

RESULTATIVE AND DESCRIPTIVE CLAUSES AS MATRIX CLAUSES IN TSOU*

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Abstract

We examine two subtypes of *ho* clauses in Tsou- resultative and descriptive, and argue for their syntactic statuses of being adverbials. The first claim made in this study is that the conjunction *ho* is better analyzed as a subordinator, which introduces an adjunct clause, diverging from its coordination usage. The second claim is concerned about the syntactic positions that the *ho* clauses occupy. Syntactic evidence shows that the two *ho* clauses should be adjoined to vP or TP rather than CP. Finally, the process of grammaticalization of *ho* clauses proposed by Chang Y. Y (2003) will be supported and modified according to the findings in this paper.

1. Introduction

The conjunction *ho* typically functions as a coordinator 'and', as (1) shows. It also can introduce a temporal clause denoting a habitual or a future tense, while another conjunction *ne* contrastively introduces a temporal clause denoting a past tense, as in (2) and (3) respectively.

- (1) m-o peayof_{AV} ho mofti'i 'o mo'o.
AV-Real run.AV and jump.AV NOM Mo'o
'Mo'o runs and jumps.'

(Shen 2004)

*Tsou is one of the Austronesian languages spoken in southern Taiwan. It can be classified into two subgroups. One is northern Tsou, which can be further divided into three dialects- Tapang_{AV}, Tfuya, and Luhtu. Northern Tsou is mainly spoken on Mt. Ali and Nantou County. Another one is southern Tsou, which is composed of two dialects- Sa'alua and Kakanavu. Southern Tsou is spoken in Kaohsiung County. There are around 4000 speakers. The dialect under examination is Tfuya. The informants I consulted are Mo'o 'e Peongsi and Paic_{AV} 'e Tosk_{AV}. The data collected are from my field work during 2005 April to July.

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- (2) m-i-'o nac'o moyafo ho m-o mɔcɔ.
 AV-Real -1S dislike. AV go.out. AV when AV-Real rain. AV
 'I don't like to go out when it rains'
 (Shen 2004)
- (3) m-o-'u-n'a bonɔ ta tacɔmɔ ne m-oh-ta esmi.
 AV-Real-1S-still eat. AV Obl banana when AV-Real -3S come.AV
 'When he came, I was still eating bananas.'
 (Zeitoun 2002)

Except the above typical usages, the syntactic status of *ho*, which introduces other type of clauses, remains under controversial. According to the semantic relations holding between the clauses, I classify the clauses involving *ho* into the following eight types:

A. Locative expression

- (4) m-o eon to emoo 'o Pasuya [**ho** baito to tposɔ].
 AV-Real stay.AV Obl home Nom Pasuya HO read.AV OBL book
 'Pasuya reads at home.'

B. Resultative expression

- (5) m-i-'o ngoseo [**ho** m-i-'o macohio].
 AV-Real-1s tired.AV HO AV-Real-1s teach. AV
 'I teach so hard that I got tired.'

C. Descriptive expression

- (6) m-i-ta na'no mayahe/poha'o [**ho** m-i-ta
 AV-Real-3S very.AV fast.AV /late.AV HO AV-Real-3S
 peayofɔ/coeconɔ
 run.AV/ walk.AV
 'He runs/walks very fast/slowly.'
- (7) m-i-ta tumu-nanac'o [**ho** m-i-ta mongsi]
 AV-Real-3S loudly-very.sad.AV HO AV-Real-3S cry.AV
 'He was so sad from crying.'

D. Frequency expression

- (8) m-i-ta itoteohu [**ho** m-i-ta mongsi
 AV-Real-3S three-times.AV HO AV-real-3S cry. AV
 'e pasuya]
 NOM Pasuya
 'Pasuya cries for three times.'

E Duration expression

- (9) m-i-ta miteuhi [**ho** m-i-ta mongsi
 AV-Real-3S three-days. AV HO AV-Real-3S cry. AV
 'e pasuya]
 NOM pasuya
 'Pasuya cries for three days.'

F. Quantifier expression

- (10) te-to macicihi [**ho** ana 'o tacɰmɰ]
Irr-1P each HO eat.NAV NOM banana
'We will each eat the bananas.'

(Chang H.-L. 2005)

G. Ho type complementation (in Huang, Sung and Su (2000), a pivotal construction in Zeitoun (2000))

- (11) i-si cohivi to mo'o [**ho** m-o mihino to simeo
NAV-3S know.NAV OBL Mo'o HO AV-Real buy AV Obl pork
'o yangui]
NOM Yangui
'Mo'o knows that Yangui bought pork.'

(Shen 2004)

H. Instrument expression (purpose clause in Huang, Sung and Su (2000), a serial verb construction in Zeitoun (2000))

- (12) m-i-ta titho ta poyave [**ho** smucu ta fuzu
AV-Real-3S use.AV OBL knife HO kill.AV OBL wild-boar
'e pasuya]
NOM Pasuya
'Pasuya is using the knife to kill the wild boar.'

