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## Resultative and descriptive clauses as matrix clauses in Tsou

The morpheme *ho* 'and' in Tsou has been the subject of great debates regarding its diverse usages. Beside its regular function as a coordinator ((1)), it also can introduce a temporal clause, functioning like English subordinator *when* (see (2)).

- (1)    m-o        peayohæ   **ho**    mofti'i    'o    mo'o  
         AV-REAL run.AV   **and**   jump.AV   NOM   Mo'o  
         'Mo'o runs and jumps.'

- (2) m-i-'o      nac'o      moyafo    [temporal **ho** m-o      macu].  
 AV-REAL-1S dislike.AV go.out.AV [ **HO** AV-Real rain.AV]  
 'I don't like to go out when it rains'

The status of *ho* becomes more obscure when it is preceded by various types of clauses—resultative, descriptive, locative, frequency, duration, quantifier, and instrument clauses. This paper examines two of them—resultative and descriptive ((3), (4)), and argues that these clauses have the syntactic status of matrix clause, while their clause-mates introduced by *ho* (hereafter *ho* clauses) are adverbials.

- (3) [Resultative m-i-'o ngoseo] [ho clause ho m-i-'o macohio].  
AV-REAL-1S tired.AV HO AV-REAL-1S teach.AV  
'I taught so hard that I got tired.'
- (4) [Descriptive m-i-ta na'no mayah/poha'o] [ho clause ho m-i-ta peayofa/coecon].  
AV-Real-3S very.AV fast.AV/late.AV HO AV-Real-3S run.AV/walk.AV  
'He runs/walks very fast/slowly.'

The first claim made in this study is that in the resultative and descriptive constructions, *ho* is better analyzed as a subordinator rather than a coordinator, since on one hand, the syntactic tests show that the two *ho* clauses behave like adjuncts. The facts include the possibility of extraposition of the *ho* clauses ((5) vs. coordination (6)), and the possibility of the extraction of the argument in the *ho* clauses, thus violating CSC (Ross 1967) ((7) vs. coordination (8)).

- (5) [ho m-i-ta peayofɥ]<sub>i</sub> m-i-ta na'no mayahe t<sub>i</sub>  
 HO AV-REAL-3S run.AV AV-REAL-3S very.AV fast.AV  
 'He runs very fast.'
- (6) \* [ho mofti'i 'o mo'o]<sub>i</sub> m-o peayohɥ t<sub>i</sub>  
 and jump.AV NOM Mo'o AV-REAL run.AV  
 'Mo'o runs and jumps.'
- (7) ['e kuyai]<sub>i</sub> m-i-ta cofkoya t<sub>i</sub> [ho ø-i-ta tonzovi]  
 NOM car AV-REAL-3S clean.AV HO NAV-REAL-3S wash.NAV  
 'He washed the car clean.'
- (8) a. ['e fou]<sub>i</sub> ø-i-ta papasa t<sub>i</sub>  
 NOM meat NAV-REAL-3S cut.NAV  
 'The meat, he cuts it.'
- b. \* ['e fou]<sub>i</sub> ø-i-ta papasa t<sub>i</sub> [ho pema ta emi].  
 NOM meat NAV-REAL-3S cut.NAV and drink.NAV NOM rice.wine  
 'He cuts the meat and drank the rice wine.'

On the other hand, semantically, while the resultative and descriptive clauses are foregrounded, the *ho* clauses provide given information, which is a typical feature of subordination (Thompson 1987).

The second claim is concerned about the syntactic positions that the *ho* clauses occupy.

The first piece of evidence comes from the scope of negation; when *ho* introduces a complement, the scope of negation cannot range over the embedded complement in (9) (Shen 2004).

- (9) ø-i-si            o'te   cohivi   to   mo'o   [ho m-o   mihino to   simeo 'o Yangui  
NAV-REAL-3S NEG know.NAV OBL Mo'o HO AV-REAL buy.AV OBL pork NOM yangui]  
'Mo'o does not know that Yangui bought pork.'

Contrastively, in the resultative and descriptive construals, the negation scopes over a complex event: the negation negates the state of *fast* which is understood in the event of running in (10).

- (10) 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 does not run fast.'

The second evidence concerns the prohibition of epistemic modals; in (11), while resultative and descriptive clauses can have epistemic modals to express the likelihood in speaker's evaluation toward the proposition, it is not the case for the *ho* clauses.

