i.e., reanalysis of conjunction) based on the evidence from infinitive complements of manner predicate\(^{158}\) and adverbial subordinate clauses (including instrumental, locative, and purposive expressions) in three representative languages (Tsou, Amis, and Squilq Atayal). In one direction, the coordinator may evolve into a modifier marker and turn the first conjunct into an adverbial element. In the other direction, the coordinator may become a complementizer which is followed by an infinitive complement or an adverbial adjunct. Our Tsou data support the latter pattern, but with a finite (tensed) complement.

\(^{157}\) As introduced earlier in this section, the only exception for the subordinator interpretation of the clause linker ho is when the conjoined clauses constitute a time-sequence or cause-effect relationship. In cases like this, the clause linker ho can be interpreted as a coordinating conjunction.

\(^{158}\) The infinitive complement of manner predicates is mostly known as adverbial verb construction in the existing literature (Yung-li Chang 2006b, 2009, 2010; Yeh & Huang 2009). A wide range of adverbial concepts in Formosan languages, such as sentential adverbs and degree/quantifier words, are expressed in the forms of verbs (cf. Starosta 1988). In Tsou, the adverbial expression and their lexical verbs are merged into a verbal complex without an intervening linker, which constitutes the so-called adverbial verb construction (AVC).
5.1.2 Ø-marked complementation

The Ø-marked complementation is similar to the ho-marked complementation in that they both involve full complement clauses. The key difference is that the full complement clauses in the former cannot be preceded by an overt linker, such as holhoci(honci), as shown in (5.34). Following Lin (2002), the sentences in (5.34) are called Ø-marked complementation.

(5.34) a. i-ta$_t$ eainc-a (*ho), “te-ʔøiŋj uh ne siaʔfunu".  
NAT.NFUT-3S.NOM say-PT LNK FUT-1S.T AT.go OBL Shizi.Rd$^{159}$  
‘He said, “I will go to Shizi Road.”’

   b. osʔo tuocos-i (*ho), “sia na mo eusvtu ?”  
NAT.NFUT-1S.NOM ask-LT LNK who T AT.NFUT AT.tell  
‘I asked, “Who told (him)?”’

   c. os-ko taʔunano (*ho) [ mo eonhu si mamespiŋi ].  
NAT.NFUT-2S.NOM think.PT LNK AT.NFUT AT.beautiful T girl  
‘You thought that the girl was beautiful.’

Among the verbs which select a full complement clause, few verbs subcategorize for a Ø-marked full complement clause, while most of the verbs select a ho-marked full complement clause (Lin 2002). The CPT verbs of the Ø-marked complementation include eainca ‘say (PT)’ in (5.34a), tuocos ‘ask (LT)’ in (5.34b), and taʔunano ‘think (PT)’$^{160}$ in (5.34c).

The complement clauses selected by the utterance predicates eainca ‘say (PT)’ and tuocos ‘ask (LT)’ are mostly direct quotes, as in (5.35) and (5.36).

$^{159}$ The Tsou word for the place name ‘Shizi Road’ (十字路) is Siaʔfunu. This place was not a village of Tsou. Its meaning is ‘Cross Road’. This new village was formed because the Empire of Japan set up a train station in this village in early 1900. Because the railroad and the old road formed a cross, this intersection place was named ‘cross road’.

$^{160}$ The cognition verb taʔunano (or taʔunan) can be interpreted as ‘think’, ‘presume’ or ‘doubt’ in different contexts. In order to avoid confusion, ‘think’ is taken as a general translation for taʔunano (or taʔunan) in this dissertation. The PT form of the verb ‘think’ can be either taʔunan or taʔunan. The PT form taʔanano ‘think (PT)’ is frequently used. In contrast, taʔanana is limited in its usage though its form looks more like a regular PT form which is usually suffixed with the PT marker -a in Tsou. It is very likely that taʔanana was the original PT form. However, it is a suppletive form of the PT verb. Therefore, taʔanano ‘think (PT)’ inevitably has undergone a morphological reanalysis and has a regular alternative taʔanan-a ‘think (PT)’. This may account for why taʔanana is restricted in its usage. The old informants tend to use taʔunano rather than taʔunan.
When the embedded actor is a third person, it cannot be coreferential with the identical third person actor of the matrix clause, such as -ta, in (5.36).

Like independent clauses, the direct quotes subcategorized for by the utterance verbs are not subject to any trigger/TAM constraint. Consider:

(5.37) a. os-ko eainc-a Ø, “mo m-osi to yusu
   NAT.NFUT-2S.NOM say-PT LNK AT.NFUT AT-put ACC clothes
   ta pāŋka ?o ino “.
   OBL table T mother
   ‘You said, “Mother put clothes on the table.”’

   b. os-ko eainc-a Ø, “i-si si-a
   NAT.NFUT-2S.NOM say-PT LNK NAT.NFUT-3S.NOM put-PT
   ta ino, ta pāŋka si yusu”.
   NOM mother OBL table T clothes
   ‘You said, “Mother put the clothes on the table.”’

The direct quotes in (5.37) can be either AT-marked or NAT-marked. In addition, the direct quotes are free in their selection of TAMs, as in (5.38).

(5.38) a. i-ta_i eainc-a ta ak?i_i Ø, “mo cohma
   NAT.NFUT-3S.NOM say-PT NOM grandfather LNK AT.NFUT AT.water
   ta ṃuvnu ?e oko “.
   ACC flower T child
   ‘Grandfather says, “The child is watering the flowers.’

   b. i-ta_i eainc-a ta ak?i_i Ø, “moso cohma
   NAT.NFUT-3S.NOM say-PT NOM grandfather LNK AT.NFUT AT.water
   ta ṃuvnu ?e oko ne hucma “.
   ACC flower T child OBL the.previous.day
   ‘Grandfather says, “The child watered the flowers yesterday.’
At first glance, the Ø-marked complementation with the cognition verb \(\text{ta'?unana}\) ‘think’ seems to be similar with the \(hoci\)-marked complementation in that the verb \(\text{ta'?unano}\) is a non-factive verb which selects a hypothetical/counter-factual proposition to express a judgment, conjecture, opinion, or dream. The examples are shown in (5.39):

\[
\text{(5.39) a.} \quad \begin{array}{l}
\text{i-si } \text{ta'?unano (}*ho)/(hoci) [ mi-?o u} \\
\text{NAT.NFUT-3S.NOM think.PT LNK/LNK.SBJV AT.NFUT-1S.T AT.go} \\
\text{ne hosa ne saviki } \\
\text{OBL village POSS Shanmei} \\
\text{‘He thought that I went to the village of Shanmei.’ (Note: But I did not.)}
\end{array}
\]

\[
\text{b.} \quad \begin{array}{l}
\text{os-?o } \text{ta'?unano (}*ho)/(hoci) [ mi-ko na?no} \\
\text{NAT.NFUT-1S.NOM think.PT LNK/LNK.SBJV AT.NFUT-2S.T AT.very} \\
\text{ana?o } \\
\text{AT.conscientious} \\
\text{‘I think that you are very conscientious.’}
\end{array}
\]

However, the Ø-marked complements clauses in (5.39) cannot be preceded by \(hol/hoci\) though their semantics are similar to the \(ho(ci)\)-marked complements. Furthermore, the TAM of Ø-marked complements are encoded differently from that of the \(hoci\)-marked subjunctives. As discussed in Section 5.1.1.1, the \(hoci\)-marked subjunctives (or counter-factual) are preceded by a remote past auxiliary verb (e.g., \(moh\)). However, the Ø-marked complements selected by the cognition verb \(\text{ta'?unano}\) ‘think’ can be inflected for different TAMs as the \(ho\)-marked indicatives, as shown in (5.40):

\[
\text{(5.40) a.} \quad \begin{array}{l}
\text{i-si } \text{ta'?unano } \text{Ø [ mo-n?a m-ueŋu} \\
\text{NAT.NFUT-3S.NOM think.PT LNK AT.NFUT-PROG AT.take.off} \\
\text{ta yusu ?e mameoi } \\
\text{ACC clothes T old.man} \\
\text{‘He thinks that the old man is taking off the clothes.’}
\end{array}
\]
b. i-si taʔunano Ø [ moh-cu m-ueŋu \\
    NAT.NFUT-3S.NOM think.PT LNK AT.NFUT-ASP AT.take.off \\
    ta yusu ?e mameoi ]. \\
    ACC clothes T old.man \\
    ‘He thinks that the old man has taken off the clothes.’

c. i-si taʔunano Ø [ te m-ueŋu ta yusu \\
    NAT.NFUT-3S.NOM think.PT LNK FUT AT.take.off ACC clothes \\
    ?e mameoi ]. \\
    T old.man \\
    ‘He thinks that the old man will take off the clothes.’

In addition to the TAM coding, the Ø-marked complement clauses selected by \( taʔunano \) display the same properties as the ho-marked indicatives in Tsou. For instance, they are free in their trigger selection, as shown in (5.41).

(5.41) a. i-mia taʔunano Ø [ te tufku \\
    NAT.NFUT-1P.EXCL.NOM think.PT LNK FUT AT.wash.clothes \\
    si mameoi ]. \\
    T old.man \\
    ‘We think that the old man will wash clothes.’

b. i-si taʔunano ta ino Ø [ i-si ana \\
    NAT.NFUT-3S.NOM think.PT NOM mother LNK NAT.NFUT-3S eat.PT \\
    no buhci to tonʔu ]. \\
    NOM mouse T millet \\
    ‘Mother thinks that a certain mouse is eating millet.’

Note that the structure of the Ø-marked complementation is not SVC, which is mainly evidenced by the fact that the auxiliary verb of the embedded verb is obligatory. That existence of the embedded auxiliary shows that Ø-marked complementation has two TAM domains. It is a subordinating structure of a complement type. Hence, we assume that there is a null complementizer in the Ø-marked complementation.

### 5.2 Defective embedded clauses

In Tsou, the defective embedded clauses involving complementation can be divided into three types—patient control, apparent patient control and “raising-to-trigger”. The complement clauses in these constructions have a missing argument. It will be shown
below that the empty category in the patient control and apparent patient control constructions is a base-generated null argument (that is, PRO) coreferential with the matrix argument, and the empty category in the “RtoT” is a result of movement of a null operator (that is, OP). The patient control, apparent patient control and “RtoT” construction will be discussed in Section 5.2.1, Section 5.2.2, and Section 5.2.3.

Tsou is distinct from other Formosan languages in that argument sharing involves two different syntactic operations—serial verb constructions and control constructions. Other Formosan languages (e.g., Amis and Mayrinax Atayal) have only one syntactic operation involving argument sharing, that is, control. As will be discussed in Section 5.3, the serial verb construction in Tsou is used when the actor of the first verb is coreferential with the actor/patient of the second verb.

5.2.1 Patient control construction

In Tsou patient control, the patient of the first verb is coreferential with the actor of the second verb, as shown in (5.42).

(5.42) Patient control:

```
osa-ta pahsusuvt-i ?e oko-i (ho) [ m-um?u
NAT.NFUT-1S.NOM advise-LT T child LNK AT.NFUT-plant
ta ñuñu ña tayni].
ACC flower T 3S
I advised the child to plant flowers.
```

The patient control construction in Tsou is a complex sentence in which the patient of the matrix verb controls the reference of the missing actor of the embedded verb. The matrix and embedded clauses of the patient control are connected by an optional linker ho, as in (5.42). In (5.42), the patient of the matrix verb (i.e., ?e oko ‘the child (T)’) is coreferential with the missing actor of the embedded verb. It is worthy of note that patient control sentences like (5.42) are not commonly attested in Tsou. In my database, there are only two manipulative verbs, pahsusuvti ‘advise (LT)’ and skuna ‘ask (PT)’, which occur in the patient control construction. As will see in Section 5.2.2, most manipulative
verbs appear in the apparent patient control. The limited application of patient control in Tsou suggests that this may be a new development.

The missing argument in the patient control construction must be a trigger in the embedded clause. For example:

\[(5.43)\]

\begin{align*}
\text{a.} & \quad \text{i-si} \quad \text{skun-a} \quad \text{to} \quad \text{amo} \quad \text{si} \quad \text{?o-?oko}_0 \quad \text{ho} \quad [\text{yaa} \\
& \quad \text{NAT.NFUT-3S.NOM} \quad \text{ask-PT} \quad \text{NOM} \quad \text{father} \quad \text{T} \quad \text{PL-child} \quad \text{LNK} \quad \text{AT-get} \\
& \quad \text{yosku} \quad \Delta_i ].
\end{align*}

The patient control sentence is grammatical when the controlee is a trigger argument in the embedded clause, as in (5.43a). Example (5.43b) is ungrammatical since the embedded clause contains an overt trigger NP \text{?e yosku} ‘the fish (T)’. The trigger-only constraint on the controlee is similar to the subject-only constraint on the null argument of the control construction in other languages, say English. This suggests that the trigger NP in Tsou behave like the notion “subject” in other languages (e.g., English).\textsuperscript{161}

In addition to the trigger-only constraint, the controlee in the patient control construction must also be an actor in Tsou.

\[(5.44)\]

\begin{align*}
\text{a.} & \quad \text{os-?o} \quad \text{skun-a} \quad \text{si} \quad \text{ohayva}_i \quad \text{ho} \quad [\text{eabako} \\
& \quad \text{NAT.NFUT-1S.NOM} \quad \text{ask-PT} \quad \text{T} \quad \text{older.sibling} \quad \text{LNK} \quad \text{AT.beat} \\
& \quad \text{ta} \quad \text{oko} \quad \Delta_i ].
\end{align*}

The term ‘subject’ is avoided in this study since both trigger and actor demonstrate subject properties in Formosan languages, including Tsou (Ya-yin Chang 2004).
As illustrated in (5.44), the controlee can only be the actor of the embedded clause. Example (5.44b) is ill-formed since the controlee is the patient. Based on the above, the controlee in the Tsou patient control need be an actor in the embedded trigger position. In accordance with this requirement, the embedded predicate of the patient control is required to be AT-marked, as shown in (5.43)–(5.44).

The embedded verbs of the Tsou patient control can be only inflected for an AT marker (i.e., without an auxiliary verb), such as m-umʔu ‘plant (AT)’ in (5.45a), or preceded by a future tense auxiliary verb, such as te mumiʔu ‘will plant (AT)’ in (5.45b).

\[
(5.45) \quad \text{Patient control:}
\]
\[\begin{align*}
a. \quad \text{osʔo} & \quad \text{pahsusuvt-i} \quad \text{ʔe} \quad \text{o ko}_1 \quad (\text{ho}) \quad [ \text{m-umʔu} \\
& \quad \text{NAT.NFUT-1S.NOM} \quad \text{advise-LT} \quad \text{T} \quad \text{child} \quad \text{LNK} \quad \text{AT-plant} \\
& \quad \text{ta} \quad \text{bu} \nu \nu \quad \Delta_i ]. \\
& \quad \text{ACC} \quad \text{flower} \quad \text{‘I advised the child to plant flowers.}
\end{align*}\]

\[\begin{align*}
b. \quad \text{osʔo} & \quad \text{pahsusuvt-i} \quad \text{ʔe} \quad \text{o ko}_1 \quad (\text{ho}) \quad [ \text{te} \quad \text{m-umʔu} \\
& \quad \text{NAT.NFUT-1S.NOM} \quad \text{advise-LT} \quad \text{T} \quad \text{child} \quad \text{LNK} \quad \text{FUT} \quad \text{AT-plant} \\
& \quad \text{ta} \quad \text{bu} \nu \nu \quad \Delta_i ]. \\
& \quad \text{ACC} \quad \text{flower} \quad \text{‘I advised the child to plant flowers (later).}
\end{align*}\]

The limited TAM of the complement clauses suggests that the complement clauses of the patient control act like the non-finite clauses of patient control in other languages (e.g., English). It has also been reported that the complement clauses of control are not restricted to infinitives but can also be subjunctives in other languages, such as Albanian (Landau 2004), Hebrew (Landau 2004), Japanese (Uchibori 2000), and Persian (Hashemipour 1989 and Ghomeshi 2001).