Shen (2004) argues against the treatment of G type (*ho* type complementation) as a coordinator in Zeitoun (2000) and as a complementizer in Huang, Sung and Su (2000). Shen claims for the adjunct status of the *ho* clause. In the line of Shen, I further examine the resultative (type B) and descriptive *ho* clauses (type C), and claim that the two clauses involved *ho* are adverbials, which occupy a low syntactic position, while the *ho* type complementation clauses are in a higher syntactic position, and thus are ad-sententials.

In the beginning of the paper, I introduce Shen's adjunction analysis for the *ho* complementation clauses, and this mismatch between syntax and semantics (semantically complementation, but syntactically adjunction) will also be discussed in Section 2. In next section, first, I argue that the clause linkage in resultative and descriptive *ho* clause is not coordination but subordination. Second, the two types of *ho* clauses should be analyzed as adverbials, rather complements or relative clauses. Third, since the *ho* clauses in question lack of illocutionary force, and syntactically behave differently from the *ho* type complementation clause, I claim resultative and descriptive *ho* clauses are in a low syntactic position. At the end of Section 3, the puzzle of optionality of auxiliaries in resultative and descriptive *ho* clauses will be discussed, and a plausible analysis will be proposed to account for it. Finally, the grammaticalization of conjunction *ho* proposed by Chang Y.Y. (2003) will be modified, according to the conclusion drawn in the previous sections. In addition, a cross-linguistic comparison will be made, specifically, Tsou with Mandarin Chinese, and the differences on the evolutionary direction of coordination to complementation should be attributed to the different typologies languages display.

2. Literature Review

I introduce Shen's study (2004) to start this section. Her analysis shows that there is a mismatch in Syntax and Semantics in *ho* type complement. The phenomenon of mismatch can also be seen in other languages, and the problem has been raised in Culicover and Jackendoff (1997). Before we discuss resultative and descriptive clauses in Tsou formally, English and Mandarin will be considered first, and it is shown that the resultative and descriptive clauses in Mandarin also exhibit the mismatch to some degree, whereas the English counterpart does not.

2.1 Shen's adjunction analysis of the *ho* type complementation.

In Shen (2004), she examines two types of clausal complement headed by *ho* and *no* respectively, as (13) and (14) show.

Ho type

- (13) i-si cohivi to mo'ο [**ho** m-o mihino to simeo
 NAV-3S know.NAV OBL Mo'ο HO AV-Real buy AV OBL pork
 'ο yangui]
 NOM Yangui
 'Mo'ο knows that Yangui bought pork.'
- (Shen 2004)

No type

- (14) m-o ngohe~~ng~~ [**no** cmuhu to teo'ua 'ο mo'ο]
 AV-Real afraid.AV **NO** kill.AV OBL chicken NOM MO'Ο
 'Mo'ο is afraid to kill chicken.'
- (Shen 2004)

Both (13) and (14) involve complement-taking predicates. The postverbal constituents in examples above are typically analyzed as complements in other languages, such as English and Mandarin. In the cases of Tsou, Zeitoun (2000) analyzed *ho* in (13) as a coordinator. However, Huang, Sung, and Su (2000) consider both *ho* and *no* as complementizers, which head non-finite and finite clause respectively. Moreover, they suggest that the semantics of verbs may influence the choices of complementizers. However, in Lin's thesis (2002), she argues that the determination of types of complements are of communication function instead of a mechanical result of choosing a given matrix verb. Moreover, she claims that the *ho* type complement shows less semantic dependency (in her term, semantic bond) with the matrix clause than the counterpart *no* clause does. She observes that first, TAM marker in the *ho* type complement can be different from the matrix clause, that is, the TAM system in *ho* type complement is independent of the matrix clause, as in (15)¹.

¹Tsou differs from other Formosan languages in that in this language, the information of tense, aspect and modality as well as voice is encoded in the sentential analytic auxiliaries (Tung 1964, Zeitoun 1992, 1996, 2000, Zeitoun et al. 1996, Weng 2000, Huang 2003).

- (15) \emptyset -os-'o cohivi [ho m-i-'o peis'epo]
 NAV-Real-1S know.NAV COMP AV-Real-1S make.mistake.AV
 'I know that I made mistake'
(Lin 2002)

Second, the *ho* type complement does not necessarily share the argument with the matrix clause, as in (16).

- (16) \emptyset -os-'o cohivi [ho m-o-so machu].
 NAV-Real-1S know.NAV COMP AV-Real-PERF rain.AV
 'I know that it rained.'
(Lin 2002)

Extending Lin's study, Shen (2004) claims that, although both *ho* and *no* clauses in (13) and (14) function as complements of the matrix verbs semantically, complement clauses introduced by *ho* display adjunction structurally, whereas *no* clauses are syntactic-deficient and are syntactic complements of the main verbs. She presents six pieces of evidence to show that *ho* type of complementation is syntactic-independent. Her findings are summarized as below.