- (11) m-i-ta            asonu            na'no            mayahe [ho m-i-ta            (\*asonu)            peayohu]  
 AV-REAL-3S    possibly.AV    very.AV    fast.AV    HO    AV-REAL-3S    possibly.AV    run.AV  
 'He possibly runs very fast.'

This evidence suggests that *ho* clauses, unlike resultative and descriptive clauses, are deficient structurally, more specifically, they might lack of relevant functional projection to accommodate speaker-anchored elements, such as epistemic modals, assuming Rizzi's left peripheral cartography.

This assumption of deficiency of left peripheral functional projections in *ho* clause is further supported by the fact that topicalization cannot take place in the *ho* clauses, whereas this restriction is not witnessed in the resultative and descriptive clauses (compare (7) and (12)).

- (12) a. \*['e    tposu]<sub>i</sub>    m-i-'o            ngoseo    [ho m-i-'o            baito            t<sub>i</sub>]  
           TOP book    AV-REAL-1S    tired.AV    HO    AV-REAL-1S    see.AV  
           'I got tired from reading.'
- b. \* m-i-'o            ngoseo    ho ['e    tposu]<sub>i</sub>    m-i-'o            baito            t<sub>i</sub>  
           AV-REAL-1S    tired.AV    HO TOP book    AV-REAL-1S    see.AV

The syntactic behaviour of the *ho* clauses illustrated above shows that they cannot tolerate Main Clause Phenomena; following Haegman (2002), adverbials, which lack the functional projection which encodes speaker-related functions in the CP domain, are claimed to adjoin to a low syntactic position, i.e., they are ad-verbials rather than ad-sententials, and are syntactically more integrated with the matrix clause. The findings in this paper further support Chang's (2003) grammaticalization analysis of *ho* from the stage of subordination (13a) to compounding (13d).

- (13)    Grammaticalization of conjunctive *ho* (Chang 2003)
- m-i-ta poha'o [ho m-i-ta esmi 'e pasuya].
  - m-i-ta poha'o 'e pasuya [ho esmi]            (auxiliaries dropping)
  - m-i-ta poha'o esmi 'e pasuya            (morpheme *ho* dropping)
  - m-i-ta es-poha'o 'e pasuya            (V-V Compounding)
- 'Pasuya comes late.'

Chang, Melody Yaying. 2003. *Subjecthood in Tsou grammar*. Doctoral dissertation, National Tsing-Hua University.  
 Haegeman, Liliane. 2002. The syntax of adverbial clauses and its consequences for topicalization. Paper presented at

*Linguistique des Langues Rommanes. Hommage a Liliane Tasmowski.*

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Shen, Chiachi. 2004. Complementation in Tsou revisited. Paper presented at NCL, June 2004, Chung-Cheng University, Taiwan.



● Analysis:

**Claim 1: *Ho* is a subordinator**

Evidence 1: the ability of exchanging the clauses: √ coordination, \*resultative/descriptive coordination:

- (10) a. m-o peayohu [ho mofti'i 'o mo'o]  
AV-Real run.AV and jump.AV NOM Mo'o  
'Mo'o runs and jumps.'  
b. m-o mofti'i [ho peayohu 'o mo'o]  
AV-Real jump.AV and run.AV NOM Mo'o

resultative:

- (11) a. m-i-'o ngoseo [ho m-i-'o macohio]  
AV-Real-1s tired.AV HO AV-Real-1s teach.AV  
'I taught 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

descriptive:

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

Evidence 2: CSC constraint does not hold in the resultative/descriptive sentences.

coordination:

- (13) a. m-o peayohu [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

resultative:

- (14) a. m-i-ta na'no mayahe/poha'o [ho m-i-ta peayofu/coeconu]  
AV-Real-3S very.AV fast.AV /late.AV HO AV-Real-3S run.AV/walk.AV  
'He runs/walks very fast/slowly.'  
b. [ho m-i-ta peayofu/coeconu] m-i-ta na'no mayahe/poha'o

descriptive:

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

Evidence 3: allowing backward referential: \*coordination, √ resultative/descriptive

- (16) a. m-i-ta na'no mayahe/poha'o 'o mo'o; [ho m-i-ta peayohu/coeconu]  
AV-Real-3S very.AV fast.AV /late.AV NOM Mo'o HO AV-Real-3S run.AV/walk.AV  
'Mo'o runs/walks very fast/slowly.'  
b. [ho m-i-ta peayohu/coeconu] m-i-ta na'no mayahe/poha'o 'o mo'o;