The patient control cannot be confused with an SVC since it has an overt clause linker ho which signals a grammatical relation (i.e., coordination and subordination). In addition, the fact that the embedded verbs of patient control can be inflected for future tense also suggests that the construction in question be a bi-clausal construction with two TAM domains.
5.2.2 Apparent patient control construction

The identifying features of the apparent patient control construction in Tsou are that the embedded verb is causativized and that the embedded clause contains two null arguments. The embedded verb of apparent patient control is prefixed with a causative marker $p(o)a-$, such as $p(o)a-mum?u$ ‘plant (AT.CAUS)’ in (5.46). As illustrated in (5.46), there are two null arguments: (i) embedded null actor coreferential with the matrix actor, as indicated by “$\Delta_i$”; and (ii) embedded null patient coreferential with the matrix patient, as indicated by “$\Delta_j$”

(5.46) Apparent patient control:

```
( ho ) [ p(o)a-m-um?u
NAT.NFUT-1.S.NOM advise-LT T child LNK CAUS-AT-plant

os-ʔo, pahsusuvt-i ?e oko, ta ʔuvnu Δj Δ/* tayni ].
ACC flower 3s
‘I advised the child to cause (him) to plant the flowers.
```

(5.42) Patient control: (Repeated)

```
( ho ) [ m-um?u
NAT.NFUT-1.S.NOM advise-LT T child LNK AT-plant

os-ʔo pahsusuvt-i ?eoko, ta ʔuvnu Δ/(* tayni ).
ACC flower 3s
‘I advised the child to plant the flowers.
```

Compared to the repeated patient control example (5.42), there is some change of the coreferential relationship among the arguments. Instead of the matrix patient, it is the matrix actor -ʔo ‘I (Nom)’ that controls the reference of the missing actor (or causer) of the causativized complement clause, as indicated by “$\Delta_j$” in (5.46). Accordingly, the embedded missing patient (that is, the embedded actor of the (5.42)) is coreferential with the matrix patient ?e oko ‘the child (T)’ in (5.46). The correlational changes of the arguments in (5.42) and (5.46) are illustrated in Table 5.1.
As shown in Table 5.1, the covert actor (or causer as indicated by $\Delta_j$) of the apparent patient control is obligatorily coreferential with the matrix actor. Meanwhile, the embedded covert actor of patient control (indicated by $\Delta_i$) which corresponds to the embedded covert patient is coreferential with the matrix patient in the apparent patient control. Note that the embedded missing actors in both patient control and apparent patient control cannot be replaced with an overt pronoun, such as *tayni* in (5.42) and (5.46).

Chang & Tsai (2001) attribute the coreferential relationship of the apparent patient control like (5.46) to the phenomenon “actor sensitivity”, which is attested in other Formosan languages, such as Kavalan. Actor sensitivity refers to a constraint in which actor is required to outrank patient and other arguments in the same clause. If a language has that constraint, the embedded verb of the patient control needs to be causativized in order to obtain the intended semantic/cognitive structure. For example, Kavalan does not allow “object control” (that is, patient control in our terminology) and requires obligatory causativization of the embedded verb, as shown in (5.47).

(5.47) Kavalan: Chang & Tsai (2001:3; glosses mine)

a. pawyat-an-na$_i$ ni abas$_i$ aiku$_j$ [ pa-$\text{ʔtuŋ}$ tu taquq $\Delta_j$].
   \[ \text{force-LT-3S.NOM NOM Abas I.S.T CAUS-kill ACC chicken} \]
   ‘Abas forced *me* such that she caused me to kill a chicken.’

b. ?? pawyat-an-na$_i$ ni abas$_i$ aiku$_j$ [ ma-$\text{ʔtuŋ}$ tu taquq $\Delta_{i*j}$].
   \[ \text{force-LT-3S.NOM NOM Abas I.S.T AT-kill ACC chicken} \]
   ‘Abas forced *me* (for her) to kill a chicken.’
   Intended: ‘Abas forced *me* such that I killed a chicken.’

Unlike Kavalan, the actor sensitivity is not required in Tsou, as patient control is also permissible, as shown in (5.42).
Chang & Tsai’s (2001) account seems to suggest that there is a derviational relationship between the patient control and apparent patient control constructions. This is supported by the fact that both constructions have the same complement-taking (CPT) verbs, such as *pahsusuvti* ‘advise (LT)’ in (5.42) and (5.46). In Tsou, the CPT verbs for the patient control and apparent patient control are manipulative verbs. The manipulative verbs normally appear in the patient control constructions in other Formosan languages, such as Amis and Mayrinax Atayal. In my corpus, most of the Tsou manipulative verbs appear in the apparent patient control since only two CPT verbs—*pahsusuvti* ‘advise (LT)’ and *skuna* ‘ask (PT)’—have the patient control pattern. However, it is not necessary to assume that apparent patient control is the secondary development. It can be the other way around: the patient control is the secondary development evolved from the apparent patient control. However, a conclusion cannot be reached here: it takes further study to figure out how causativization was formed in the historical development of Tsou and other Formosan languages. Thus, I leave this issue open for further study.

As introduced in Section 5.1.1.1, several manipulative verbs, such as *teommeni* ‘allow (BT)’ and *potani* ‘prevent (LT)’, do not appear in the patient control/apparent patient control constructions. Rather, they subcategorize for a *ho*-marked full complement clause (Zeitoun 2000c, Lin 2002 and Huei-ju Huang 2010). Such a phenomenon is also seen in Mayrinax Atayal in that some manipulative verbs subcategorize for a full complement clause instead of a defective complement clause (i.e., patient control). Actor sensitivity proposed by Chang & Tsai (2001) may be the reason why some of the manipulative verbs in Tsou and Mayrinax Atayal subcategorize for a full complement clause instead of occurring in a patient control and/or apparent control construction like other Formosan languages, such as Amis.

Compared to the rare usage of the patient control, the apparent patient control is commonly seen in Tsou. Most manipulative verbs appear in the apparent patient control, such as *eaho?a* ‘call (PT)’ in (5.48a), *skuna* ‘ask (PT)’ in (5.48b), and *pahsusuvti* ‘persuade (LT)’ in (5.48c).
The clause linker *ho* in the apparent patient control is usually dropped, though it is still allowed to occur, as in (5.48). Like the non-finite verbs of control in other languages, the TAM of the embedded causative verbs is unmarked for any TAM since no auxiliary verb (loaded with TAM information) precedes the causativized verb. That the causative verbs in the apparent patient control are unmarked for TAM seems to suggest that the relevant construction is like SVC. However, it cannot be analyzed as an instance of SVC as the existence of the optional clause linker *ho* indicates a grammatical relation of subordination for the two apparently juxtaposed verbs.

Like the patient control construction, there is an AT-only trigger constraint on the embedded verbs of the apparent patient control construction. The embedded verbs can be only AT-marked, as in (5.49).

162 The dropping of the clause linker *ho* suggests that there may be an on-going reanalysis of the apparent patient control as SVC. Despite of this, the apparent patient control cannot be treated as an instance of SVC since the two juxtaposed verbs of apparent patient control are still intervened by the optional linker *ho*, indicating a grammatical relation of subordination.
In addition, there is an NAT constraint on the matrix verb of the apparent patient control. Chang & Tsai (2001:9) indicate that the CPT verbs of the apparent patient control need be NAT-marked, as shown in (5.50).

(5.50) Chang & Tsai (2001:9; glosses mine):

a. i-?o  \textit{?ahuy} a p(o)a-6-onu na taini.  
\textsc{nat.nfut-1s.nom} force-\textsc{pt} \textsc{caus-at-eat} T 3\textsc{s}  
‘I force \textit{him} such that I cause him to eat.

b. *mi-?o \textit{?ahuy} taini p(o)a-6-onu.  
\textsc{at.nfut-1s.t} \textsc{at.force} 3\textsc{s} \textsc{caus-at-eat}

There are some structural variations in the apparent patient control construction. The matrix trigger NP of the apparent patient control is optionally postposed to the sentence-final position.

(5.51) a. i-si, skun-a ta mameoi i si \textit{?o-?oko}j (ho)  
\textsc{nat.nfut-3s.nom} ask-lt NOM old.man T PL-child LNK  
\textsc{[p(o)a-cohmo ta \textit{bu-buvnu} } \Delta_i \Delta_j \text{]}  
\textsc{caus-at.water} ACC PL-flower  
‘The old man asked \textit{the children} to cause (them) to water flowers.’

b. [ i-si, skun-a ta mameoi i ____ (ho) \textsc{[p(o)a-cohmo  
\textsc{nat.nfut-3s.nom} ask-lt NOM old.man LNK \textsc{caus-at.water}  
\textit{ta \textit{bu-buvnu} } \Delta_i \Delta_j ] si \textit{?o-?oko}i.  
\textsc{acc} PL-flower T PL-child  
‘The old man asked \textit{the children} to cause (them) to water flowers.’

c. [ i-si, skun-a ____ i ____ (\textit{ho}) \textsc{[p(o)a-cohmo  
\textsc{nat.nfut-3s.nom} ask-lt LNK \textsc{caus-at.water}  
\textit{ta \textit{bu-buvnu} } \Delta_i \Delta_j ] ta mameoi, si \textit{?o-?oko}j.  
\textsc{acc} PL-flower NOM old.man T PL-child  
‘The old man asked \textit{the children} to cause them to water the flowers.’

In the apparent patient control, the trigger NP \textit{si \textit{?o-?oko} ‘the children (T)’} occurs in the position right before the \textit{ho}-marked defective embedded clause, as in (5.51a), or appears in the sentence-final position, as in (5.51b). Note that the sentence-final position of the
apparent patient control like (5.51b) does not belong to the embedded clause. If the sentence-final position is within the embedded clause, (5.51b) should be ungrammatical since the sentence-final patient of the causative embedded AT verb should be accusative, such as ta ṭoʔoko ‘children (ACC)’. Therefore, the sentence-final position of the apparent patient control like (5.51b) needs to be analyzed as a position outside the matrix clause since the matrix trigger position is the final position of the matrix clause right before the ho-marked defective embedded clause, such as si ṭoʔoko in (5.51a).

The analysis that the sentence-final position is outside the matrix clause is supported by the fact that the matrix nominative NP can be also postposed to the sentence-final position, as shown in (5.51c). Note that when both nominative and trigger NPs are postposed as in (5.51c), the clause linker ho is not allowed to occur. Thus, (5.51c) does not behave like apparent patient control like (5.51b), in which only the trigger NP is postposed. This suggests that (5.51c) with the postposed trigger and nominative NPs is structurally different from (5.51b). It should be treated as an instance of SVC. It should be also noted that the clause linker ho tends to be dropped when a matrix NP is postposed to the sentence-final position, like (5.51b). This suggests that a process of reanalysis may be in progress from a bi-clausal construction of apparent patient control into a monoclusal SVC, in which (5.51b) represents a transitional stage and (5.51c), a completion stage.

One important issue related to the apparent patient control is whether it should be analyzed as an instance of actor control in Tsou. The construction in question contains two null arguments of the embedded clause: an actor gap that is coreferential with the matrix non-trigger actor and a patient gap that is coreferential with the matrix trigger patient. If the apparent patient control is a variant structure of actor control in Tsou, the controlee (that is, the big PRO\textsuperscript{163}) is the embedded actor coreferential with the matrix controller, whereas the patient gap is analyzed as a pro (that is, the small “pro”), which is an instance of pronoun dropping. If that is the case, the coreferential relationship of both arguments in (5.46) can be schematized as in (5.52).

\textsuperscript{163} The usage of PRO of the control constructions first appears in the Government and Binding theory (Chomsky 1981). The earliest analysis for the control construction is called “Equi NP deletion” in the period of transformational grammar (Rosenbaum 1967).
If the construction in question is an instance of actor control, the actor gap (as indicated by PRO) in (5.52) is the controlee whose reference is controlled by the matrix actor -ʔo ‘I (Nom)’. The actor control analysis for Tsou apparent patient control is compatible with the two facts of control constructions in Amis and Mayrinax Atayal: (i) the actor controller can be nominative when there is already an overt trigger NP in the matrix clause; and (ii) the actor gap cannot be replaced with an overt pronoun.

Since the actor gap exhibits the properties of PRO, the patient gap must be a null argument other than PRO. It is plausible to propose that the patient gap of the apparent patient control is a pro, a phonetically null pronoun which is permitted when its reference is retrievable from the context. If that is the case, it should be possible: (i) to replace the patient gap with an overt pronoun (and the sentence is grammatical with the same meaning); and (ii) for the null patient to have a disjoint reference.

The example in (5.53) shows that the patient gap in (5.52) can be filled with a third person pronoun tayni ‘him (ACC)’. In addition, the pronoun tayni in (5.53) can refer to either the matrix patient or a person known by the context.\(^{164}\) The two facts of the patient gap in apparent patient control meet the criteria of a pro.

\(^{164}\) However, my language consultants indicate that the case of disjoint reference is rare.
Note that it is rather common to drop the matrix patient in daily conversation when the person who receives the command or request is already known by context. That is, the matrix patient can also be a pro. For example:

\[(5.54)\]
\[
\begin{array}{llllll}
\text{i-si}_1 & \text{skun-a} & \text{to} & \text{ino-si}_1 & (\Delta_j) & (\text{ho}) \\
\text{NAT.NFUT-3S.NOM} & \text{ask-PT} & \text{NOM} & \text{mother-3S.POSS} & \text{LNK} \\
[ & \text{p(o)a-m-um?u} & \text{ta} & \text{fi?i} & \Delta_i & \Delta_j ].
\end{array}
\]

\[\text{CAUS-AT-plant} \quad \text{ACC} \quad \text{betal.nuts (tree)}\]

(a) ‘His mother asked (him) to cause (him) to plant (trees of) betal nuts.’
(b) ‘His mother asked (me/us) to cause (me/us) to plant (trees of) betal nuts.’
(c) ‘His mother asked (him/them) to cause (him/them) to plant (trees of) betal nuts.’

In daily conversation, the missing matrix patient in (5.54) is very likely to be: (a) the mother’s child; (b) the speaker (and the listeners); and (c) a person/persons pre-mentioned or referable in the context.

Based on the above discussion, the apparent patient control should be analyzed as an instance of actor control, as the actor gap and patient gap of the construction in question meet the syntactic properties of PRO and pro, respectively.