(17) Differences between the *ho* type and the *no* type of complementation (Shen 2004:12)

<i>ho</i> type	<i>no</i> type
Auxiliaries are required in the <i>ho</i> clauses.	Auxiliaries are not allowed in the <i>no</i> clauses.
The <i>ho</i> clause is optional.	The <i>no</i> clause is required.
The agent NP of the main clause precedes the <i>ho</i> clause.	The agent NP of the main clause follows the <i>no</i> clause.
The <i>ho</i> clause can be fronted.	The <i>no</i> clause cannot be fronted.
Temporal/location adjuncts may be placed sentence-finally or between the main clause and the <i>ho</i> clause.	Temporal/location adjuncts can be placed sentence-finally, but cannot be placed between the main clause and the <i>no</i> clause.
The <i>ho</i> clause allows both negators <i>o'a</i> and <i>o'te</i> .	The <i>no</i> clause allows only the negator <i>o'te</i> .

Based on Shen's observation, there seems to be a syntactic-semantic mismatch in *ho* type complementation, that is, it exhibits semantically complementation but syntactically adjunction. This mismatch phenomenon is not new. Culicover and Jackendoff (1997) examine so called left-subordination *and*-construction (*you drink one more can of beer and I'm leaving*), and proposed that this construction should be analyzed as coordinate in Syntax and subordinate (adverbial) in semantics. Yuasa and Sadock (2002) also argue that the notions of coordination and subordination can be independently applied to

syntax and semantics. They present three cases of pseudo-subordinate constructions: *te*-coordination in Japanese, NP coordination in Yiddish and West Greenlandic Inuit. In this paper, I would not discuss their analyses, but simply summarize their findings in the table below.

(18) Mismatch in Syntax and Semantics on clause dependency

	Syntax	Semantics	Example
a. Simple coordination	coordination	coordination	
b. Pseudo-coordination	coordination	subordination	left-subordination <i>and</i> -construction in English
c. Simple subordination	subordination	subordination	
d. Pseudo-subordination	subordination	coordination	<i>te</i> -coordination in Japanese, NP coordination in Yiddish and West Greenlandic Inuit
e. Pseudo-independent	Subordination (Relative clause)	independent clause	Nonrestrictive relative clause in Japanese

(Yuasa 2005:545)

Though the previous studies are only concerned on clause dependency (hypotaxis V.S. parataxis), I would like to suggest the mismatch issues should be extended to the function of the clause (complement, adverbial and relative clause) as well, based on the syntactic behaviours and semantic properties of the *ho* complements in Shen's work discussed above.

(19) Mismatch in Syntax and Semantics on the function of the clauses

	Syntax	Semantics	Example
Pseudo-complementation	adjunction	complementation	<i>Ho</i> type complementation

In next section, we discuss how the resultative and descriptive cases are realized in syntax and semantics in English and Mandarin, and show that mismatch phenomenon also appears in the two types of clauses.

2.2 Resultative and descriptive in English and Mandarin

Resultative is defined as the presence XP denoting a state or location that holds of the referent of an NP in the construction as a result of the action denoted by its verb (Rappaport Hovav and Levin, 2001). English and Mandarin examples are given below.

(20) The dog barked him awake.

(Rappaport Hovav and Levin 2001: 769)

- (21) ta zou de [hen lei]
 he walk DE very tired
 'He walked till he got tired.'

Both resultative and descriptive clauses in Mandarin are introduced by *de* element. Descriptive is defined as the stative clause describing how the action represented in the first clause is carried out. More specifically, it is the stative clause which describes the manner in which the event of the first clause occurs (Shi, 1990), as (22) shows. In Mandarin, preverbal adverb, which modifies the main verb in (23), states the manner in which the actor has performed the action (Tai, 1973: 405), and should be distinguished from the descriptive clause.

- (22) ta zou de [hen man]
 he walk DE very slow
 'He walks very slowly'

- (23) ta [man-man de] zou
 he very-slow DE walk
 'He walks very slowly'

It has been noticed that in (22), the sentence can have volitional meaning, that is, the actor can choose to perform the action at a slow pace, while the volitional meaning disappears in (23). Therefore, in (22), the actor can be a slow walker, i.e. habitually walks slowly. Huang (1988) also pointed out that preverbal manner adverb necessarily refers to a specific event, whereas postverbal adverbial can be generic-denoting. In English, both descriptive and manner are encoded in adverb expression, as the English interpretations shown in (22) and (23).

Syntactically, in Mandarin, it has been proposed that both resultative and descriptive clauses and the preceding verb are in complementation relation (either CP/V or VP-complex), and preverbal adverb is in an adjunction relation with the modified verb. In English, the resultative clause is said to involve a secondary predication, and is in a complementation relation with the matrix verb. The syntactic and semantic statuses of resultative and descriptive clauses in English and Mandarin are summarized in the following table.

(24) Mismatch in Syntax and Semantics on the function of the clauses

	Syntax	Semantics	Example
Simple complement	complement	complement	Mandarin resultative clause
Simple adverbial	adjunct	adverbial	English descriptive clause
Pseudo-complement	adjunct	complement	<i>Ho</i> type complementation
Pseudo-adverbial	complement	adverbial	Mandarin Descriptive clause

Back to our target language, Tsou, we may wonder what the syntactic roles the resultative and descriptive clauses play in Tsou grammar, and whether they exhibit the mismatch like their Mandarin counterpart. In next section, I will start the study on resultative and descriptive clauses in Tsou, and try to answer the questions raised above.