Evidence 4: The resultative and descriptive *ho* clauses, provide given information, and distinguish themselves from the independent clauses which tend to provide foreground information (Thompson, 1987)

a. 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:

- (17) A: m-i-ta na'no mayahe ho m-i-ta peayohu?  
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.'  
(18) A: m-i-ta peayohu 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 peayohu ho mofti'i.  
'Yes, he runs and jumps.'  
# 'a mita peayohu  
'Yes, he runs.'  
# 'a mita mofti'i.  
'Yes, he jumps.'

b. Since the *ho* clauses are given information and thus presupposed, they cannot be negated:

- (19) \*m-i-ta na'no mayahe/poha'o ho m-i-ta o'te peayohw/coeconu  
AV-Real-3S very.AV fast.AV/late.AV HO AV-Real-3S NEG run.AV/walk.AV  
(20) ??m-i-ta tumu-nanac'o ho m-i-ta o'te mongsj  
AV-Real-3S loudly-very.sad.AV HO AV-Real-3S NEG cry.AV

#### Claim2: *Ho* clauses are adjuncts

(21) Criteria distinguishing adverbial, complement and relative clause.

	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)

Possibility 1: *Ho* clauses are relative clauses? No

- 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.
- Ho* clause is not marked by any case marker, as the usual internal-headed relative clause is:

Internal-headed relative clause

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

Possibility2: *Ho* clauses are complement clauses? No

- Resultative and descriptive *ho* clauses can be omitted.

Control:

- (23) a. m-o ngoheungu [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 ngoheungu  
AV-Real afraid.AV

resultative:

- (24) a. m-i-ta na'no mayahe/poha'o [ ho m-i-ta peayohw/coeconu]  
AV-Real-3S very.AV fast.AV /late.AV HO AV-Real-3S run.AV/walk.AV  
'He runs/walks very fast/slowly.'

- b. m-i-ta na'no mayahe/poha'o

descriptive:

- (25) a. m-i-ta tumu-nanac'o [ ho m-i-ta mongsj]  
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

2. *Ho* clauses are sensitive to island effect: extracting the argument from the *ho* clause is prohibited.

- (26) a. m-i-ta ngoseo [ ho m-i-ta baito to tposu]  
AV-Real-3S tired.AV HO AV-Real-3S see.AV OBL book  
'He got tired from reading.'

- b. \* [ 'e tposu ] m-i-ta ngoseo [ ho e-i-si aiti]  
TOP book AV-Real-3S tired.AV HO NAV-Real-3S see.NAV

#### Claim3: *Ho* clauses adjoin to VP, not CP

Shen (2004): *Ho* clauses in the *ho*-type complementation sentence are CP level adverbials

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

(28)

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

(Haegeman 2002)

1. ability of omitting the TAM marker in *ho* clauses: \**ho* type complement

✓ resultative/descriptive *ho* clauses

*Ho* type complementation:

- (29) ø-i-si cohivi to mo'o [ho \*(m-o) mæcə ne hucma].  
NAV-Real-3S know.NAV Obl Mo'o HO AV-Real rain yesterday  
'Mo'o knows that it rained yesterday.'

(Shen, 2004)

resultative:

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

descriptive:

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

2. allowing the epistemic modal in the *ho* clauses: ✓ *ho* type complement

\*resultative/descriptive *ho* clauses

*Ho* type complementation:

- (32) m-i-ta ason# na'no mayahe [ho m-i-ta (\*ason#) peayohu]  
AV-Real-3S possibly.AV very.AV fast.AV HO AV-Real-3S possibly.AV run.AV  
'He possibly runs very fast.'

resultative:

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

3. Topicalization can take place in the *ho* clauses: ✓ *ho* type complement

\*resultative/descriptive *ho* clauses

resultative:

- (34) a. m-i-'o ngoseo ho m-i-'o baito to tposu  
AV-Real-1s tired.AV HO AV-Real-1s see.AV Obl book  
'I got tired from reading.'  
b. \*m-i-'o ngoseo ho ['e tposu] m-i-'o baito  
AV-Real-1s tired.AV HO TOP book AV-Real-1s see.AV

● Summary:

1. *Ho* is a subordinator and introduces a VP-level adverbial clause
2. The resultative/descriptive predicate is the matrix predicate.