5.2.3 “Raising-to-trigger”

“Raising-to-trigger” (“RtoT”) involves a full complement-clause construction with a seemingly “raised” argument. It is commonly found in Formosan languages, including Amis, Mayrinax Atayal and Tsou. Consider the following examples in Tsou:

\[(5.55)\]
\[
\begin{array}{llllllll}
\text{os-ko} & \text{ayt-i} & \text{pe njau}_i & \text{ho} [ & \text{mo} & \text{m-eoba} & \text{ho} & \text{NAT.NFUT-2S.NOM} & \text{see-LT} & \text{T} & \text{cat} & \text{LNK} & \text{AT.NFUT} & \text{AT-chase} \\
\text{NAT.NFUT} & \text{AT-see} & \text{T} & \text{cat} & \text{LNK} & \text{AT.NFUT} & \text{AT-chase} & \text{ta} & \text{tokeuya} & \text{____i} ].
\end{array}
\]

\[\text{ACC} \quad \text{butterfly}\]

‘You see that the cat is chasing a butterfly.’
b. Non-“RtoT” correspondence:

```
bs-ko ayt-i ho [ mo m-eobanjo ta tokeuya
NAT.NFUT-2S.NOM see-LT LNK AT.NFUT AT-chase ACC butterfly
?e njau ].
T   cat
‘You see that the cat is chasing a butterfly.’
```

In (5.55a), the trigger NP ?e njau ‘the cat (T)’ in the ho-marked full complement clause is syntactically realized as a trigger NP in the matrix clause. However, the construction in question like (5.55a) is not an instance of raising, as defined in the Generative Grammar. I will get back to identify the structure of the “RtoT” shortly.

The “RtoT” in Tsou has the following syntactic properties. First, the “RtoT” is optional in the hol/hoci-marked complementation. The “RtoT” applies optionally to the trigger NP in the hol/hoci-marked full complement clauses when the matrix clause lacks a trigger NP, as the “RtoT” sentence and its non-“RtoT” counterpart are both grammatical, as illustrated in (5.55).

Second, the pre-requisite for the “RtoT” is that the matrix trigger NP position need be available. That is, the matrix clause does not contain a trigger-marked NP. Under this condition, the “RtoT” only occurs in a complementation construction with an NAT matrix clause.

(5.56) a. “RtoT” sentence:

```
* mi-ko kaebu ?e njau, ho [ mo m-eobanjo
AT.NFUT-2S.T AT.happy T cat LNK AT.NFUT AT-chase
Ta tokeuya ____, ].
ACC butterfly
```

b. Non-“RtoT” correspondence:

```
mi-ko kaebu ho [ mo m-eobanjo ta tokeuya
AT.NFUT-2S.T AT.happy LNK AT.NFUT AT-chase ACC butterfly
?e njau ].
T   cat
‘You are happy that the cat is chasing a butterfly.’
```

As seen in (5.56), the embedded trigger NP ?e njau ‘the cat (T)’ cannot appear in the matrix trigger position when the matrix predicate is AT-marked, as the matrix trigger position has already been occupied by the matrix actor -ko ‘you (T)’.
Third, while the “RtoT” only applies to the embedded trigger NP, there is no constraint on the trigger marking of the embedded verb. The embedded clauses can be either AT-marked, as in (5.57a), or NAT-marked, as in (5.58a). The embedded trigger NP in both sentences optionally appears in the matrix trigger position, such as ʔe oko in (5.57) and ʔe sbuku in (5.58).

(5.57) a. os-ʔo cohiv-i ʔe oko [ ho mo
NAT.NFUT-1S.NOM know-LT T child LNK AT.NFUT
tusbüku ___].
AT.cut.bamboo.shoot
‘I know that the child is cutting bamboo shoots.’

b. os-ʔo cohiv-i [ ho mo tusbüku
NAT.NFUT-1S.NOM know-LT LNK AT.NFUT AT.cut.bamboo.shoot
ʔe oko ].
T child
‘I know that the child is cutting bamboo shoots.’

(5.58) a. os-ʔo cohiv-i ʔe sbuku [ ho i-taj
NAT.NFUT-1S.NOM know-LT T bamboo.shoot LNK NAT.NFUT-3S.NOM
tusbük-a ta okoj ___].
cut.bamboo.shoot-PT NOM child
‘I know that the child is cutting the bamboo shoots.’

b. os-ʔo cohiv-i [ ho i-ta tusbük-a
NAT-1S.NOM know-LT LNK NAT-3S.NOM cut.bamboo.shoot-PT
ta oko ʔe sbuku ].
NOM child T bamboo.shoot
‘I know that the child is cutting the bamboo shoots.’

Fourth, the “RtoT” is commonly found in the ho-marked and hoci-marked complementation, while “RtoT” cannot apply in the Ø-marked complementation. As introduced in Section 5.1., there are three clause linkers connecting a full complement clause: ho, hoci, and Ø (an empty category) in Tsou. The sentences in (5.55a), (5.57a), and (5.58a) exemplify the “RtoT” in the ho-marked complementation. The “RtoT” is also attested in the hoci-marked complementation, as shown in (5.59a). However, the “RtoT” is not permissible in the Ø-marked complementation, as in (5.60a).
(5.59) **ho**c-i-marked complementation:

a. os-?o
   smoyo-neni na sbukunu, **hoci** [ tutpuutu
   NAT.NFUT-1S.NOM fear-BT T Bunun LNK.SBJV AT.catch
   no fkoi _____].
   ACC snake
   ‘I fear that the Bunun people might catch snakes.’

b. os-?o
   smoyo-neni **hoci** [ tutpuutu no fkoi
   NAT.NFUT-1S.NOM fear-BT LNK.SBJV AT.catch ACC snake
   na sbukunu].
   T Bunun
   ‘I fear that the Bunun people might catch snakes.’

(5.60) **Ø**-marked complementation:

a. *os-?o
   ta?unano ?e oko, **Ø** [ mi-cu e?ohu _____].
   NAT-1S.NOM think.PT T child LNK AT.NFUT-ASP AT.leave

b. os-?o
   ta?unano **Ø** [ mi-cu e?ohu ?e oko ].
   NAT.NFUT-1S.NOM think.PT LNK AT.NFUT-ASP AT.leave T child
   ‘I think that the child has left.’

Note that the distinction between the ho/ho ci-marked complementation and Ø-marked complementation, again, provides another piece of evidence to support our hypothesis that the clause linkers ho/ho ci/hon ci have become full-fledged complementizers in Tsou, as proposed in Section 5.1.1.2. However, we are not suggesting that the null clause linker in the Ø-marked complementation is not a complementizer or that it does not exist. As discussed in Section 5.1.2., the null clause linker demonstrates the typical properties of a complementizer even though it has no phonological realization.

Lastly, the third person clitic pronouns attached to the embedded predicate can remain inside the embedded clause even when the coreferential embedded trigger NP appears in the matrix clause. Compare (5.61) with (5.62):

(5.61) **“RtoT” sentences:**

a. os-?o
   cohiv-i ?e oko, [ ho mo cohmo
   NAT.NFUT-1S.NOM know-LT T child LNK AT.NFUT AT.water
   ta buvnu _____].
   ACC flower
   ‘I know that the child is watering flowers.’
b. os-ʔo cohiv-i ʔe oko, [ ho mi-ta, cohmo NAT.NFUT-1.S.NOM know-LT T child LNK AT.NFUT-3S AT.water ta  búvnu ______ ].
ACC   flower
‘I know that the child is watering flowers.’

(5.62) Non-“RtoT” correspondences:

a. os-ʔo cohiv-i [ ho mo cohmo ta  búvnu NAT.NFUT-1.S.NOM know-LT LNK AT.NFUT AT.water T flower ʔe oko ].
T     child
‘I know that the child is watering flowers.’

b. os-ʔo cohiv-i [ ho mi-ta, cohmo ta  búvnu NAT.NFUT-1.S.NOM know-LT LNK AT-3S.T AT.water T flower ʔe oko ].
T     child
‘I know that the child is watering flowers.’

There exists a coreferential personal clitic -ta suffixed to the embedded auxiliary verb mi- in (5.62b). Meanwhile, the auxiliary verb appears in a free form mo in (5.62a). Example (5.61b) shows that the embedded personal clitic -ta can optionally occur even when its coreferential NP ʔe oko is syntactically realized in the matrix trigger position. As introduced in Section 2.4.5, the auxiliary verb is optionally attached with a third person pronoun (i.e., -tal-si ‘he (T/Nom)’ and -hin?il-he ‘they (T/Nom)’) which is invariably coreferential with the actor of the same clause regardless whether the clause is AT-marked or NAT-marked (Ya-yin Chang 1996, Starosta 1998, Chang & Tsai 2001, and others). The occurrence of a coreferential third person clitic, so-called “clitic doubling”, is only seen in Tsou among the Formosan languages. The fact that “clitic doubling” occurs in the “RtoT” constructions suggests that the coreferential matrix trigger NP be associated with the trigger NP of the embedded clause.

The above syntactic properties of the “RtoT” suggest that “RtoT” does not involve raising as defined in the generative framework (Chomsky 1981, 1986, 1995). The crucial difference is that the “RtoT” applies optionally in Tsou and other Foromsan languages (e.g., Amis and Mayrinax Atayal), but raising is considered to be an obligatory operation (see Section 3.2.2.1 and Section 4.2.2.1). In addition, the CPT verbs do not behave like typical raising verbs, such as seem in English. A raising verb (e.g., seem) does not assign a thematic
role (θ-role) to the matrix subject. The movement involving raising is legitimate, as it does not violate the Theta Criterion, as the raised argument does not receive two θ-roles.

However, it is not the case in the Tsou “RtoT”. The CPT verb does assign a thematic role to the matrix trigger argument, such as beneficiary assigned by smoyoneni ‘fear (BT)’ in (5.59) and location assigned by ayti ‘see (LT)’ in (5.55a) and by cohivi ‘know (LT)’ in (5.57a), (5.58a) and (5.61). The θ-role in question is assigned to the holhoci-marked clausal complement. Normally, an argument is marked as a trigger when its thematic role is registered on the trigger marking of the verb in Tsou. However, the holhoci-marked clausal complement cannot be morphologically marked as a trigger since it is not an NP and hence cannot be preceded by a prenominal trigger marker, such as na in (5.63).

(5.63) a. i-\textit{si}_i \textit{teom-neni ta amo}_i \textit{a?mia} (*\textit{na}) ho \\
\textit{NAT.NFUT-3S.NOM allow-BT NOM father 1P.EXCL.T T LNK} \\
[ \textit{te cmuhu to feu?u } \textit{ _____ } ]. \\
\textit{FUT AT:butcher ACC pig} \\
‘Father allows us to butcher a pig.’ \\
(lit. ‘Father allows that \textit{we} will butcher a pig.’)

b. is-\textit{si}_i \textit{teom-neni ta amo} (*\textit{na}) ho [ \textit{te-mia} \\
\textit{NAT.NFUT-1S.NOM allow-BT NOM father T LNK FUT-1P.EXCL.T} \\
\textit{cmuhu to feu?u } ].
\textit{AT:butcher ACC pig} \\
‘Father allows \textit{us} to butcher a pig.’ \\
(lit. ‘Father allows that \textit{we} will butcher a pig.’)

I assume that the clausal trigger complement is postposed and that the trigger NP position remains vacant (or being occupied by a phonetically null expletive). In other words, the “RtoT” construction resembles the object expletive construction (or called object extraposition) in English, such as (5.64).

(5.64) English: Object extraposition
We take it for granted [ that the sun will rise tomorrow].

In (5.64), the expletive \textit{it} occurs in the direct object position, but the real object is the extraposed that-clause.
Based on the above discussion, the “RtoT” in Tsou should not be regarded as an instance of raising. Instead, the “RtoT” in question is analogous to the case of the tough construction in English, as illustrated in (5.65).

(5.65)  

(a) It is tough [ PRO to learn math].  
(b) Math is tough [ PRO to learn ____i ].

As seen in (5.65a), the embedded argument math is in a Case position so it is not required to move to the matrix clause. According to Chomsky (1977, 1981), tough-construction is taken as an instance of A’-movement like wh-questions. The situation of the tough-construction is similar to the relationship between the head noun and its gap in relative clause. The matrix overt subject (e.g., John in (5.65b)) in the tough-construction is base-generated. The apparent “raised” math in (5.65b) is a base-generated argument in the matrix clause, while the gap in the embedded clause is a trace generated by a null operator (OP), which has moved to the specifier of the complementizer phrase (CP). The base-generated matrix argument is co-indexed with the OP, which is, in turn, co-indexed with the gap in the embedded clause.

As introduced in “RtoT” in Amis (Section 3.2.2.1) and in Mayrinax Atayal (Section 4.2.2.1), “RtoT” construction and English tough-construction are similar. First, both are not involved with an obligatory Case-driven movement. Second, the apparent “raised” arguments are both in an argument position (i.e., A-position). Considering the similarities, the null operator analysis is also applied to the “RtoT” construction in Tsou. Let us illustrate the application of null operator analysis with the “RtoT” example (5.55a). The base structure of (5.55a) should be like (5.66).

(5.66)  Apply null operator analysis to the “RtoT”:

`os-ko ayt-i pe gian, [cp OP_i ho [c-mo m-eo 6a]o NAT.NFUT-2S.NOM see-LT T cat LNK AT.NFUT AT-chase ta tokeuy ta]LNM ACC butterfly`  

‘You see that the cat is chasing a butterfly.’
In (5.6), the trigger NP ḫe jiau, which semantically belongs to the embedded clause, is base-generated in the matrix clause. The gap in the embedded trigger position is A’-bound by the moved null operator in the specifier of CP. The matrix trigger ḫe jiau is co-indexed with the OP and, in turn, with the embedded trace, as shown in (5.6). Note that the fact that only the trigger argument can undergo “RtoT” supports the operator analysis as other instances of A’-movement are restricted to a trigger NP, such as the pseudo-cleft wh-questions in Formosan languages. The A’-movement of the gaps of the wh-questions in the pseudo-clefts are confined to a trigger position.

5.3 Serial verb constructions

There is a long list of studies on the definitions of SVC (Schachter 1974, Foley & Oslen 1985, Sebba 1987, Baker 1989, Seuren 1991, Durie 1997, Crowley 2002, Aikhenvald 2006, among many others). The definition of SVC differs slightly from author to author. On the basis of the agreed criteria among the previous studies, SVC in this dissertation is defined as a monoclausal construction which is expressed by a sequence of juxtaposed verbs without an intervening linker, all of which share an argument. The example of Tsou SVC under investigation is given below:

(5.67) mo m-ici tua ḫocy a si oko.
AT.NFUT AT.want AT.pick tea T child
‘The child wants to pick tea (leaves).’

In (5.67), there is no linker between the two verbs mici ‘want (AT)’ and tua ‘pick (AT)’, both of which share the same trigger actor si oko ‘child’.

The first verbs of the juxtaposed lexical verbs in Tsou SVC distribute over a number of semantic types165, such as phasal predicates (e.g., ahoi ‘begin (AT)’ in (5.68a)), modal predicates (e.g., m-eedu ‘can (AT) in (5.68b)), and commentative predicates (e.g., kaebu ‘like (AT)’ in (5.68c)).

165 The terminology of these verb types is based on Noonan’s (1985) categorization for complement-taking verbs.
The SVC analysis for the shared actor construction with juxtaposed verbs in Tsou appear in a number of the previous studies, including Lillian Huang (1997), Zeitoun (2000c)\(^ {166}\), Yung-li Chang (2006a, 2006b, 2009, 2010), Yeh & Huang (2009), Lin (2009), Huei-ju Huang (2010)\(^ {167}\), and others. Though the term SVC is used differently among these authors, the construction in question like (5.67)–(5.68) is generally analyzed or labeled as an SVC except by Lin (2009:264–268), who treat it as a “control” construction. I will return to the “control” analysis later. Let us first begin with the facts which support the SVC analysis.