3. Analysis

The section is divided into four parts. The first part, I will show that the two clauses in resultative and descriptive are not equal in both syntax and semantics; the conjunction *ho* should be analyzed as subordinator. In the second part, I further demonstrate that the resultative and descriptive clause are adjuncts and they adjoin to the matrix clause in a lower position than the *ho* type complement does. In the final part, I claim that the *ho* clauses with/without auxiliaries are involved different syntactic structures, due to their different syntactic performances.

3.1 *Ho* as a subordinator

Clause linkage strategies can be traditionally divided into two basic types: subordination and coordination. Subordination (hypotaxis) is distinguished from coordination (parataxis) on several aspects: dependency (it cannot stand alone without the associated clause), embedding (the subordinate clause is embedded into the main one as a constituent of it), and possible reduction of the structure in the subordinate clause (Cristofaro 2003). In this section, the resultative and descriptive *ho* clauses will be under investigation, and via several syntactic and semantic tests, I claim that the two types of *ho* clauses should be subordination rather than coordination. There are seven pieces of evidence which support the idea. First, the order of the clauses cannot be reversed in the resultative and descriptive *ho* clauses in (25) and (26), while it is allowed in a coordinate construction such as (27).

- (25) a. m-i-'o ngoseo [**ho** m-i-'o macohio]
 AV-Real-1s tired.AV HO AV-Real-1s teach.AV
 'I teach so hard that I got tired.'
- b. *m-i-'o macohio [**ho** m-i-'o ngoseo]
 AV-Real-1s teach.AV HO AV-Real-1s tired.AV
- (26) a. m-i-ta tumu-nanac'o [**ho** m-i-ta mongsi]
 AV-Real-3S loudly-very.sad.AV HO AV-Real-3S cry.AV
 'He was so sad from crying.'
- b. *m-i-ta mongsi [**ho** m-i-ta tumu-nanac'o]
 AV-Real-3S cry.AV HO AV-Real-3S loudly-very.sad.AV

- (27) a. m-o peayoh~~u~~ [ho mofti'i 'o mo'o]
 AV-Real run.AV and jump.AV NOM Mo'o
 'Mo'o runs and jumps.'
 (Shen 2004)
- b. m-o mofti'i [ho peayoh~~u~~ 'o mo'o]
 AV-Real jump.AV and run.AV NOM Mo'o

Second, the whole *ho* clause like temporal adverbial in (30), can be further extraposed to the sentence initial. However, in (31), the conjunct cannot be moved to the sentence initial.

- (28) a. m-i-ta na'no mayaha/poha'o [**ho** m-i-ta
 AV-Real-3S very.AV fast.AV /late.AV HO AV-Real-3S
 peayofu/coecon~~u~~
 run.AV/walk.AV
 'He runs/walks very fast/slowly.'
- b. [**ho** m-i-ta peayofu/coecon~~u~~] m-i-ta na'no mayaha/poha'o
- (29) a. m-i-ta tumu-nanac'o [**ho** m-i-ta mongsi]
 AV-Real-3S loudly-very.sad.AV HO AV-Real-3S cry.AV
 'He was so sad from crying.'
- b. [**ho** m-i-ta mongsi] m-i-ta tumu-nanac'o
- (30) (ho hucma) te-'o (*ho hucma) esmi (ho hucma)
 tomorrow Irr-1S tomorrow come.AV tomorrow
 'I will come tomorrow'
- (31) a. m-o peayoh~~u~~ [ho mofti'i 'o mo'o]
 AV-Real run.AV and jump.AV NOM Mo'o
 'Mo'o runs and jumps.'
- b. *[ho mofti'i 'o mo'o] m-o peayohu

CSC constraint (Ross 1976) holds only in coordination rather than in subordination, and thus the argument in the main clause is possible to be extracted in the subordinate construction, as (32) shows, whereas nothing can be extracted from a conjunct in a coordinate structure as (33) shows.

- (32) a. \emptyset -i-ta cofkoya 'e kuyai [**ho** \emptyset -i-ta tonzovi]
 NAV-Real-3S clean.NAV. NOM car HO NAV-Real-3S wash.NAV
 'He washed the car clean.'
- b. ['e kuyai] \emptyset -i-ta cofkoya [**ho** \emptyset -i-ta tonzovi]
 Nom car NAV-Real-3S clean.NAV. HO NAV-Real-3S wash.NAV
- (33) a. \emptyset -i-ta papasa 'e fou [ho pema ta emi].
 NAV-Real-3S cut.NAV NOM meat and drink.NAV NOM rice-wine
 'He cuts the meat and drank the rice wine.'
- b. *['e fou] \emptyset -i-ta papasa [ho pema ta emi].
 NOM meat NAV-Real-3S cut.NAV and drink.NAV NOM rice-wine

Coordination clause resist backward referential, while the pronoun in resultative and descriptive *ho* clauses, though undergone extraposed, the referential relation can still be established.

