

On Tsou *Wh*-Questions: Movement or in Situ?*

Melody Ya-yin Chang

National Tsing Hua University

The paper deals with the syntactic status of *wh*-questions in Tsou. Assuming that some typological distinctions among languages are recognized from the formation of *wh*-questions, some languages like English show S-structure movement of the *wh*-words, in contrast to languages like Mandarin Chinese, in which *wh*-words remain 'in-situ' at S-structure. However, Tsou has two ways to construct *wh*-questions: it allows typical *wh*-in-situ's as well as fronted *wh*-words. The aim of this paper is first to show evidence that the sentences with apparently fronted *wh*-words in Tsou are in fact instances of cleft equational sentences. In turn, based on the absence of island effects, I argue that Tsou is truly a *wh*-in-situ language, where no actual movement of the *wh*-words is involved. Finally, the presence of donkey sentences in Tsou further suggests that it is unselective binding, rather than movement, that plays a role in forming *wh*-dependency.

Key words: Tsou, *wh*-question, movement, *wh*-in-situ, island effect

1. Introduction

Tsou is an Austronesian language, spoken on A-li Mt. in Taiwan.

It has been proposed in the linguistic literature that some typological distinctions among languages are recognized from the formation of *wh*-questions. Some languages like English show S-structure movement of the *wh*-words, in contrast to languages like Mandarin Chinese, in which *wh*-words remain 'in-situ' at S-structure, as shown in (1) and (2)¹ (Cheng 1997, Aoun and Li 1993):

* The Tsou dialect investigated in this paper is the so-called Tfuya. For the collection of all the data in the paper, I would like to thank my informants: mo'o peongsi (汪幸時) and pasuya tiakiana (鄭政宗). I am also grateful to Jane Chih-chen Tang, Dylan Wei-tien Tsai, Yung-li Chang, Bonnie Hui-chun Chiu, Elizabeth Zeitoun, and Su-ying Hsiao for the discussion of this paper. Finally, I greatly appreciate the anonymous reviewer for his valuable suggestions and comments. Thanks are also due to the National Science Council for providing financial support that helped me carry out this study from August 1996 to July 1997.

¹ The abbreviations used in this paper are as follows: Emp: emphatic marker, AF: agent focus, PF: Patient Focus, NAF: non-Agent Focus, Rea: realis, Irr: Irrealis, Nom: nominative case marker, Obl: oblique case marker, Pl: plural, Perf: Perfective, Hab: habitual, 1S: 1st person singular, 2S: 2nd person singular, 3S_N: 3rd person singular nominative agreement, 3S_O: 3rd

English: *wh*-fronting

- (1) Who_i does John hit e_i?

Mandarin Chinese: *wh*-in-situ

- (2) Zhangsan da-le shei ne?
 Zhangsan hit-Asp who Q
 Who does Zhangsan hit?

However, Tsou *wh*-words may either be fronted or be left in-situ, as shown in (3)-(4):

Tsou: *wh*-fronting

- (3) a. (zou) sia_i 'e m-i-ta eobak-o ta mo'o e_i?
 Emp who Nom AF-Rea-3S_N hit-AF Obl Mo'o
 Who is the one that hit Mo'o?
 b. (zou) sia_i 'e i-si eobak-a to pasuya e_i?
 Emp who Nom NAF/Rea-3S_O hit-PF Obl Pasuya
 Who is the one that Pasuya hit?

Tsou: *wh*-in-situ

- (4) a. m-i-ta eobak-o no sia 'e pasuya?
 AF-Rea-3S_N hit-AF Obl who Nom Pasuya
 Who did Pasuya hit?
 b. i-si eobak-a no sia 'e mo'o?
 NAF/Rea-3S_O hit-PF Obl who Nom Mo'o
 Lit: Who was the one that Mo'o was hit by?
 Who hit Mo'o?

The *wh*-words in (3) are fronted, but in (4) remains in-situ. (3a) and (4a) are examples of AF constructions, while (3b) and (4b) are PF constructions.

The aim of this paper is two-fold: first to show that the sentences with apparently fronted *wh*-words are instances of cleft constructions and further to argue that Tsou is truly a *wh*-in-situ language and no movement of the *wh*-words is involved.