First, no clause linker can occur between the juxtaposed verbs.

\[(5.69)\]  
\[
\text{mi-?o} \ 	ext{m-ici} \ (*\text{ho}) \ \delta\text{-onu} \ \text{to} \ \text{navew}.  
\]
\[
\text{AT.NFUT-1S.T} \ \text{AT.want} \ \text{LNK} \ \text{AT-eat} \ \text{ACC} \ \text{rice}  
\]
\[\text{‘I want to eat rice.’}\]

In (5.69), the clause linker *ho is not allowed to occur between the two verbs *mici ‘want (AT)’ and *bonu ‘eat (AT)’. This is expected of SVC in which a clause linker indicating the grammatical relation of the linked clauses (i.e., subordination and coordination) should not occur in an SVC.

Second, the juxtaposed verbs share an argument, forming a single predicate. In (5.70), the two verbs *meedu ‘can (AT)’ and *estamaku ‘smoke (AT)’ have the same actor -ta ‘he (T)’.

\(^{166}\) Zeitoun’s (2000c:128–32) SVC is used, in a broad sense, to refer to verb sequences which have a shared actor.  
\(^{167}\) Huei-ju Huang (2010:260–68) does not use the term SVC to refer to the construction with “juxtaposed verbs constituting a main verb unit”. However, her analysis on this construction implies an SVC proposal.
Zeitoun (2000c:129; glosses mine):

\[ \text{da-ta} \quad \text{m-eefu} \quad \text{estamaku}^{168}. \]

HAB-3S.T AT.can AT.smoke

‘He can smoke.’

Third, the juxtaposed verbs can occur independently as a main verb in a clause. The two juxtaposed verbs in (5.71a) exist independently in (5.71b) and (5.71c), respectively.

(5.71) a. mo \textit{kaebu} \textit{cocvo} si mamespi\texti{n}i.
AT.NFUT AT.like AT.laugh T woman

‘The woman likes to laugh.’

b. mo \textit{kaebu} si mamespi\texti{n}i.
AT.NFUT AT.happy T woman

‘The woman is happy.’

c. mo \textit{cocvo} si mamespi\texti{n}i.
AT.NFUT AT.laugh T woman

‘The woman laughed.’

Fourth, there is only one set of TAM appearing in the whole sentence with juxtaposed verbs. Since SVC is monoclausal, it is expected that there is only one occurrence of TAM.

(5.72) mo \textit{m-i}cici (\texti{mo}) \texti{b-onu} to navew si \texti{oko}.
AT.NFUT AT.want AT AT-eat ACC rice T child

‘The child wants to eat rice.’

Example (5.72) only has one auxiliary verb \textit{mo}. The auxiliary verb \textit{mo} for the second verb is not allowed to occur.

In addition, Yung-li Chang (2006a:19) proposes a “focus harmony constraint” (that is, trigger harmony constraint) for the juxtaposed verbs and their preceding auxiliary verb in Tsou. That is, the lower verb (V2) must agree with the higher verb (V1) and the auxiliary verb in their trigger marking. In (5.73), the auxiliary verb and the two serial verbs are all AT-marked or NAT-marked.

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168 My informant indicates that the verb \textit{estamaku} ‘smoke (AT)’ can also be \textit{etamaku}. 
(5.73) Yung-li Chang (2006a:19; glosses mine):

a. mi-ERSHEY kaêbó b-onu ta tacumù.
AT.NFUT-1.S.T AT.like AT-eat ACC banana
‘I like to eat bananas.’

b. os-HERSy kaêb-a ana ?o tacumù.
NAT.NFUT-1.S.NOM like-PT eat.PT T banana
‘I like to eat bananas.’

The agreeing trigger marking in (5.73) suggests that the verb sequence is treated as a single predicate. Note that the trigger harmony follows an AT/NAT contrast (Yung-li Chang 2006a, Lin 2009, Huei-ju Huang 2006, and others). The AT-marked juxtaposed verbs agree with an AT auxiliary verb, as in (5.73a), while the PT/LT/RT-marked juxtaposed verbs select an NAT auxiliary, as in (5.73b).

There is one problem for the SVC analysis, however, the negation scope. In SVC, there should be only one negation scope since the juxtaposed verbs constitute a single overall event (Aikhenvald 2006). In Tsou, a negator normally occurs clause-intially (Sung 1999, You-min Chen 2000, 2000, etc.). However, it is reported that a negator can intervene between the juxtaposed verbs in Tsou (Yung-li Chang 2006a and Lin 2009).

(5.74) Yung-li Chang (2006a:19; glosses mine):

a. mi-HERSy-cu ahoi o?te b-onu ta fou.
AT.NFUT-3.S.T-ASP AT-start NEG AT-eat ACC meat
‘I have started not eating meat.’

b. os-HERSy-cu ahoz-a o?te an-a ?o fou.
NAT.NFUT-3.S.T-ASP start-PT NEG eat-PT T meat
‘I have started not eating that kind of meat.’

In (5.74), the second verbs bonulana ‘eat (AT/PT)’ are negated, while the first verbs remains intact. That is, the sentences do not have the interpretation “I have not started eating (that kind of) meat”. The examples in (5.74) suggest that the ‘start-eat’ sequence is not integrated into a single event. Lin (2009:363) argues that “the ‘want-eat’ series and its many other analogs display features of both a single predicate and multiple predicates”. Therefore, the verb juxtaposition is discussed under SVC and control, separately, in Lin’s (2009) study.
In my database, however, several juxtaposed verbs do not allow an intervening negation. Consider:

(5.75) a. mi-ta m-ici yaa oko.
    AT.NFUT-3S.T AT-want AT.have baby
    ‘She wants to have a baby.’

  b. o?a mo m-ici yaa oko ?e tayni.
    NEG AT.NFUT AT-want AT.have baby T 3S
    ‘She does not want to have a baby.’

  c. *mi-ta m-ici o?a yaa oko.
    AT.NFUT-3S.T AT-want NEG AT.have baby
    Intended: ‘She wants not to have a baby.’

It is not allowed to negate only the second verb yaa ‘have (AT)’ in the ‘want-have’ sequence, as (5.75c) illustrates. A close expression for ‘she wants not to have a baby’ is like (5.76).

(5.76) to?toh?u-si o?a mo m-ici yaa oko.
    thought-3S.POSS NEG AT.NFUT AT-want AT.have baby
    ‘Her thought is not that (she) wants to have a baby.’

Still, the negator o?a does not occur between the ‘want-have’ sequence in (5.76). The inconsistency of the negation scope among different verb sequences suggests that the different verb sequences display different degrees of integration of the juxtaposed verbs. The varied degrees of event integration, in turn, suggest that there is an on-going syntactic change.\(^{169}\) Thus, it is questionable to take ‘one single negation scope’ involving the semantics of the verb-verb integration as a crucial criterion to determine if the relevant construction in question is SVC. I argue that the criterion of the shared polarity value (or single negation scope) can only be a supplement for detecting SVC when it conflicts with other major criteria, such as the shared argument and single TAM.

\(^{169}\) There are two possibilities to account for this change. One possibility is that SVC is being reanalyzed as complementation. Thus, there are some cases in which each verb of the verb-verb sequence is allowed to have a separate negation scope, such as ‘start-eat’ sequence in (5.74). The other possibility is that complementation has been reanalyzed as SVC. Hence, most of the verb juxtaposition cannot have an intervening negator, as illustrated in (5.75). I have not yet found independent evidence to exclude one of the two possibilities. I would like to leave it open for further study.
The verb juxtaposition is treated as a “control” construction rather than SVC by Lin (2002:264–68). For example:

(5.77) Juxtaposed “control” construction: Lin (2009:264–65; glosses mine)
mo-Øi m-ici koicu to ?o-?oko ?o ino,
AT.NFUT AT-want AT.scold ACC PL-child T mother
‘Mother wanted to scold (the) children.’
(lit. ‘Mother intended that Ø scold (the) children.’)

(5.78) a. Non-juxtaposed “control” construction: Lin (2009:266; glosses mine)
i-tei potan-i ta pasuya_i ?o voyu_j ho [ te-si_j
NAT.NFUT-3S.NOM prevent-LT NOM Pasuya T Voyu LNK FUT-3S.T
tutpuut-a Øj ?o koatu ].
arrest-PT T Koatu
‘Pasuya prevented Voyu from arresting Koatu.’
(lit. ‘Pasuya prevented Voyu that Ø would arrest Koatu.’)

b. i-tei potan-i ta pasuya_i ho [ te-si_j
NAT.NFUT-3S.NOM prevent-LT NOM Pasuya LNK FUT-3S.T
tutpuut-a ?o voyu_j ?o koatu ].
arrest-PT T Voyu T Koatu
‘Pasuya prevented Voyu from arresting Koatu.’
(lit. ‘Pasuya prevented that Voyu would arrest Koatu.’)

Though Lin (2002) uses the label “control” to refer to some sentences with verb juxtaposition, her definition of control is distinct from that of the Generative Grammar. Lin (2002:264) indicates that “a control construction involves an unexpressed argument due to a shared reference between a matrix clause nominal and a subordinate clause nominal.” To be exact, she treats “control” as a kind of argument sharing construction. By this definition, she indicates that there are two types of control in Tsou: (i) juxtaposed control construction, as in (5.77); and (ii) non-juxtaposed control construction, as in (5.78a). However, both types cannot be treated as instances of control in the sense of Generative Grammar. In the generative literature, control refers to a syntactic operation in which an argument of matrix clause controls the reference of a covert argument in the subordinate clause. The matrix argument (controller) and its coreferential covert argument (controlee) have separate θ-roles. In addition, the controlee (i.e., PRO) is a base-generated empty category which can never be realized as an overt NP. The juxtaposed “control” construction like (5.77) cannot be treated as an instance of control because there is
no empty category postulated in this structure. As for the non-juxtaposed “control”
construction like (5.79a), it is also not control as defined in the generative framework since
the coreferential covert argument (as indicated by $\emptyset$) can be replaced with an overt NP $\textit{\tilde{o}}$ voyu ‘Voyu (T)’, as shown in (5.79b). In fact, the non-juxtaposed “control” construction is
an instance of “RtoT” in the $\textit{ho}$-marked complementation, as introduced in Section 5.2.3.

I argue that the control analysis is not appropriate for the verb juxtaposition of Tsou
though its linear order seems to be similar to a control pattern. If the verb juxtaposition
in question is an instance of actor control, then each verb of the matrix and subordinate
clauses must have its own argument(s). The shared actor is structurally realized as an
overt actor in the matrix clause and a coreferential empty category in the embedded
clause, respectively. However, the argument structure of the Tsou verb juxtaposition
does not support this bi-clausal analysis of control, as evidenced in two respects.

First, the controller should be allowed to occur in the matrix clause if the verb
juxtaposition is a bi-clausal construction. In a bi-clausal construction, the matrix
argument(s) normally occur(s) before the clausal complement, as shown in (5.79).

(5.79)  

  a. $\textit{ho}$-marked complementation:
  
  mo kæbu si mamespiŋi $\textit{ho}$ [ te-ko tufku $\}$.
  AT.NFUT happy.AT T woman COMP FUT-2S.T AT.wash.clothes
  ‘The woman is happy that you will wash clothes.’

  b. Patient control:
  
  os-ko pa?cohiv-i $\textit{te}$ mamespiŋi, $\textit{ho}$ [ (te) m-um?u
  NAT.NFUT-2S.NOM teach-LT T woman LNK FUT AT.plant
  ta wasavi $\Delta_j$ $\}$.
  ACC wasabi
  ‘You taught the woman to plant wasabi.'

Example (5.79a) shows that the matrix argument $\textit{si mamespiŋi}$ ‘the woman’ is positioned
right after the matrix verb $\textit{kaebu}$ ‘happy (AT)’ and before the $\textit{ho}$-marked full complement
clause. In the patient control example (5.79b), the patient argument of the matrix clause
occurs before the $\textit{ho}$-marked defective complement clause. However, in Tsou verb
juxtaposition, no argument is allowed to occur immediately after the first verb, as
illustrated in (5.80). In (5.80b), the shared actor *si mamespi* in ‘the woman (T)’ is not allowed to occur right after the first verb *kaeβu* ‘like (AT)’.

(5.80) a. mo kaeβu Ø [ pasunayno Δi ] *si mamespi*.  
AT.NFUT like.AT LNK AT.sing T woman  
‘The woman likes to sing.’

b. *mo kaeβu *si mamespi* Ø [ pasunayno Δi ].  
AT.NFUT like.AT T woman LNK AT.sing

Second, the embedded clause cannot contain an overt trigger NP in control constructions. It is assumed in the Generative Grammar that the controlee is a base generated empty category (i.e., PRO) in the embedded subject position. In Tsou, PRO must be a trigger argument of the embedded clause, as seen in patient control and apparent patient control (i.e., actor control). Moreover, the controlee must be a trigger actor in patient control and apparent patient control. In accordance with the requirement, the embedded verbs must be AT-marked, not NAT-marked in control constructions. Let us apply the control analysis to examine the sentences with verb sequences in (5.81):

(5.81) a. mo m-ici Ø [ 6-onu to buhci ɪ Δi ] *?o ɲiau*.  
AT.NFUT AT-want LNK AT-eat ACC mouse T cat  
‘The cat wants to eat a mouse.’

b. i-si *?uc-i-a Ø [ ana Δi ____ ] ta ɲiau* *?o buhci*.  
NAT.NFUT-3S.NOM want-PT LNK eat.PT NOM cat T mouse  
‘The cat wants to eat a mouse.’

The control analysis can account for the ‘AT-AT’ verb sequence in (5.81a) since the controlee is in the embedded trigger position. But the ‘PT-PT’ verb sequence in (5.81b) raises a problem for the control analysis. Given the trigger constraint on the controlee, (5.81b) should be ungrammatical since the actor in the NAT embedded clause is nominative-marked. However, (5.81b) is a grammatical sentence. Thus, the control analysis fails to account for the NAT-NAT verb sequences in Tsou.

Based on the above discussion, the control analysis is inappropriate for the verb sequences in Tsou. On the contrary, it is not a problem for the SVC analysis to account for the above syntactic behaviors of the verb juxtaposition in Tsou.
First, it is expected that an argument is not required to occur immediately after the first verb in the SVC analysis, assuming that this is an instance of “same-subject serial construction” (Crowley 2002).

(5.82) a. [ mo kaebü cocvo ] si mamesipìni.  
    AT.NFUT AT.like AT.laugh T woman  
    ‘The woman likes to laugh.’

b. *[ mo kaebü si mamesipìni cocvo ].  
    AT.NFUT AT.like T woman AT.laugh

Crosslinguistically, the shared argument in SVC can occur after the V-V sequence or between the juxtaposed verbs. But in Tsou, the shared argument is only allowed to occur after the V-V sequence, as seen in (5.82).

Second, the ‘AT-AT’ and ‘PT-PT’ verb sequences are well-attested patterns in SVC. Applying the SVC analysis, the examples in (5.81) are represented as follows:

(5.83) a. mo [ v₁ m-ici ] [ v₂ ë-onu ] ta ëuhci ño ñiau.  
    AT.NFUT AT-want AT-eat ACC mouse T cat  
    ‘The cat wants to eat the mouse.’

b. i-sì [ v₁ ?uci-a ] [ v₂ ana ] ta ñiau, ño ëuhci.  
    NAT.NFUT-3S.NOM want-PT eat.PT NOM cat T mouse  
    ‘The cat wants to eat the mouse.’

As SVC is a construction with a single predicate, there is one and only one scope for trigger marking, TAM, and the like. Both ‘AT-AT’ and ‘NAT-NAT’ patterns of the Tsou verb juxtaposition fit the syntactic properties of the SVC, the two juxtaposed verb display an identical pattern of trigger marking, which is the so-called “focus harmony” or “voice concord” (Yung-li Chang 2006a).