- (34) a. m-i-ta_i na'no mayahe/poha'o 'o mo'o_i [**ho** m-i-ta_i
 AV-Real-3S very.AV fast.AV /late.AV NOM Mo'o HO AV-Real-3S
 peayohu/coecon#]
 run.AV/ walk.AV
 'Mo'o runs/walks very fast/slowly.'
- b. [**ho** m-i-ta_i peayoh#coecon#] m-i-ta_i na'no mayahe/poha'o 'o mo'o_i

Semantically, the resultative and descriptive *ho* clauses provide given information, and distinguish themselves from the independent clauses which tend to provide foreground information (Thompson, 1987). There are two arguments for *ho* clauses being given information. First, when making a question, the speaker is allowed to answer the pre-*ho* part solely, and the state of "fast" can still be understood as the result from the running event. In the coordinate counterpart (36), we can see that the answers contained only one conjunct are incomplete and thus sound pragmatically odd.

- (35) A: m-i-ta na'no mayahe ho m-i-ta peayoh#?
 AV-Real-3S very.AV fast.AV HO AV-Real-3S run.AV
 'Does he run very fast?'
- B: 'a m-i-ta na'no mayahe
 Affirm AV-Real-3S very.AV fast.AV
 'Yes, he runs very fast.'
- (36) A: m-i-ta peayoh# ho mofti'i 'o mo'o?
 AV-Real-3S run.AV and jump.AV NOM Mo'o
 'Does Mo'o run and jump?'
- B: 'a mita peayoh# ho mofti'i.
 'Yes, he runs and jumps.'
 # 'a mita peayoh#
 'Yes, he runs.'
 # 'a mita mofti'i.
 'Yes, he jumps.'

Second, since the *ho* clauses are given information and thus presupposed, they cannot be negated, as shown in (37) and (38).

- (37) *m-i-ta na'no mayahe/poha'o **ho** m-i-ta o'te
 AV-Real-3S very.AV fast.AV /late.AV HO AV-Real-3S NEG
 peayoh#coecon#
 run.AV/walk.AV
- (38) ??m-i-ta tumu-nanac'o **ho** m-i-ta o'te mongsi
 AV-Real-3S loudly-very.sad.AV HO AV-Real-3S NEG cry.AV

Both semantic and syntactic evidence shows that the resultative and

descriptive *ho* clauses should be analyzed as subordination, and the conjunction *ho* should be treated as a subordinator rather than a coordinator. In next section, we will investigate *ho* clauses more deeply, and see what kinds of subordinate clauses they belong to.

3.2 *Ho* clause as adjunction

There are three types of subordinate clauses: adverbial, complement and relative clauses. They can be distinguished by the function the embedded clause has. Complement, which functions as the argument of the matrix clause, is usually obligatory constituent and thus cannot be omitted (Noonan 1985: 42). If the embedded clause functions as an adverbial, it is an adverbial clause. Since it is an adjunct, it is freely omitted. Semantically, the adverbial clause exhibits a specific semantic relationship between the two clauses (condition, temporal, etc.), whereas, there is less specific in complement clause. Relative clause is also an adjunct syntactically, and can be omitted. The differences between relative clause and adverbial are that relative clause modifies a nominal head, while adverbial clause modify a VP (ad-verbial) or CP (ad-sentential). The criteria distinguishing the three types of subordinate clauses are listed below.

(39) Criteria distinguishing adverbial, complement and relative clause².

	ADV -clause	COMP-clause	REL-clause
syntax	adjunct (can be omitted)	complement (can not be omitted)	adjunct (can be omitted)
semantics	modifier of S/VP specific semantic relationship between matrix clause and adv-clause	argument of C/TP semantically much less specific	modifier of N(P)
marking	adv. subordinator	zero or complementizer	gap or (pro)noun

(Diessel 2001: 436)

In Tsou, it has been argued that there are two relative clause marker, *ci* and *hia*, which introduce external- and internal-headed relative clauses respectively.

Relative clause

(40) cou ne tfuya 'o [ø-i-'o aiti **ci** oko] ne hucma
 Tsou OBL Tfuya NOM NAV-REAL-1S see.NAV CI kid yesterday
 'The kid I saw yesterday is a Tsou (an indigenous person) from
 Tfuya'

(Chang Y.Y 2003)

² Different analyses regarding the syntactic structure of relative clauses have been proposed in the literature. Interested readers may refer to the introduction section in Alexiadou, Law, Meinunger and Wilder (2000) for a general discussion on these proposals.

Internal-headed relative clause

- (41) m-o o'ha ʔmnʔ 'o [(m-i-ta) **hia** cocvo
 AV-Real NEG good.AV NOM AV-Real-3S HIA laugh.AV
 to yangui 'e pasuya].
 OBL Yangui NOM Pasuya
 'The manner in which Pasuya smiles at Yangui is not good.'
 (Chang Y.Y 2002)

In (40), there is a gap coreferential to the external head 'child' in the relative clause, and in (41), the nominal *hia* 'manner' serves as the internal head of a relative clause (Y.Y Chang 2002: 344). As we have shown previously, there are no gaps in the resultative and descriptive *ho* clauses, and this clearly excludes the possibility of *ho* introducing an external-headed relative clause. What about the possibility of *ho* introducing an internal-headed relative clause? As we examine (41) more carefully, the *hia* clause, being a nominal as a whole, is marked by a case marker 'o, and we can see in (42) that *ho* clause is not marked by any case marker. Thus, resultative and descriptive clauses are not relative clauses.