● Discussion:

1. Mismatch in Syntax and Semantics:

(35) Mismatch in Syntax and Semantics on clause dependency (Yuasa 2005:545)

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

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

Resultative and descriptive in English, Mandarin, and Tsou:

	Syntax	Semantics	Example
Simple complement	complement	complement	Mandarin resultative clause
Simple adverbial	adjunct	adverbial	English descriptive clause, Tsou descriptive <i>ho</i> clause
Pseudo-complement	adjunct	complement	<i>Ho</i> type complementation (Shen 2004), Tsou resultative <i>ho</i> clause
Pseudo-adverbial	complement	adverbial	Mandarin Descriptive clause

### 3. Grammaticalization of complex predicates:

(37) Structural continuum of serial-verb constructions (Crowley 2002: 18):

Verbal compounds > Nuclear serial verbs > Core serial verb > Clause chains >

Subordination clauses > Coordination clauses

(38) Tsou (Y.Y Chang 2003):

#### a. Manner expression as CP conjunction

- (39) 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.'

→ In this paper, manner expressions are argued to be the main predicate and and the following *ho* clauses are VP adjuncts.

#### b. Manner expression as the main predicate of the main clause

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

#### c. Manner expression as an adverbial

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

→ The action verb are the complement of the manner expression, and the structure involves complementation (Chang Y. L., 2004)

#### d. Incorporation of the manner expression and action verb

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

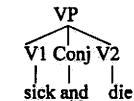
(43) Chinese (Mei, 1991, Huang 1995, Tsai 1998, Feng 2002):

#### a. [VP and VP] Coordination (before Qin and Han Dynasty):

(44) bing er si

sick and die

Literally, '(He) was sick and died.'

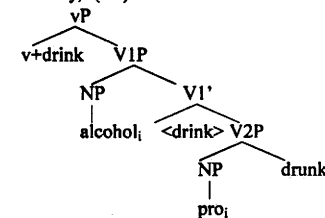


#### b. VP stacks complementation: the loss of the coordinator *er* 'and' (Liu Dynasty)

(45) ying jiu zui

drink alcohol drunk

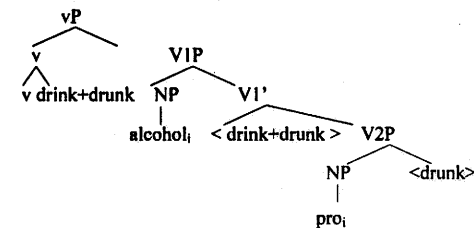
Literally, '(He) drank and drunk'



#### c. V-V compounding (Modern Chinese)

(46) he-zui jiu

drink-drunk alcohol



Question: What causes the syntactic inequality of the two clauses? and why does the compounding take place?

Huang (1995): The fact that V2 becomes the complement of V1 is due to the shift of semantic nucleus to the left.

Feng's (2002): 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.

(47) *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'

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'.

The incorporation rule works well in Chinese, but does it apply to Tsou as well?

### 3. Descriptive/Resultative or the action verb as the main predicate? cross-linguistic comparison:

(47)

#### SVO languages:

a. English: He [shot] [dead].  
the action verb as the main predicate the resultative as an adjunct

b. Mandarin: ta [ku] de [hen shangxin].  
cry Comp very sad  
the action verb as the main predicate the resultative as a complement

#### SOV languages:

German (Haider 1997)

c. daß man vielleicht das Fleisch [in Stücke] [schnitt].  
that one perhaps the meat to pieces cut  
the resultative as subordination the action verb as the main predicate

#### VOS languages:

d. Tsou: mita tumu-nanac'o [ho mita mongsi]  
loudly-very.sad Sub cry  
the resultative as the main predicate the action verb in a adverbial clause

#### e. Kimaragang Dusan (Kroeger 2006):

[adan-o'] yalo [mamasut]!  
faint-OV.IMPER 3sg.Nom AV-TR1-whip 'Whip him unconscious!'  
the resultative as the main predicate the action verb as the complement

#### VSO languages:

Tagalog (Nagaya 2004):

kinaing lasing ni Fe ang halo-halo.  
eat.OV.PRFV.LINK drunk Gen Fe Nom halo-halo 'Fe ate the halo-halo drunk.'  
the action verb as the main predicate the resultative as an adjunct

→ Headness does not help us with determining which clause as the main predicate.

It seems that in VOS languages, resultatives/descriptives are pervasively treated as the main predicate, in other languages, they involve secondary predication.



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