Based on the above discussion, Tsou can be characterized as a serializing language as Yung-li Chang (2006a) proposes. Aikhenvald (2006:14) indicates that “all serializing languages appear to have at least one type of SVC whose components have the same subjects”. Since Schachter’s (1976) pioneering work on the split subjeckhood in the Philippine languages, the split subjeckhood is also reported in their genetically related Formosan languages, including Tsou under investigation (Ya-yin Chang 2004 and Lin
2009). The syntactic properties of the putative grammatical “subject” distribute over both trigger NP and actor NP in Tsou. Given that both trigger NP and actor NP share the subjecthood, Tsou displays distinct patterns of SVC from other serializing languages, such as Yimas (Foley & Olson 1985), Paamese (Crowley 2002), Olutec (Zavala 2006), etc. In the existing literature on SVC, subject sharing is normally taken as a salient property of prototypical SVCs. However, the subject sharing property need be specified as “actor sharing” and “trigger sharing” in Tsou. The SVCs in Tsou can be divided into two types: same-actor SVC and same-trigger SVC.

The same-actor SVC can be represented in ‘AT-AT’ and ‘NAT-NAT’ verb sequences, as illustrated in (5.84).

(5.84) Same-actor SVC:

a. mi-ta [v1 m-ici ] [v2 aut?ucu ta oko ]
   AT.NFUT-3S.T  AT-want  AT.take.care.of  ACC child
   ?e mameoi.
   T old.man
   ‘The old man wants to take care of the child.’

b. i-ta[i [v1 ?uci-a ] [v2 aut?uc-a ] ta mameoi
   NAT.NFUT-3S.NOM  want-PT  take.care.of-PT  NOM  old.man
   ?e oko.
   T child
   ‘The old man wants to take care of the child.’
   # ‘The child wants to be taken care of by the old man.’

In the same-actor SVC, trigger sharing is not required. In (5.84a), both actors of the first and second verbs are trigger-marked. But both are nominative-marked in the ‘NAT-NAT’ SVC, as in (5.84b). It is noteworthy that Yung-li Chang (2006a) proposes a “focus harmony” (that is, trigger harmony in our terminology) for the Tsou SVCs in that the second verb must take the same trigger marking with the auxiliary verb and first verb. However, I argue that the trigger harmony constraint is not required for all the SVCs in Tsou. The trigger harmony applies to the same-actor SVC, but is not required in the same-trigger SVC.

The previous SVC studies in Tsou only discuss the same-actor SVC. In addition to the same-actor SVC, the present study proposes Tsou has “same-trigger SVC”, in which
the shared argument must be the trigger argument for both juxtaposed verbs; meanwhile, the thematic roles of the shared argument can be different for the two verbs. In the same-trigger SVC, the shared argument is the actor of the first verb \((V_1)\) and the patient of the second verb \((V_2)\) simultaneously. Consider:

\[
(5.85) \quad \text{Same-trigger SVC:}
\]

\[
\begin{align*}
\text{a. } & \text{ mi-ta } [v_1 \text{ m-ici }] (\text{ho}) (\text{i-ta}) \\
& \quad \text{AT.NFUT-3S.T} \quad \text{AT-want} \quad \text{LNK} \quad \text{NAT.NFUT-3S.NOM} \\
& \quad [v_2 \text{ aut?uc-a }] \text{ taoko } \text{e mameoi.} \\
& \quad \text{take.care.of-PT} \quad \text{NOM} \quad \text{child} \quad \text{T old.man} \\
& \quad \text{‘The old man wants to be taken care of by the child.’}
\end{align*}
\]

\[
\begin{align*}
\text{b. } & \*\text{mi-ta } [v_1 \text{ m-ici }] \text{ e mameoi} \text{i} [v_2 \text{ aut?uc-a}] \\
& \quad \text{AT.NFUT-3S.T} \quad \text{AT-want} \quad \text{T old.man} \quad \text{take.care.of-PT} \\
& \quad \text{taoko } \text{.} \\
& \quad \text{NOM} \quad \text{child} \\
& \quad \text{‘The old man wants to be taken care of by the child.’} \quad \text{(Same-trigger SVC)}
\end{align*}
\]

\[
\begin{align*}
\text{c. } & \text{i-ta} \text{i} [v_1 \text{ ?uci-a }] [v_2 \text{ aut?uc-a }] \text{ taoko} \\
& \quad \text{NAT.NFUT-3S.NOM} \quad \text{want-PT} \quad \text{take.care.of-PT} \quad \text{NOM} \quad \text{child} \\
& \quad \text{e mameoi.} \\
& \quad \text{T old.man} \\
& \quad \*\text{‘The old man wants to be taken care of by the child.’} \quad \text{(Same-trigger SVC)}
\end{align*}
\]

In (5.85a), the shared trigger NP \text{e mameoi} ‘the old man (T)’ is the actor of \(V_1\) and the patient of \(V_2\). The construction like (5.85a) is analyzed as an instance of SVC based on three reasons. First, the clause linker \text{ho} is not allowed to occur between the juxtaposed verbs \text{mici} ‘want (AT)’ and \text{aut?uc} ‘take care of (PT)’, as in (5.85a). Second, there is only a single TAM. The second verb cannot have its own auxiliary verb, such as \text{i-ta} in (5.85a). Third, the shared argument occurs after the verb sequence. It cannot occur between the juxtaposed verbs, as in (5.85b). Note that the example (5.85c) in the ‘NAT-NAT’ pattern can never be interpreted as an instance of the same-trigger SVC since the shared actor is nominative in the first verb \text{uci} ‘want (PT)’. Based on the above, the ‘AT-NAT’ combination of the same-trigger SVC like (5.85a) shows that the trigger harmony constraint does not apply to all Tsou SVCs. At least, it does not hold for the same-trigger SVC.

By now, it is clear that the “subject sharing” of the Tsou SVCs is syntactically realized as an identical actor of serial verbs in the same-actor SVC, as in (5.86), and an
identical trigger NP of serial verbs in the same-trigger SVC in Tsou, as in (5.87a). Thus, the non-identical markings of the shared arguments of the juxtaposed verbs like the ‘nominative-trigger’ in (5.87b) cannot be an instance of same-trigger SVC.

(5.86) a. Same-actor SVC: AT-AT pattern
mi-ʔo [v1 m-ici ] [v2 s<m>ove ]
AT.NFUT-1.S.T AT-want carry.on.the.back<AT>
ta ino-ʔu.
ACC mother-1S.POSS
‘I want to carry my mother on the back.’

b. Same-actor SVC: NAT-NAT pattern
i-ʔo [v1 ?uci-a ] [v2 svie-i ]
AT.NFUT-1.S.NOM want-PT carry.on.the.back-LT
ʔe ino-ʔu.
T mother-1S.POSS
‘I want to carry my mother on the back.’

(5.87) a. Same-trigger SVC: AT-NAT pattern
mi-ʔo [v1 m-ici ] [v2 svie-i ]
AT.NFUT-1.S.NOM AT-want carry.on.the.back-LT
ta ino-ʔu.
NOM mother-1S.POSS
‘I want to be carried on the back by my mother.’

b. *i-ta [v1 ?uci-a ] [v2 svie-i ]
NAT.NFUT-3.S.NOM want-PT carry.on.the.back-LT
ta ino-si.
T mother-3S.POSS
Intended: ‘He wants to be carried on the back by his mother.’

Table 5.2 summarizes the properties of argument sharing of both same-actor SVC and same-trigger SVC based on the examples in (5.86) and (5.87).

<table>
<thead>
<tr>
<th>SVC Type</th>
<th>Pattern</th>
<th>Shared argument of V1</th>
<th>Shared argument of V2</th>
<th>Shared actor</th>
<th>Shared trigger</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same-actor SVC</td>
<td>AT-AT</td>
<td>trigger (actor)</td>
<td>trigger (actor)</td>
<td>Yes</td>
<td>Yes</td>
<td>(5.86a)</td>
</tr>
<tr>
<td></td>
<td>NAT-NAT</td>
<td>nominative (actor)</td>
<td>nominative (actor)</td>
<td>Yes</td>
<td>No</td>
<td>(5.86b)</td>
</tr>
<tr>
<td>Same-trigger SVC</td>
<td>AT-NAT</td>
<td>trigger (actor)</td>
<td>trigger (patient)</td>
<td>No</td>
<td>Yes</td>
<td>(5.87a)</td>
</tr>
<tr>
<td></td>
<td>*NAT-NAT</td>
<td>nominative (actor)</td>
<td>trigger (patient)</td>
<td>No</td>
<td>No</td>
<td>*(5.87b)</td>
</tr>
</tbody>
</table>
Table 5.2 shows that both types of the Tsou SVCs—same actor SVC and same-trigger SVC—are used to express the actor of the first verb coreferential with an argument of the second verb. Actor sensitivity is also attested in Tsou verb serialization since the first verbs need to be an actor in both types of SVCs. As for the patient of the first verb coreferential with an argument of the second verb, it is represented in a patient control pattern.

It is worthy of note that Lin (2009:361–389) proposes two types of Tsou SVCs—harmonizing SVCs and non-harmonizing SVCs. Both types of the SVCs involve actor sharing. The division of the two types is based on the criterion of “focus harmony” (that is, trigger harmony). The harmonizing SVCs, which observe trigger harmony are either ‘AT-AT’ or ‘NAT-NAT’ verb serials. The harmonizing SVCs in Lin (2009:362–375) correspond to what we call the same-actor SVC. On the other hand, the non-harmonizing SVCs are NAT-AT verb series, which do not follow trigger harmony. Lin (2009:375–389) proposes three subtypes of non-harmonizing SVCs for Tsou—instrumental SVC, locational SVC, and associative SVC. Her examples are as follows:

(5.88)  

a. Instrumental SVC: Lin (2009:376; glosses mine)  
i-ʔo tith-eni m-apaso to fou ʔo poyave.  
NAT.NFUT-1S.NOM use-IT AT-chop ACC meat T knife  
‘I use the knife to chop meat.’

b. Locational SVC: Lin (2009:376; glosses mine)  
i-ʔo yon-i m-apaso to fou ʔo oyonapeiʔi.  
NAT.NFUT-1S.NOM stay-LT AT-chop ACC meat T kitchen  
‘I stayed in the kitchen chopping meat.’

c. Associative SVC: Lin (2009:376; glosses mine)  
i-ʔo haf-a uh to taipahu ʔo naau.  
NAT.NFUT-1S.NOM take-PT AT.go OBL Taipei T Naau  
‘I took Naau to Taipei.’

Lin’s (2009:362–375) SVC analysis for these complex sentences with adverbial expressions is mainly based on three reasons: (i) no clause linker can intervene the juxtaposed verbs; (ii) no auxiliary verb can precede the second verb; and (iii) no negator can occur between the contiguous verbs. However, it is still questionable to treat them as SVCs since there is evidence to suggest that these sentences involve subordination.
According to Ya-yin Chang (2004:154–157) and Tsai (2007:589–590), in general, the modifier expression of the second predicate (or clause) is linked to the main predicate via secondary predication in Tsou, as evidenced by a clause linker ho. Take Ya-yin Chang’s (2004) analysis for example:

(5.89)  a. Instrument event predicate: Ya-yin Chang (2004:155; glosses mine)
mi-ta titho ta poyave ho smucu\textsuperscript{170} ta fuzu
AT.NFUT-3S.T AT.use ACC knife LNK AT.kill ACC wild.pig
\textit{?e pasuya.}
T Pasuya
‘Pasuya is using the knife to kill the wild pig.’

b. Locative event predicate: Ya-yin Chang (2004:155; glosses mine)
mo yon to hopo\textsuperscript{171} ho m-oŋsi ?o pasuya.
AT.NFUT at OBL room LNK AT-cry T Pasuya
‘Pasuya is crying in the room.’

Ya-yin Chang’s (2004:155) examples show that there is consistently a clause linker ho to link the adverbial expressions, as shown in (5.89). Though Ya-yin Chang’s ‘AT-AT’ examples are different from Lin’s NAT-AT pattern, it seems to be less likely for two different trigger marking patterns of the same sentence to correspond to two distinct syntactic operations, namely, SVC and subordination.

The crucial point against the SVC analysis for these complex sentences with adverbial expressions like (5.88) is the fact that the sentence-final trigger NP is not the shared argument of the verb sequence in the relevant construction. This is supported by the fact that the sentence-final trigger NP is morphologically marked in accordance with V\textsubscript{1}, but not with V\textsubscript{2}. If the NAT-AT pattern in (5.88) is an instance of SVC, then the shared argument of the AT-marked V\textsubscript{2} should the actor. However, the thematic roles of the shared arguments in (5.88) can never be an actor since they are adverbial expressions, such as an instrument ?o poyave ‘the knife (T)’ in (5.88a), a location ?o oyonape?i ‘the kitchen (T)’ in (5.88b), and a comitative company ?o naau ‘Naau (T)’ in (5.88c). Rather, the facts argue for a bi-clausal analysis of control: the sentence-final trigger NP is a postposed argument of the matrix verb (V\textsubscript{1}), while the actor of the matrix verb controls

\textsuperscript{170} My informant indicates that the AT verb for ‘stab’ is smoʔcu and the AT verb for ‘butcher’ is cmuhu.
\textsuperscript{171} My informant indicates that the word hopo means ‘bed’, not ‘room’.
the reference of the covert trigger actor in the AT embedded clause. The control analysis can account for the facts that the embedded clauses in Ya-yin Chang’s (2004) ‘AT-AT’ pattern and Lin’s (2009) NAT-AT pattern are both AT-marked. In addition, it also fits the requirement of control in Tsou such that the controlee (i.e., PRO) needs to be a trigger actor and, accordingly, the embedded verb of control, AT-marked. Applying the control analysis, the structures of the examples in (5.88) are illustrated as follows:

(5.90) Apply control analysis:
a. [i-ʔo,]
   tith-eni _____j (*ho) [ m-apaso to fou PROi,]
   NAT.NFUT-IS.NOM use-BT LNK AT-chop ACC meat
   ?o poyavej .
   T knife
   ‘I use the knife to chop meat.’
b. [i-ʔo,]
   yon-i _____j (*ho) [ m-apaso to fou PROi,]
   NAT.NFUT-IS.NOM stay-LT LNK AT-chop ACC meat
   ?o ?oyonapeiʔi, .
   T kitchen
   ‘I stay in the kitchen to chop meat.’
c. [i-ʔo,]
   haf-a _____j (*ho) [ uh to taipahu PROi,]
   NAT.NFUT-IS.NOM take-PT LNK AT.go OBL Taipei
   ?o naaʔu, .
   T Naa’u
   ‘I take Naa’u to go to Taipei.’

In (5.90), the matrix nominative actor -ʔo controls the reference of the missing trigger actor (indicated by PRO) in the AT embedded clause. Meanwhile, it is plausible to propose that the matrix trigger NP is postposed to the sentence-final position, such as ?o poyave ‘the knife (T)’ in (5.90a), ?o ?oyonapeiʔi ‘the kitchen (T)’ in (5.90b), and ?o naau ‘Naaau (T)’ in (5.90c). This postposed analysis for the trigger NPs in (5.90) is supported by the dropping of the clause linker ho. As introduced in Section 5.2.1 and Section 5.2.2, the postposed trigger NP is normally accompanied by another phenomenon of dropping the clause linker ho in patient control and apparent patient control. Moreover, the postposed analysis is also supported by the fact that the alleged postposed trigger NP may also appear in the matrix trigger position, i.e., immediately before the linker ho, as shown in (5.91).
5.4 Summary

This chapter discusses four syntactic operations involving Tsou complementation: (i) complementation with a ho-marked and Ø-marked full complement clause; (ii) patient control and apparent patient control; (iii) “raising-to-trigger” (“RtoT”); and (iv) serial verb construction (SVC). In the ho-marked complementation, the clause linker ho has a variant hoci (or honci). The clause linker ho is used to link an indicative complement, while hoci (or honci) connects a subjunctive complement. The ho-marked complementation is a subordinate structure of a complement type rather than a coordinate structure though the clause linker ho may have its origin in the homophonous coordinating conjunction ho.