- (42) m-i-ta na'no mayahe/poha'o [**ho** m-i-ta
 AV-Real-3S very.AV fast.AV /late.AV HO AV-Real-3S
 peayohʔ/coeconʔ]
 run.AV/ walk.AV
 'He runs/walks very fast/slowly.'

Resultative and descriptive *ho* clauses do not behave like complements, either. As it is mentioned in the beginning of this section, complement clause is obligatory and usually cannot be omitted, as shown in (43). On the contrary, in (44) and (45), the resultative and descriptive *ho* clauses can be omitted.

- (43) a. m-o ngoheʔngʔ [**no** cmuhu to teo'ua 'o mo'o]
 AV-Real afraid.AV NO kill.AV OBL chicken NOM MO'O
 'Mo'o is afraid to kill chicken.'
 b. *m-o ngoheʔngʔ
 AV-Real afraid.AV
- (44) a. m-i-ta na'no mayahe/poha'o [**ho** m-i-ta
 AV-Real-3S very.AV fast.AV /late.AV HO AV-Real-3S
 peayohʔ/coeconʔ]
 run.AV/ walk.AV
 'He runs/walks very fast/slowly.'
 b. m-i-ta na'no mayahe/poha'o
- (45) a. m-i-ta tumu-nanac'o [**ho** m-i-ta mongsi]
 AV-Real-3S loudly-very.sad.AV HO AV-Real-3S cry.AV
 'He was so sad from crying.'
 b. m-i-ta tumu-nanac'o

Moreover, the *ho* clauses are sensitive to island effect. The arguments in

resultative and descriptive *ho* clauses cannot be extracted into the topic position in the main clause.

- (46) a. m-i-ta ngoseo [**ho** \emptyset -i-si eobak-a ta mo'o]
 AV-Real-3s tired.AV HO NAV-Real-3s hit.NAV OBL Mo'o
 'He got tired from hitting Mo'o.'
 b. *['e mo'o] m-i-ta ngoseo [**ho** \emptyset -i-si eobak-a]
 TOP Mo'o AV-Real-3s tired.AV HO NAV-Real-3s hit.NAV

Here, we may answer the questions raised at the end of the section 2- what the syntactic roles the resultative and descriptive clauses play in Tsou grammar, and whether they exhibit the mismatch. Resultative and descriptive *ho* clauses are adverbials; their syntactic features are different from those of the relative clause and complement.

- (47) The semantic and syntactic statuses in resultative and descriptive *ho* clauses

	Syntax	Semantics
Resultative <i>ho</i> clause	adjunction	complement
Descriptive <i>ho</i> clause	adjunction	adverbial

3.3 Ad-verbial or ad-sentential?

In last section, we conclude that the resultative and descriptive *ho* clauses are adverbials. Compared with Shen's adjunction analysis of *ho* type complement, we find that there are several differences among the three types of *ho* clauses. First, the scope of negation cannot range over the *ho* type complement in (48), whereas the negation does scope over the resultative and descriptive *ho* clauses. In (48), the two propositions are interpreted in parallel, and only one of these is negated. In (49) and (50), the negation is said to range over two clauses.

Negation

- (48) \emptyset -i-si **o'te** cohivi to mo'o [**ho** m-o mihino
 NAV-Real-3S NEG know.NAV OBL Mo'o HO AV-Real buy.AV
 to simeo 'o yangui]
 OBL pork NOM Yangui
 'Mo'o does not know that Yangui bought pork.'
- (49) (**o'a**) m-i-ta (**o'te**) mayahe [**ho** m-i-ta peayohæ]
 NEG AV-Real-3S NEG fast.AV HO AV-Real-3S run.AV
 'He cannot/ does not run fast.'
- (50) (**o'a**) m-i-ta (**o'te**) tumu-nanac'o [**ho** m-i-ta
 NEG AV-Real-3S NEG loudly-very.sad.AV HO AV-Real-3S
 mongsi]
 cry.AV
 'He cannot be / was not so sad from crying.'

Second, the auxiliary in *ho* type complement can not be omitted, whereas the auxiliaries are optional in resultative and descriptive *ho* clauses.

Obligatory of Auxiliary

- (51) \emptyset -i-si cohivi to mo'o [**ho** *(m-o) mɛcɛ
 NAV-Real-3S know.NAV Obl Mo'o HO AV-Real rain
 ne hucma].
 yesterday
 'Mo'o knows that it rained yesterday.'
(Shen, 2004)

- (52) m-i-ta na'no mayahe/pohao [**ho** (m-i-ta)
 AV-Real-3S very.AV fast.AV /late.AV HO AV-Real-3S
 peayohɛ/coeconɛ]
 run.AV/walk.AV
 'He runs/walks very fast/slowly.'

- (53) m-i-ta tumu-nanac'o [**ho** (m-i-ta) mongsi]
 AV-Real-3S loudly-very.sad.AV HO AV-Real-3S cry.AV
 'He was so sad from crying.'

In *ho* type complement, it is possible to use epistemic modal to express the likelihood in speaker's evaluation toward the proposition introduced by *ho*, while in (54) and (55), resultative and descriptive *ho* clauses cannot take epistemic modal.

- (54) m-i-ta ~~asonɛ~~ na'no mayahe [**ho** m-i-ta
 AV-Real-3S possibly.AV very.AV fast.AV HO AV-Real-3S
 (*~~asonɛ~~) peayohɛ]
 possibly.AV run.AV
 'He possibly runs very fast.'

- (55) m-i-ta ~~asonɛ~~ tumu-nanac'o [**ho** m-i-ta
 AV-Real-3S possibly.AV loudly-very.sad.AV HO AV-Real-3S
 (*~~asonɛ~~) mongsi]
 possibly.AV cry.AV
 'He was possibly so sad from crying.'

Finally, topicalization cannot take place in resultative and descriptive *ho* clauses.

- (56) a. m-i-ta ngoseo **ho** \emptyset -i-si eobak-a [ta mo'o]
 AV-Real-3s tired.AV HO NAV-Real-3s hit. NAV OBL Mo'o
 'He got tired from hitting Mo'o.'
 b. *m-i-ta ngoseo **ho** ['e mo'o] \emptyset -i-si eobak-a
 AV-Real-3s tired.AV HO TOP Mo'o NAV-Real-3s hit. NAV

If the adverbial analysis of resultative and descriptive *ho* clauses is on the

right track, the differences between the *ho* type complement on one side, and the two types of *ho* clauses on the other side, can be attributed to their different syntactic structures.

In the study of adverbial clauses, Haegeman (2002) argues that adverbial clauses do not form a homogeneous class, and they should be divided into two subgroups—central and peripheral adverbial clauses based on the availability of Main Clause Phenomenon in the clauses (Haegeman, 2002: 63). She observes that certain syntactic operations, which are restricted to main/root clauses, are allowed in peripheral adverbials, but prohibited or excluded in central adverbials, such as epistemic modals, argument fronting, tag question formation, and rhetorical question formation. To capture the contrast, she claims that while central clause, whose semantic function is to structure the event expressed in the associated clause, is deficient in the CP domain, and lacks the functional projection which encodes speaker-related functions (speech time, epistemic modality, illocutionary force), peripheral clause, which is syntactically less integrated with the matrix clause, can tolerate Main Clause Phenomenon. The functional hierarchies in the left peripheral of the two adverbial clauses are presented as follows:

(57)

Central adverbial clause (adjoin to vP or IP):	Sub					Fin
Peripheral adverbial clause (adjoin to CP):	Sub	Force	Top	Focus		Fin
Root clause:		Force	Top	Focus		Fin

Central adverbial clause, due to its low syntactic position, may be within the scope of operators in the associated clause, such as temporal and negation. In Tsou, the temporal, aspect and mood are encoded in the preverbal auxiliary, and as we present above, the auxiliaries in the resultative and descriptive clauses must agree with the matrix clause, that is, the tense of the two *ho* clauses is dependent on the tense of the matrix clause. Based on the contrasts between the *ho* type complement and resultative and descriptive *ho* clauses, I thus claim that the former belongs to peripheral adverbial (ad-sentential), and the latter, central adverbial clause (ad-verbial).

3.4 Optional preverbal auxiliary?

In this section, the problem of the optional auxiliaries in resultative and descriptive *ho* clauses will be discussed. In last section, we can see that auxiliaries in the two *ho* clauses can be omitted freely. However, there are two distinct syntactic performances which show that *ho* clauses with/without auxiliaries exhibit different syntactic constructions. I will call the *ho* clause with preverbal auxiliary a full *ho* clause, and the *ho* clause without preverbal auxiliary a deficient *ho* clause. First, while full *ho* clause can undergo extraposition, defective *ho* clause cannot.

- (58) m-i-ta na'no mayahe/pohao [**ho** (m-i-ta)
 AV-Real-3S very.AV fast.AV /late.AV HO AV-Real-3S
 peayoh~~u~~/coecon~~u~~]
 run.AV/walk .AV
 'He runs/walks very fast/slowly.'
- (59) a. m-i-ta na'no mayahe/poha'o [**ho** m-i-ta
 AV-Real-3S very.AV fast.AV /late.AV HO AV-Real-3S
 peayoh~~u~~/coecon~~u~~]
 run.AV/ walk.AV
 'He runs/walks very fast/slowly.'
- b. [**ho** m-i-ta peayoh~~u~~/coecon~~u~~] m-i-ta na'no mayahe/poha'o
 c. ***[ho** peayoh~~u~~/coecon~~u~~] m-i-ta na'no mayahe/poha'o
- (60) a. m-i-ta tumu-nanac'o [**ho** m-i-ta mongsi]
 AV-Real-3S loudly-very.sad.AV HO AV-Real-3S cry.AV
 'He was so sad from crying.'
- b. [**ho** m-i-ta mongsi] m-i-ta tumu-nanac'o
 c. ***[ho** mongsi] m-i-ta tumu-nanac'o

Second, when the matrix clause contains an epistemic modal, the auxiliary can not be left out.