Tsou employs two distinct syntactic operations to encode a shared argument over two events: (mono-clausal) SVC and (bi-clausal) control. The constituent order of Tsou SVC is similar to the Amis actor control in that there is an apparent verb-verb sequence. My analysis shows that only verb-verb sequences in Tsou are the genuine SVCs, as there is only one single set of TAM indicated by a single shared auxiliary verb. The present study proposes two types of SVCs in Tsou: same-actor SVC and same-trigger SVC. The previous studies (e.g., Yung-li Chang 2006a, Lin 2009 and Huei-ju Huang 2010) only cover same-actor SVC.

The patient control is a complementation construction in which a matrix patient controls the reference of the missing actor in the ho-marked complement clause. However, most Tsou manipulative verbs appear in apparent patient control. Though the structure of the apparent patient control is similar to patient control, apparent patient
control is, in fact, a variant of actor control. Different from patient control, the embedded verb of apparent patient control is causativized. Accordingly, the controller is switched from the matrix patient to the matrix actor, which fits the actor sensitivity constraint proposed by Chang & Tsai (2001).

“RtoT” in Tsou refers to a “raising” phenomenon in which a trigger NP of the full complement clause appears in the matrix trigger position of an NAT matrix clause. However, “RtoT” is not an instance of raising as defined in the generative literature, as it is not an obligatory movement. Rather, “RtoT” optionally applies to the embedded trigger NP. The present study proposes that it is a kind of null operator movement similar to the English tough-construction. The gap in the embedded trigger position is A’-bound by the moved null operator in the specifier of CP. The apparent “raised” argument is based-generated in the matrix trigger position coreferential with a moved null operator and, in turn, with its trace in the embedded trigger position.
CHAPTER SIX
TYPOLOGICAL COMPARISON

The purpose of this chapter is to characterize the syntactic constructions involving Formosan complementation based on the findings on three typologically representative Formosan languages—Amis, Mayrinax Atayal and Tsou, discussed in the previous three chapters. This typological study begins with describing the various types of syntactic structures of Formosan complementation by comparing the three Formosan languages. The facts and data from other Formosan languages will also be cited where relevant. Some typological generalizations, uniqueness and constraints relating to the complementation across Formosan languages will be discussed. The typological classification of Formosan complementation is based on the three constructions: (i) complementation with a full complement clause; (ii) constructions with a shared argument; and (iii) constructions with a “raised” argument.

Some possible historical developments of the clause linkers will be also discussed. In Mayrinax Atayal and Tsou, some clause linkers are homophonous with several items, such as an accusative marker, a coordinating conjunction, a topic marker and a verb of saying, etc. This leads to two significant questions: (i) Do these clause linkers have their sources in these homophonous items?; and (ii) Among them, which items are typologically common to have undergone reanalysis (or grammaticalization) as a complementizer?

Lastly, the split subjecthood of the Formosan languages is examined from a typological perspective of Formosan complementation. Crosslinguistically, Formosan languages are unique in that the syntactic properties of the notion “subject” distribute over the actor and the most syntactically prominent NP (known as “trigger”, “absolutive”, “pivot”, “focused NP”, and so on in the literature) in the same clause. Chang & Tsai (2001) proposes “actor-sensitity” for the situation when the subjecthood is carried by the actor argument. This study proposes “trigger-sensitivity” for the syntactic operation that treats the trigger argument as “subject”. It will be shown that the split subjecthood is reflected in the structures involving complementation in various ways.
This chapter is organized as follows. Section 6.1 introduces various construction
types of the syntactic structures involving complementation and discusses some
language-universal and language-specific phenomena attested in the cross-Formosan
comparison. In Section 6.2, some possible accounts are proposed for the historical
development of the clause linkers. The split subjecthood is discussed in Section 6.3,
summarizing the phenomena associated with the actor-sensitivity and trigger-sensitivity.

### 6.1 Types of complementation structures

The clausal complements come in various types across Formosan languages. Based on
their syntactic structures, the clausal complements are divided into three types: (i)
constructions with a full complement clause; (ii) constructions with a shared argument;
and (iii) constructions with a “raised” argument.

#### 6.1.1 Constructions with a full complement clause

The complementation constructions with a full complement clause demonstrate great
diversity across Formosan languages. With all the differences, the complementation
constructions with a full complement clause still have some properties in common. Let
us begin with the shared properties among the Formosan languages.

First, most of the complement-taking (CPT) verbs distribute over similar semantic
types of predicates. In Amis, Mayrinax Atayal and Tsou, the CPT verbs which select a
full complement clause mainly cover: (i) propositional attitude predicates (e.g., ‘think’
and ‘believe’), (ii) predicates of knowledge (e.g., ‘know’ and ‘forget’); (iii) utterance
predicates (e.g., ‘say’ and ‘ask’); (iv) predicates of fearing (e.g., ‘fear’); (v) commentative
predicates (e.g., ‘be happy’ and ‘be sad’); and (vi) desirative predicates (e.g., ‘hope’). In
fact, this distribution matches the semantic types of the CPT verbs for the sentence-like
clauses proposed by Noonan (1985). In addition, several manipulative predicates (e.g.,
‘force’ and ‘allow’) which crosslinguistically appear in a control construction are found
in the complementation with a full complement clause in some Formosan languages, such
as Mayrinax Atayal and Tsou.

Three facts support that the full complement clauses in Formosan languages are
independent clauses. First, there is no missing argument in the full complement clause.
Second, there is no constraint on the trigger marking of the complement predicates. Third, the full complement clauses are all finite though not all of them can select a full range of tense and aspect marking (TAM).

Despite the similarities, the clause linkers used with full complement clauses are of great diversity among Formosan languages in that their number ranges from zero (null complementizer), as in Amis, to six, as in Mayrinax Atayal (cuʔ, ruʔ, ʔiʔ, ʔaʔ, naʔ, and mhaʔ). These clause linkers are homophonous with various other items, such as a Case marker, a coordinating conjunction, a topic marker, a verb, etc. The homophonous syntactic categories with the clause linkers for full complement clauses are listed in Table 6.1.

<table>
<thead>
<tr>
<th>Homophonic syntactic category</th>
<th>Formosan language(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>accusative marker for common NPs</td>
<td>Mayrinax Atayal (cuʔ), Puyuma (qə), Bunun/Kavalan/Paiwan (tu)</td>
</tr>
<tr>
<td>coordinating conjunction</td>
<td>Mayrinax Atayal (ruʔ), Tsou (ho/hoci/honci), Budai Rukai (alaka)</td>
</tr>
<tr>
<td>trigger/accusative marker for proper nouns; preposition for temporal/locative NPs</td>
<td>Mayrinax Atayal (ʔiʔ)</td>
</tr>
<tr>
<td>topic marker</td>
<td>Mayrinax Atayal (ʔaʔ)</td>
</tr>
<tr>
<td>nominative/beneficiary/instrument marker for common NPs</td>
<td>Mayrinax Atayal (naʔ)</td>
</tr>
<tr>
<td>verb of saying</td>
<td>Mayrinax Atayal (mhaʔ), Thao (mðay)</td>
</tr>
<tr>
<td>covert linker (Ø)/no linker</td>
<td>Amis, Tsou, Seediq, Saisiyat, Thao</td>
</tr>
</tbody>
</table>

In addition, the various numbers and distributions of the clause linkers for full complement clauses reflect different types of partitions in the semantic domain of the sentential propositions. Across Formosan languages, there are three distributional patterns of the clause linkers for full complement clauses, as illustrated by Maryinax Atayal, Tsou and Amis/Paiwan in Table 6.2.
Table 6.2. Distributional patterns of clause linkers for full complement clauses across Formosan languages.

<table>
<thead>
<tr>
<th>CPT type</th>
<th>Verb</th>
<th>Clause linker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mayrinax Atayal</td>
</tr>
<tr>
<td>Knowledge of predicate</td>
<td>‘know’</td>
<td>cu?</td>
</tr>
<tr>
<td>Manipulative predicate</td>
<td>‘allow’</td>
<td>??</td>
</tr>
<tr>
<td>Desirative predicate</td>
<td>‘hope/wish’</td>
<td>na?</td>
</tr>
<tr>
<td>Propositional attitude predicate</td>
<td>‘think’</td>
<td>ru?</td>
</tr>
<tr>
<td>Propositional attitude predicate</td>
<td>‘assume/seem’</td>
<td>ya?</td>
</tr>
<tr>
<td>Utterance predicate</td>
<td>‘say’</td>
<td>mha?</td>
</tr>
</tbody>
</table>

Mayrinax Atayal represents a unique, complicated situation in that the semantic domain of sentential propositions is divided into six classes, each of which represents a different group of CPT verbs and is signified by a separate clause linker. Tsou demonstrates another unique pattern. In Tsou, there is a two-way distinction: one is marked by an covert linker (Ø) and the other by overt linkers ho/hoci/honci. In terms of the full complement clauses marked by the overt linkers, they can be further divided into indicatives preceded by ho and subjunctives by hocil/honci. Other Formosan languages fall into a third pattern: all the full complement clauses are consistently marked by the same linker, such as the covert linker Ø in Amis and the overt linker tu in Paiwan, as shown in Table 6.2.

6.1.2 Constructions with a shared argument

Formosan languages employ two distinct syntactic operations to encode a shared argument over two events: control constructions and serial verb constructions. The former involves a bi-clausal construction in which a matrix argument is coreferential with an empty category in the defective complement clause. The latter is a monoclausal structure with two juxtaposed verbs, which have a shared argument. Logically, there are four possible conditions of co-reference for languages: (i) the actor of the first verb (V₁) is coreferential with the actor of the second verb (V₂); (ii) the actor of V₁ is coreferential with the patient of V₂; (iii) the patient of V₁ is coreferential with the actor of the V₂; and
(iv) the patient of V₁ is coreferential with the patient of V₂. The logically possible combinations and those actually attested in Amis, Maryinax Atayal and Tsou are illustrated in Table 6.3 below.

Table 6.3. Possible conditions of co-reference over two events illustrated with Amis, Maryinax Atayal, and Tsou.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Constructions</th>
</tr>
</thead>
</table>
| (i) actor of V₁ is coreferential with actor of V₂ | Actor control (Amis/Maryinax Atayal)  
Apparent patient control (Tsou)  
SVC (Tsou) |
| (ii) actor of V₁ is coreferential with patient of V₂ | Actor control (Amis/Maryinax Atayal)  
SVC (Tsou) |
| (iii) patient of V₁ is coreferential with actor of V₂ | Patient control (Amis/Maryinax Atayal/Tsou) |
| (iv) patient of V₁ is coreferential with patient of V₂ | Apparent patient control (Tsou) |

Each of the four conditions will be discussed below.

**Condition (i): Actor of V₁ is coreferential with actor of V₂**

Two different syntactic operations (SVC and control) are adopted in the coreferential condition where the actor of V₁ is coreferential with the actor of V₂, as shown in Table 6.4.

Table 6.4. Types of constructions with a shared actor over two events illustrated with Amis, Maryinax Atayal, and Tsou.

<table>
<thead>
<tr>
<th>Construction</th>
<th>Control</th>
<th>Apparent patient control</th>
<th>SVC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linker</td>
<td>Actor control</td>
<td>Covert linker</td>
<td>Overt linker</td>
</tr>
<tr>
<td>Language</td>
<td>Overt linker</td>
<td>Overt linker</td>
<td>No linker</td>
</tr>
<tr>
<td></td>
<td>Mayrinax Atayal (??)</td>
<td>Amis (Ø)</td>
<td>Tsou (ho)</td>
</tr>
</tbody>
</table>

In the previous Formosan studies, the constructions with a shared actor over two verbs (especially without an overt linker) were treated as an SVC (e.g., Wu 1994, Lillian Huang 1995a, Yung-li Chang 2006a, and many others). My analysis reveals that only the relevant constructions in Tsou are the instances of genuine SVCs, as evidenced in two respects. First, there is only one single set of TAM indicated by a single shared auxiliary verb. Second, no linker (signaling the grammatical relationship like complementation) is
allowed to intervene between the juxtaposed verbs in the Tsou SVCs. Accordingly, it is characterized as “no linker” in Table 6.4.

On the other hand, it is problematic to treat the constructions with a shared actor in other Formosan languages (e.g., Amis and Mayrinax Atayal) as an instance of SVC though they appear to have the same constituent order as an SVC. The control analysis for these seemingly SVC constructions is supported by the crucial fact that each of the contiguous verbs carries a separate TAM. Thus, this study argues that the verb sequences in the Formosan languages other than Tsou should be analyzed as a bi-clausal control construction. As illustrated in Table 6.4, the defective complement clauses in the control constructions with a shared actor is either marked with an overt linker, such as $?i?$ in Mayrinax Atayal and $ho$ in Tsou, or with a covert linker in Amis. Most of the Formosan languages do not have a linker for the constructions with a shared actor, as shown in Table 6.5.

Table 6.5. List of syntactic categories homophonous with clause linkers for constructions with a shared actor in Formosan languages.

<table>
<thead>
<tr>
<th>Homophonous syntactic category</th>
<th>Formosan language(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger and/or accusative marker</td>
<td>Mayrinax Atayal ($?i?$), Paiwan ($a$)</td>
</tr>
<tr>
<td>Coordinating conjunction</td>
<td>Tsou ($ho$)</td>
</tr>
<tr>
<td>Covert linker/no linker</td>
<td>Amis, Bunun, Kavalan, Puyuma, Rukai, Seediq, Saisiyat, Thao, Tsou</td>
</tr>
</tbody>
</table>

Regarding the control operation encoding a shared actor, there are two kinds of control constructions—actor control and apparent patient control. Except for Tsou, which utilizes SVC, most Formosan languages adopt actor control constructions, as discussed in Amis (Section 3.2.1.1) and Mayrinax Atayal (Section 4.2.1.1). The semantic types of most CPT verbs for the constructions with a shared actor fall into four types: achievement predicates (e.g., ‘learn’), desirative predicates (e.g., ‘want’), phasal predicates (e.g., ‘finish’), and commentative predicates (e.g., ‘like’).

However, the Tsou manipulative predicates which normally appear in the patient control (e.g., ‘force’) is found in a variant of actor control, that is, apparent patient control. Structurally, the Tsou apparent patient control not only involves a shared actor but its
semantics is closely related to “object control” (that is, patient control) where the matrix patient controls the reference of the missing actor argument in the embedded clause. According to Chang & Tsai (2001), some patient control constructions in Formosan languages observe “actor sensitivity”, which requires actor outrank other arguments (e.g., patient) in the same clause. In order to meet the actor sensitivity constraint, the embedded verbs of the apparent patient control is required to undergo causativization and has a newly added covert causer argument which is coreferential with the matrix actor instead of the matrix patient. As a result, the patient gap is coreferential with the matrix patient. The relevant construction is called apparent patient control in this study, as, structurally, the apparent patient control belongs to actor control, not patient control. As exemplified in Tsou apparent patient control in Section 5.2.1, most control sentences with certain manipulative verbs appear in the apparent patient control construction.