- (61) m-i-ta **ason~~u~~** na'no mayahe [**ho** *(m-i-ta) peayoh~~u~~]
 AV-Real-3S possibly.AV very.AV fast.AV HO AV-Real-3S run.AV
 'He possibly runs very fast.'
- (62) m-i-ta **ason~~u~~** tumu-nanac'o [**ho** *(m-i-ta)
 AV-Real-3S possibly.AV loudly-very.sad.AV **HO** AV-Real-3S
 mongsi]
 cry.AV
 'He was possibly so sad from crying.'

I would like to suggest that the defective *ho* clause might be involved a complementation like *no* complements. More evidence needs to be drawn to support the idea.

4. Conclusions and Discussions

In this study, we examine the two subtypes of *ho* clauses in Tsou: resultative and descriptive, and reach the conclusion by making three claims. First, the conjunction *ho* heads a subordinate structure rather than a coordinate one. Second, the two subtypes of *ho* clauses are adverbials, and thus cannot tolerate Main Clause Phenomena. Thus the omission of the preverbal auxiliary in the *ho* clauses might have different syntactic statuses from those with preverbal auxiliary.

Y.-Y. Chang in her dissertation (2003) proposes that the conjunction *ho* in Tsou has undergone the following grammaticalization:

(63) **Grammaticalization of conjunctive *ho*** (Y.-Y Chang 2003)

a. Manner expression as CP conjunction

- (64) m-i-ta poha'o **ho** [m-i-ta esmi 'e pasuya
AV-Real-3S late.AV HO AV-Real-3S come.AV Nom Pasuya
'Pasuya comes late.'

b. Manner expression as main predicate of the main clause

- (65) m-i-ta poha'o 'e pasuya [**ho** esmi]
AV-Real-3S late.AV Nom Pasuya HO come.AV
'Pasuya comes late.'

c. Manner expressions as an adverbial

- (66) m-i-ta poha'o esmi 'e pasuya
AV-Real-3S late.AV come.AV Nom Pasuya
'Pasuya comes late.'

d. Incorporation of the manner expression and action verb

- (67) m-i-ta es-poha'o 'e pasuya
AV-Real-3S come-late.AV Nom Pasuya
'Pasuya comes late.'

(63) illustrates the process of grammaticalization. At the beginning stage, the manner construal is said to exhibit a conjunction structure. At next stage, *ho* has been grammaticalized as a complementizer, as (65) shows. The manner expression has juxtaposed with the action verb when *ho* is dropped. At the final stage, the manner is further incorporated with the action verb as in (67). The process of grammaticalization of the conjunction *ho* is in accordance to the model proposed by Crowley (2002) based on the observations on serial verb constructions.

- (68) Structural continuum of serial-verb constructions (Crowley 2002: 18):
Verbal compounds > Nuclear serial verbs > Core serial verb > Clause chains > Subordination clauses > Coordination clauses

There is a tendency of encoding complex events by means of coordinating multiple clauses towards subordinating verbal elements cross-linguistically. Besides Tsou, Mandarin provides another good example. There is a decline of the coordinating VPs for structure building in Ancient Chinese, but a rise of V-V compounding in Mandarin Chinese (Mei 1991, Huang 1995, Tsai 1998, Feng 2002). Huang (1995) suggests that the structure change from coordination to subordination is due to the shift of semantic nucleus to one of the V heads. Feng (2002) further develops Huang's idea into a incorporation rule, which states that in a coordination structure [α - β], where α composes the meaning of [A+y], β of [B+x], x is incorporated by y, and triggers a semantic shift to the left head, if the extension of x includes y. Under his analysis, the Mandarin compound *jiao-sha* 'hang-dead' is left headed since the second atomic meaning of *jiao* 'hang' is the subset of the second atomic meaning of *sha* 'kill'. Based on the

incorporation rule describe above, the semantic nucleus of *jiao-sha* shifts to the left head *jiao* ‘hang’:

- (69) *jiao-sha*
 hang-kill
 Literally, ‘hang-dead’
 V1 *jiao*= ‘cause to die’ + ‘hang by using the rope’
 V2 *sha*= ‘cause to die’+ ‘with any kinds of tools’

According to Feng’s incorporation rule, in Tsou, the action verbs are expected to incorporate into the resultative and descriptive predicates, which specify the result state of the participants in the event of action and the way that the action takes place, respectively:

- (70) a. \emptyset -i-si **auc-a** ho \emptyset -i-si **seauc-a** ’o av’u.
 NAV-Real-3s tight-NAV HO NAV-Real-3s tie-NAV NOM dog
 ‘He tied the dog tight.’
 a’. se-~~auc~~a
 ‘tie-tight’
 ‘to tie something tight’
 b. m-i-ta **poha’o** ho m-i-ta **bona**.
 AV-Real-3S late.AV HO AV-Real-3S eat.AV
 ‘He ate slowly.’
 b’. o-poha’o
 ‘eat-slow’
 ‘to eat slowly’

This study supports the idea of *ho* evolution by providing a syntactic demonstration on the structure involved in the earlier two stages: the *ho* construction at the first stage as a subordinate structure, and at the second stage, a complementation. The manner expression at the third stage is part of V-V compounding, where the action verb is incorporated into the manner verb, rather than an adverbial adjoined to the action verb.

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