**Condition (ii): Actor of \( V_1 \) is coreferential with patient of \( V_2 \)**

Exactly like the constructions with a shared actor, the syntactic operations for encoding for the construction in which the actor of \( V_1 \) is coreferential with the patient of \( V_2 \) are actor control and SVC in Formosan languages. The only difference is that there is no apparent patient control attested in this coreferential condition since the apparent patient control only occurs in the constructions with a shared actor.

**Condition (iii): Patient of \( V_1 \) is coreferential with actor of \( V_2 \)**

Across Formosan languages, patient control construction is a commonly used operation to express the condition in which the patient of \( V_1 \) is coreferential with the actor of \( V_2 \). As shown in Table 6.6, most of the patient control constructions in Formosan languages have a covert linker to connect the defective complement clauses, such as Amis discussed in Section 3.2.1.2. The Formosan languages which have a overt linker in the patient control include Mayrinax Atayal (ʔiʔ), Paiwan (a), Tsou (ho) and Rukai (la), as shown in Table 6.6.
Table 6.6. List of syntactic categories homophonous with clause linkers for patient control in Formosan languages.

<table>
<thead>
<tr>
<th>Homophonous syntactic category</th>
<th>Formosan language(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger and/or accusative marker</td>
<td>Mayrinax Atayal (ʔiʔ), Paiwan (a)</td>
</tr>
<tr>
<td>Coordinate conjuncton</td>
<td>Tsou (ho), Budai Rukai (la)</td>
</tr>
<tr>
<td>Covert linker/No linker</td>
<td>Amis, Bunun, Puyuma, Seediq, Saisiyat, Thao</td>
</tr>
</tbody>
</table>

It is notable that Kavalan is not included in the list of Formosan languages which have patient control construction. According to Chang & Tsai (2001), the verbs in the patient control complements are required to undergo causativization in Kavalan. Hence, it is expected that all the control sentences with the manipulative verbs in Kavalan occur in the apparent patient control, not in the patient control.

**Condition (iv): Patient of V₁ is coreferential with patient of V₂**

In the three Formosan languages studied here, the condition where V₁ and V₂ have a shared patient is only attested in Tsou apparent patient control. The apparent patient control has the following two properties. First, the embedded verb is causativized in order to meet the requirement of actor sensitivity. Second, the embedded clause contains two null arguments: a covert causer (coindexed with the matrix actor) and a covert patient (coindexed with the matrix patient). The present study proposes that the covert causer is PRO, and that the covert patient of apparent patient control is a phonetically null pronoun (pro).

Regarding control constructions, there are two constraints attested in Amis, Mayrinax Atayal, and Tsou. First, the matrix clauses must have an overt trigger argument in both actor control and patient control, as shown in Table 6.7 and Table 6.8, respectively. The matrix trigger requirement of Formosan control can also account for the fact that the matrix and embedded verbs cannot be both NAT-marked in actor control, as shown in Table 6.7.
Second, the controlee needs to be trigger-marked in actor control of the three target languages. As seen in Table 6.7, the controlee is restricted to trigger in all types of actor control constructions—actor control (Amis/Mayrinax Atayal), raising in actor control (Amis/Mayrinax Atayal), and apparent patient control (Tsou). The trigger-only constraint is also applicable to the controlee of patient control in Mayrinax Atayal and Tsou, as illustrated in Table 6.8. In addition to the trigger-only constraint, the controlee of patient control needs to be an actor in Mayrinax Atayal and Tsou. Accordingly, the embedded verb of patient control is required to be AT-marked. Different from Mayrinax Atayal and Tsou, Amis patient control is not subject to the trigger-only constraint and the controlee can be trigger-marked or nominative-marked. Thus, Amis patient control allows the embedded clauses to be AT or NAT-marked.

### 6.1.3 Constructions with a “raised” argument

Raising phenomena have never been widely studied in the existing Formosan literature. This study examines the complementation constructions involving “raising” in three Formosan languages—Amis, Mayrinax Atayal and Tsou, as discussed in Section 3.2.2,
Section 4.2.2 and Section 5.2.2, respectively. The investigation in this dissertation shows that the complementation constructions with a “raised” argument are not necessarily raising as defined in the Generative Grammar. Rather, it has been shown that most of the cases of apparent raising are better analyzed as involving A’-movement (an instance of null operator movement) rather than A-movement (raising).

**A-movement: Raising in the NAT-AT actor control**

There are, however, a few instances of true raising, i.e., obligatory movement of an NP to a matrix argument position. In the actor control construction, the accusative patient of the embedded clause is obligatorily moved to the matrix trigger position in the NAT-AT actor control construction. This movement is obligatory due to a constraint that requires an overt trigger NP in the matrix clause, as shown in the repeated Amis and Mayrinax Atayal examples below.

(3.89) Amis: Actor control construction (Repeated)

a. ma-pawan tu nura matu?asayi, **kura wawa**j [ Ø 
   PT-forget ASP NOM.that old.man T.that child LNK
   mi-palu? Δi _____j].
   AT-beat
   ‘That old man forgot to beat that child.’

b. ma-pawan tu nura matu?asayi _____j [ Ø mi-palu?
   PT-forget ASP NOM.that old.man LNK AT-beat
   Δi _____j ] **kura wawa**j.
   T.that child
   ‘That old man forgot to beat that child.’

c. *ma-pawan tu nura matu?asayi Ø [ mi-palu? Δi
   PT-forget ASP NOM.that old.man LNK AT-beat
   tura wawa].
   ACC.that child

(4.152) Mayrinax Atayal: Raising in the actor control construction (Repeated)

*?unji? an nku? ulaqi?i, **ku? ruas**j ¿i? [ mi-taal _____j Δi ].
   forget-LT.NFUT NOM child T book LNK AT-see
   ‘The child forgets to read a book.’

b. Mayrinax Atayal: Non-raising correspondence

   forget-LT.NFUT NOM child LNK AT-see ACC book
   ‘The child forgets to read a book.’
This suggests a constraint in that there must be an overt trigger NP in the whole sentence of Formosan control, as illustrated in the Amis control and Atayal control in Section 3.2.1 and Section 4.2.1, respectively. Note that the examples of raising in the NAT-AT actor control can be found in Amis and Mayrinax Atayal, not in Tsou\textsuperscript{172}.

\textbf{A’-movement: “Raising-to-trigger” and “Raising-to-accusative”}

Across Formosan languages, a “raising” phenomenon is commonly found, in which the trigger NP of a full complement clause appears in the trigger position of the matrix clause. This is referred as “RtoT”, as discussed in Amis (Section 3.2.2.1), Mayrinax Atayal (Section 4.2.2.1), and Tsou (Section 5.2.2). The prerequisite for “RtoT” is that the matrix clause is NAT-marked, so that the matrix trigger position is potentially available, not occupied by any overt NP. In addition to the “RtoT”, the embedded trigger can also occur in the accusative position of the AT-marked matrix clause. This is referred as “RtoA” in this study, as discussed in Amis (Section 3.2.2.1). Note that the “RtoA” is not common across Formosan languages. Among the three languages under investigation, “RtoA” is found only in Amis.

It is worthy of attention that only the trigger bound personal pronouns in Mayrinax Atayal can undergo “RtoT” among the three target languages. The “RtoT” is available to Mayrinax personal clitics in three types of complementation constructions: cuʔ-marked complementation, yuʔ-marked complementation, and naʔ-marked complementation. However, the Mayrinax embedded trigger NP can undergo “RtoT” only in the cuʔ-marked complementation. The distributional distinction between the clitic pronouns and overt NPs suggests that the “RtoT” operation was originally limited to clitic pronouns, but later has extended to the non-pronominal arguments in the cuʔ-marked complementation. The bound personal pronouns in Tsou are always attached to the local hosts so that they cannot move out of the local domain. As for Amis, there is no bound personal pronoun in its pronominal system. Table 6.9 demonstrates the distribution of the “RtoT” and “RtoA” in Amis, Mayrinax Atayal, and Tsou.

\footnote{\textsuperscript{172} In Tsou, there is no actor control construction, as SVC is adopted instead. Accordingly, it is impossible to have raising in the actor control.}
Table 6.9. “RtoT” and “RtoA” illustrated with Amis, Mayrinax Atayal, and Tsou.

<table>
<thead>
<tr>
<th>Construction</th>
<th>“Rasing-to-trigger”(“RtoT”)</th>
<th>“Raising-to-accusative”(“RtoA”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moved argument</td>
<td>Trigger NPs and free pronouns</td>
<td>trigger clitic pronouns</td>
</tr>
<tr>
<td>Language(s)</td>
<td>Amis, Mayrinax Atayal, Tsou</td>
<td>Mayrinax Atayal</td>
</tr>
</tbody>
</table>

At first glance, the “RtoT” and “RtoA” look like raising. A careful examination reveals, however, that they cannot be treated as an instance of raising as defined in the generative literature. This is evidenced mainly in two respects. First, raising is an obligatory operation, while both “RtoT” and “RtoA” are optional. Second, raising moves an NP from a non-Case position to a Case position, while “RtoT” and “RtoA” involve two Case positions.

Based on the above, this study argues that the “RtoT” and “RtoA” do not involve raising. Rather, they are the instances of A’-movement in a way similar to the tough-construction in English. According to Chomsky (1977), the tough-construction involves movement of a null operator (OP), which originates in the embedded clause, moves to its specifier position, and then is co-indexed with the matrix subject, as shown in (6.2).

(6.2) a. It is tough [ PRO to pass the entrance exam].
   b. The entrance exam is tough [ OP, [ PRO to pass ____i ]].

The movement involving “RtoT” and “RtoA” is similar to the one of the tough-construction, as evidenced in two respects. First, the movement is optional in both constructions. Second, the matrix subject/trigger position taken as the target of the “raised” argument in the embedded complement clause is an argument position to which a thematic role can be potentially assigned by the matrix predicate. Third, the original and the target positions are both Case positions. Because of the similarities, the null operator analysis for the tough-construction is also applicable to account for the “RtoT” and “RtoA” in Formosan languages. Applying the operator movement analysis, the base structures of “RtoT” and “RtoA” are illustrated by the repeated Amis examples below, respectively.
As seen in (3.74a) and (3.75a), the matrix trigger/accusative argument is assumed to be base-generated. Meanwhile the null operator is moved to the specifier position of the complementizer phrase (CP) and A’-binds its trace. The matrix trigger/accusative argument is coreferential with the operator, and in turn, with the embedded trace. The null operator analysis is supported by the fact that the wh-movement (involving null operator movement) is also restricted to trigger arguments in the three target languages.

6.2 Possible historical development involving complementation

As shown in Section 6.1.1, the clause linkers are homophonous with various items. The homophony suggests that these complementizers may have their sources in these homophonous items. Among the homophonous items of the clause linkers, the possible
sources of the clause linkers includes: (i) accusative Case marker; (ii) coordinating conjunction; and (iii) verb of saying. In this section, a diachronic development of clause linkers is explored by scrutinizing the three sources of clause linkers. I will return to this task after a brief introduction of the cline of clause linkage proposed by Hopper & Traugott (2004).

Hopper & Traugott (2004:184) states that “The world’s languages display a wide variety of techniques for linking clauses into tighter amalgamations.” Based on this observation, Hopper & Traugott (2004:178) propose “a cline of clause combining” for three constructions, each of which is specified by the features ± dependent, ± embedded, as shown below:

(6.3) Cline of clause combining: (Hopper & Traugott 2004:178)

\[
\begin{array}{ccc}
\text{parataxis} & \rightarrow & \text{hypotaxis} & \rightarrow & \text{subordination} \\
-\text{dependent} & & + \text{dependent} & & + \text{dependent} \\
-\text{embedded} & & -\text{embedded} & & + \text{embedded}
\end{array}
\]

The cline of clause combining suggests that the development of the clause linkers is unidirectional in that a looser construction is turned into a tighter construction, as divided by three syntactic relations. The structure(s) on the left side of the arrow tend to evolve into the structure(s) on its right side, not vice versa. “Parataxis” represents the loosest end of the cline, which traditionally covers all kinds of juxtaposition of independent sentences without an overt linker (i.e., conjunction and subordinator), such as “The boy woke up in the morning. His right eye was glued shut.” Coordinating structure is taken as a later development of the parataxis. As for the intermediate stage of “hypotaxis”, it refers to a construction in which one or more clauses are not fully independent/dependent, such as the adverbial clauses like “If it rains tomorrow, I will stay home”. Subordination is positioned as the tightest end of this cline. In the structure of subordination, subordinate clauses are both dependent and embedded in relation to the matrix clauses.

Let us begin with the case of grammaticalization of a ‘say’ verb by examining its structural variations before and after the grammaticalization. Crosslinguistically, it is common that a verb of ‘saying’ is grammaticalized into a complementizer, attested in languages, such as Ewe (Lord 1974), Akkadian (Deutscher 2000), Greek (Hopper &
Traugott 2004), Mañea (Guerin 2008), etc. The grammaticalization of a ‘say’ verb into a complementizer is also attested in Mayrinax Atayal. As discussed in Section 4.1.6.2, the complementizer mha? may have its origin in the homophonous verb of saying mha?. The complex sentences with the linker mha? change in accordance with the grammaticalization of mha?, as shown in Table 6.10.

<table>
<thead>
<tr>
<th>Status</th>
<th>Before grammaticalization</th>
<th>After grammaticalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td>SVC</td>
<td>complementation</td>
</tr>
<tr>
<td>Clause linker</td>
<td>verb of saying mha? ‘say’</td>
<td>mha? ‘(complementizer)’</td>
</tr>
</tbody>
</table>

Before the grammaticalization of mha?, the construction appears in an SVC in which mha? ‘say’ serves as the second verb of the verb juxtaposition. The grammaticalization of mha? is accompanied by the reanalysis of the elements following the complementizer mha? as a clausal complement. This structural change is followed by a new requirement that another ‘say’ verb needs to be placed in the matrix clause when mha? functions as the complementizer of the clause. The structural change in the grammaticalization of mha? fits the cline of the clause combining, as it is switched from a hypotactic structure of SVC into a subordinate structure of complementation. A similar grammaticalization is also found in another Formosan language Thao, where a ‘say’ verb mðay appears in a complementation construction with a full complement clause. For example:

(6.4)  a. Thao: verb mðay
   ina m-ðay yakin, “kan sa sanpaʔan!”
   Mother AT-say 1S.ACC IMP.AT.eat  ACC dish
   ‘Mother told me, “Eat this dish!”’

b. Thao: clause linker mðay
   ma-faðaq yaku mðay, “ihu t<m>upar ətθu”.
   AT-know 1S.T LNK 2S.T beat<AT> 3S
   ‘I know, “You beat him”.’
The two cases of reanalysis also follow Hopper & Traugott’s (2004) cline of clause combining: both are involved with turning a loose structure into a tight subordination. The first case involves the reanalysis of an accusative Case marker into a complementizer. Accusative Case marker (or morpheme) is another well-attested source of complementizers (Noonan 1985 and Hopper & Traugott 2004). As far as Formosan languages are concerned, accusative Case markers are the most common source of complementizers in that it is found in several languages, including Mayrinax Atayal (cuʔ), Puyuma (da), and Bunun/Kavalan/Paiwan (tu). However, the accusative Case markers (i.e., cuʔ, da, and tu) reanalyzed as complementizers in these genetically related languages are not cognates, as evidence by their sound correspondences, thus suggesting this might be a common, independent development.173

The exemplary case of the reanalysis discussed in this study is the accusative Case marker cuʔ in Mayrinax Atayal. The accusative Case marker cuʔ has been reanalyzed as a complementizer for a complementation construction with a cognition/perception verb. As shown in Table 6.9., we may hypothesize that the complement clause led by the complementizer cuʔ used to be an accusative-marked theme of some cognition/perception verbs. That is, it was structurally a nominal (or nominalized) clause marked by the accusative Case marker cuʔ. Later, the accusative marker cuʔ was reanalyzed as a complementizer and the nominal clause marked by cuʔ, in turn, as a complement clause. The process of the structural change in the reanalysis of the accusative marker cuʔ is also an instance of switching from a hypotactic structure into a subordinate structure.

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173 Thanks to Robert Blust for bringing this point to my attention (Robert Blust, personal communication, March 30, 2011).
Table 6.11. Two cases of reanalysis involving complementation in Mayrinax Atayal and Tsou.

<table>
<thead>
<tr>
<th>After reanalysis</th>
<th>Clause linker</th>
<th>Complement clause</th>
<th>Complementation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before reanalysis</td>
<td>accusative marker</td>
<td>nominalized clause</td>
<td>Structure: V-Theme(Patient)-Actor Theme (Patient): Accusative marker + nominalized clause</td>
<td>cu?-marked complementation (Mayrinax Atayal)</td>
</tr>
<tr>
<td></td>
<td>coordinating conjunction</td>
<td>conjoined clause</td>
<td>Coordinate construction: Clause₁ + and + Clause₂</td>
<td>ho-marked complementation (Tsou), ru?-marked complementation (Mayrinax Atayal)</td>
</tr>
</tbody>
</table>

Another instance of reanalysis attested in this dissertation is the development of a coordinating conjunction into a complementizer in Mayrinax Atayal (ru?) and Tsou (ho), as shown in Table 6.11. In Tsou, the coordinating conjunction ho is used as a general complementizer (Section 5.1.1.2), while Mayrinax Atayal is restricted to few CPT verbs which select ru? as a complementizer (Section 4.1.2.2). We may hypothesize that the two clauses linked by ho used to be a coordinate structure with ho being a coordinating conjunction. However, the coordinating conjunction for connecting clausal equivalents was reanalyzed as a subordinator (including complement clauses and adverbial subordinate clauses). This reanalysis is evidenced by a distributional gap in the occurrences of the coordinating conjunctions. Coordinating conjunctions can connect all kinds of constituent equivalents except for clausal equivalents.

Based on Hopper & Trauggot’s (2004) cline of clause combining, the reanalysis of the coordinating conjunction in Mayrinax Atayal and Tsou is an instance of evolvement from parataxis into subordination. At the same time, the development of the coordinating conjunction in this study also matches Tsai’s (2007) process of “coordinative reduction” by examining the infinitive complements of manner predicates and adverbial subordinate clauses in three representative Formosan languages—Amis, Squliq Atayal and Tsou. Tsai (2007) proposes two directions for the conjunctive reduction, both of which are associated with evolving from a coordinate structure into a subordinate structure. The difference is that one direction ends in a complement clause and the other in an adverbial subordinate clause.
Before concluding the discussion of the historical development of the clause linkage markers, it is worthy of notice that these processes are still on-going at different stages. Among the three cases, the Mayrinax clause linker cu? historically derived from an accusative Case marker has become a full-fledged complementizer. This is evidenced by the fact that the clause linker does not have any shared properties with the accusative marker, as discussed in Section 4.1.1.2.

As for the development of the Mayrinax ‘say’ verb mha? and the Mayrinax/Tsou coordinating conjunctions into complementizers, both developments are still in progress, as suggested by the fact that they exhibit some properties of their origins. For example, the verbal usage of mha? is still common in Mayrinax Atayal, though its verbal function is defective and, accordingly, a variety of ‘say’ verbs (e.g., k<um>aal ‘say’) replace its verbal position (see Section 4.1.6.2). Regarding the coordinating conjunctions (i.e., ho in Tsou and ru? in Mayrinax Atayal), the reanalysis is still at an early stage since these clause linkers carry the properties of both a coordinating conjunction and a complementizer. For instance, a wh-element cannot be extracted out of the embedded clause led the Mayrinax clause linker ru? (Section 4.1.2.2). In Tsou, the structure with the clause linker ho per se is structurally ambiguous with two possible interpretations—coordination and subordination.

Furthermore, these on-going processes of grammaticalization/reanalysis in Formosan languages shed some light on the seamless relationship between synchronic and diachronic domains. Campbell (1991:294) indicates that “Changes in structure may affect the syntax of grammatical relations before the morphology that encodes, with the result that morphology may reflect a previous syntactic situation”. The domain of linguistic studies is, most of the time, divided into two discrete and arbitrary dimensions, that is, synchronic linguistics and diachronic (historical) linguistics. Diachronic linguistics is taken as dealing with structural changes in the time flow, while synchronic linguistics as structural variations at a single point in time. However, the development of the Formosan clause linkers also demonstrate that structural variations and structural changes are, in fact, on the two sides of the same coin. In other words, the structural variations nowadays may correspond to different structures in the historical development.
6.3 Split subjecthood

“Subject” is a problematic notion in the Formosan languages, as the syntactic properties which are typically characteristic of the subject in other languages (e.g., English) distribute over two categories—actor and trigger (also called as “topic”, “pivot”, “absolutive”, “focused NP” in the literature). Since Schachter’s (1976) pioneering work on the split subjecthood in the Philippine languages, split subjecthood has also been observed in genetically related Formosan languages, including Amis, Mayrinax Atayal and Tsou investigated in this dissertation. Ya-yin Chang’s (2004) intensive work on Tsou subjecthood is an exemplary study of the split subjecthood in Formosan languages. Ya-yin Chang (2004:36–40) provides some facts to demonstrate the split subjecthood in Tsou as summarized in Table 6.12 below.


<table>
<thead>
<tr>
<th>Pivot/“subject”-sensitivity properties</th>
<th>Actor-sensitive properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Relativization</td>
<td>(ii) Grammatical agreement</td>
</tr>
<tr>
<td></td>
<td>(iii) Reflexive binding</td>
</tr>
<tr>
<td></td>
<td>(iv) Control</td>
</tr>
<tr>
<td></td>
<td>(v) Imperative addressee</td>
</tr>
</tbody>
</table>

The goal of this section is to discuss the split subjecthood exhibited in complementation in the three typologically representative Formosan languages—Amis, Mayrinax Atayal, and Tsou. The present study has shown that both trigger and actor behave like “subject” in the three languages under investigation. Three conditions have been observed: (i) syntactic prominence of actor; (ii) syntactic prominence of trigger; and (iii) syntactic prominence of trigger-actor NPs.

Condition (i): Syntactic prominence of actor

In Formosan languages, some syntactic operations only apply to the actor argument, not to the trigger argument, such as reflexive binding, actor control, etc. In many other languages (e.g., English), these syntactic operations apply only to subject. Chang & Tsai (2001) propose an “actor-sensitivity” for such phenomena restricted to actor in Formosan languages. As shown in the previous chapters, actor sensitivity is consistently attested in the syntactic operations involving complementation in Amis, Mayrinax Atayal, and Tsou, as summarized in Table 6.13.
Table 6.13. Actor-sensitivity attested in the constructions involving complementation.

<table>
<thead>
<tr>
<th>Construction</th>
<th>Properties/constraints displaying actor sensitivity</th>
</tr>
</thead>
</table>
| Control      | (i) Actor serves as a controller in actor control (Amis/Mayrinax Atayal) and apparent patient control (Tsou).  
               (ii) Gap must be an actor in the patient control (Mayrinax Atayal/Tsou) and apparent patient control (Tsou). |
| SVC          | (iii) The shared argument must be an actor in same-actor SVC (Tsou). |

**Condition (ii): Syntactic prominence of trigger**

In opposition to the actor-sensitivity, subjecthood is sometimes assigned to a trigger NP instead of an actor NP. In this dissertation, a trigger argument refers to the most syntactically prominent argument whose thematic role is registered on the verbal morphology in a clause. Like the nominative marking for subjects, there is a grammatical marking (i.e., agreement) for the argument in question, which is referred as “subject”, “topic”, “trigger”, “pivot”, “absolutive”, “specifier”, and so on in the Austronesian syntactic studies. This study adopts the term “trigger”, as it is taken as an agreement operation in which the verbal morphology triggers agreement with a highlighted argument in the same clause. Since Chang & Tsai (2001) proposes an “actor-sensitivity” for the condition when the subjecthood is carried by the actor argument, this study proposes “trigger-sensitivity” for the syntactic operation which treats the trigger argument as “subject”. Based on the findings in the previous chapters, the phenomena which observe trigger-sensitivity are summarized in the following table.

Table 6.14. Trigger-sensitivity attested in the constructions involving complementation.

<table>
<thead>
<tr>
<th>Construction</th>
<th>Properties/constraints displaying trigger-sensitivity</th>
</tr>
</thead>
</table>
| Control      | (i) Similar to EPP, the matrix trigger position is required to be occupied by an overt argument in control constructions (Amis/Mayrinax Atayal/Tsou).  
               (ii) The controlee must be a trigger in actor control (Amis/Mayrinax Atayal/Tsou) and in patient control (Mayrinax Atayal and Tsou). |
| SVC          | (iii) The shared argument must be a trigger in same-trigger SVC (Tsou). |
| “RtoT”       | (iv) Only an embedded trigger NP can undergo “RtoT” (Amis/Mayrinax Atayal/Tsou).  
               (v) Only an embedded trigger clitic pronoun can undergo clitic climbing (Mayrinax Atayal). |
Condition (iii): Syntactic prominence of trigger-actor NPs

Actor-sensitivity and trigger-sensitivity as attested in Formosan complementation do not necessarily appear in a complementary distribution. Instead, there is some overlap between actor-sensitivity and trigger-sensitivity, as evidenced by the fact that the patient control construction exhibits both actor-sensitivity and trigger-sensitivity. The controlee needs to be a trigger actor in the patient control (Mayrinax Atayal and Tsou) and in apparent patient control (Tsou).

6.4 Conclusion

This study has provided a comprehensive description of the major syntactic constructions involving complementation in three representative Formosan languages (i.e., Amis, Mayrinax Atayal, and Tsou) by investigating some relevant syntactic operations, properties, and constraints. The research questions concern the following three issues: (i) predicates involving complementation; (ii) clause linkers; and (iii) missing arguments in the defective complement clauses.

Morphology of the predicates is indicative of how the clauses/predicates are constructed, as shown in the complementation study on Amis, Mayrinax Atayal and Tsou. In the constructions with a full complement clause, the embedded full clause behaves like an independent clause in all three languages. This is reflected in the fact that there is generally no restriction on the TAM and trigger marking on the predicates of the matrix/embedded clauses. The constructions with a full embedded clause belong to a complement type of subordination.

Different from constructions with a full complement clause, some constraints are attested in the constructions with a shared argument. In the three languages, the syntactic operations for encoding a shared argument over two predicates include control and serial verb construction (SVC). The SVCs are only found in Tsou when the actor of the first predicate is co-referential with the actor/patient of the second predicate. The predicates in the SVCs need to be identical in their TAM, as indicated by a shared auxiliary verb which carries tense and aspect information. On the other hand, the Tsou SVCs need not be identical in their trigger marking. One type of SVC (i.e., same-actor SVC) requires
that the trigger marking on both predicates be identical, while the other type (i.e., same-trigger SVC) does not.

Control constructions in the three languages demonstrate a different pattern of restrictions on the predicates, mainly on the predicates of the complement clauses. The TAMs of the complement clauses in all control constructions of the three languages are defective in a way similar to infinitive verbs in other languages (e.g., English), as they cannot select a full range of TAMs. They can only be inflected for a trigger marker and/or a future tense.

Clause linkers serve as a useful analytical tool to investigate the grammatical relationship of the clause/predicate linkage and even to infer the historical development of these linkers and the relevant constructions. Take Mayrinax Atayal for example. Mayrinax Atayal has the largest number of clause linkers (i.e., six) across Formosan languages. The six clause linkers function as complementizers in contemporary Mayrinax Atayal. Meanwhile, the six clause linkers are homophonous with six different items in Mayrinax, which suggest various possible sources of the complementizers in the historical development. Some of the clause linkers manifest certain syntactic properties of the homophonous item, such as the linker ruʔ (homophonous with the coordinating conjunction). On the other hand, some clause linkers do not have the syntactic properties of the homophonous items. However, this does not necessarily mean that this clause linker does not have its origin in the homophonous item. For instance, the linker cuʔ homophonous with the accusative marker cuʔ does not show any property of an accusative marker, as it has already evolved into a pure complementizer.

As for the predicate/predicate linkage without an overt linker, there are two possibilities for the constructions with an apparent verb sequence: SVC with no linker and complementation with a complementizer. In the previous studies, the seeming verb-verb sequence without an intervening linker is viewed as an instance of SVC (e.g., Lillian Huang 1997 and Yung-li Chang 2006a). The present study shows that apparent SVC constructions in Amis are better analyzed as control constructions, as supported by the fact that each of the contiguous verbs carries a separate TAM.
Examination of the missing arguments in the complementation constructions demonstrates how the notion “subject” is realized in the Formosan languages. Since Schachter’s (1976) pioneering work on split subjecthood in Philippine languages, some syntacticians started to pay attention to the puzzle of how subject properties distribute over the actor NP and the prominent NP (i.e., trigger) in the Philippine-type languages (including Formosan languages). In other languages (e.g., English), the missing arguments in complementation constructions (mainly, control and raising) are confined to the embedded subject position. Instead of an equally shared subjecthood between the actor NP and trigger NP, the empty categories in the complementation constructions are mostly confined to an embedded trigger position. In all the control constructions, the controlee is consistently restricted to an embedded trigger position in all the three languages. As for the A’-movement of “RtoT” and “RtoA”, both are only applicable to the embedded trigger argument.

On the other hand, the empty categories need be a trigger actor in the patient control of Mayrinax Atayal and Tsou. On the contrary, there seems to be an equal share of subjecthood between actor and trigger in terms of the matrix arguments which are coreferential with the embedded empty categories, however. An actor NP serves as a controller in the actor control constructions, but a trigger NP does not (though the actor controller can be trigger). In the “RtoT” construction, the empty categories are coreferential with the matrix trigger NP, not the matrix actor NP.

Although most of the syntactic constructions involving complementation in the three Formosan languages have been discussed in the existing literature, the present study has achieved three new objectives. First, it has given an accurate and comprehensive descriptive analysis of the constructions involving complementation in the three target languages with some additional data. Second, it has provided some historical accounts for the development of clause linkers and their current status. Third, it has discussed the implications of the findings on the syntactic constraints of the syntactic operations and empty categories from the view point of the typology of Formosan languages, mainly in exploring split subjecthood in the Formosan languages.

This cross-Formosan study has achieved a better understanding of Formosan complementation and related constructions, and provides a base for future studies. There
are two main directions for future research. First, the synchronic comparison between the complement clause and nominalized counterparts may display some residues of the historical development from an accusative Case marker into a complementizer. This comparison will help examine and even prove some hypotheses put forward in this study about the development of the clause linkers and their related constructions. Second, the structural variations of the control constructions seem to be indicative of a current syntactic change towards the direction of SVC in the Formosan languages with some additional data. This possible on-going change is suggested by several syntactic cues, such as an postposed trigger and nominative NPs, an optional clause linker, an obligatory raising in the actor control, etc. A study of subordinate structures other than complementation will be needed in order to have a better understanding about these syntactic operations and the changes involved.
REFERENCES


Liu, Dorinda Tsai-hsiu and Shigeru Tonoike. in preparation. Trigger analysis for Amis morphology.