The paper is organized as follows. In section 2 I provide evidence that the sentences with apparently fronted *wh*-words are instances of cleft equationals. In section 3 I further claim that Tsou is a truly *wh*-in-situ language and in section 4 that it is unselective binding rather than syntactic movement playing a role in construal of *wh*-questions. Section 5 is a review of the whole paper.

person singular oblique agreement, and Affirm: affirmative marker, COMP: complementizer, Pre: present, CL: cleft, Dem: demonstrative, P: preposition, L: linker, Par: particle.

2. Sentences with fronted *wh*-words as cleft equationals²

2.1 Striking similarity of appearance

From (3) and (4), Tsou looks like an optional movement language because it allows typical *wh*-in-situ's as well as fronting of the *wh*-words. Observe the Tsou cleft equational sentences in (5) which structurally correspond to instances of fronted *wh*-words:

Cleft equationals:

- (5) a. (zou)[_{NP} pasuya] 'e-[_{NP} m-i-ta eobak-o ta mo'o e].
 Emp Pasuya Nom AF-Rea-3S_N hit-AF Obl Mo'o
 The one who hit Mo'o is Pasuya.
- b. (zou)[_{NP} mo'o] 'e-[_{NP} i-si eobak-a to pasuya e].
 Emp Mo'o Nom NAF/Rea-3S_O hit-PF Obl Pasuya
 The one who was hit by Pasuya is Mo'o.

In Tsou, the cleft equationals can be divided into two parts as NP-NP constituency. The first NP is clefted as the highlight³, while the second NP is taken as a presupposition, which is a headless relative clause introduced by the nominative marker 'e' indicating that the clause is in fact an NP. *zou*, being an emphatic marker, optionally appears before the highlighted element.

As to *wh*-questions, the highlight of the question falls on the interrogative phrase. The *wh*-questions with fronted *wh*-words in Tsou can also be broken into two parts, namely, NP-NP constituency, which is much like the cleft equationals:

Sentences with fronted *wh*-words:

- (6) a. (zou) [_{NP} sia] 'e-[_{NP} m-i-ta eobak-o ta mo'o e]?
 Emp who Nom AF-Rea-3S_N hit-AF Obl Mo'o
 Who is the one that hit Mo'o?
- b. (zou) [_{NP} sia] 'e-[_{NP} i-si eobak-a to pasuya e]?
 Emp who Nom NAF/Rea-3S_O hit-PF Obl Pasuya
 Who is the one that was hit by Pasuya?

² Starosta (1988:561) termed this kind of construction a 'cleft equational'. Thus, in this paper I will use this term to indicate such a structure.

³ The clefted element is often referred to in the literature as the 'focus'. In order to avoid any confusion with the 'focus' system in Austronesian languages, I shall refer to this constituent informally as the 'highlighted element' throughout this paper.

As illustrated in (6), in order to function as the highlight of the sentence, it is natural for the interrogative phrase *sia* ‘who’ to appear as the first NP and *zou* can still optionally occur immediately before the highlighted interrogative phrase for emphasis. Again, the nominative case marker *’e* introduces the second NP containing a headless relative clause.

So far, in comparing (6) with (5), such fronting of *wh*-word in Tsou share with the formation of cleft equationals the same structure: (a) the ‘highlighted NP’ is placed in sentence-initial position and is optionally preceded with the emphatic marker *zou* for emphasis, and (b) the nominative case marker *’e* is inserted between the ‘highlight NP’ and the rest of the clause, indicating that the category of the clause is an NP. In such way, their occurrences look strikingly similar.

Besides their surface similarities, both the fronted *wh*-word questions and cleft equationals share the same properties. One of the properties is that the preposing of a *wh*-word and the clefted NP are both subject sensitive, i.e., the fronted *wh*-word and clefted NP must function as the sentence subject, as can be seen by comparing (5) with (7) and (6) with (8):

- (7) a. **(zou) mo’o ’e*-[NP *m-i-ta eobak-o e ’e pasuya*].
 Emp Mo’o Nom AF-Rea-3S_O hit-AF Nom Pasuya
 b. **(zou) pausya ’e*-[NP *i-ta eobak-a e ’e mo’o*].
 Emp Pasuya Nom NAF/Rea-3S_N hit-PF Nom Mo’o
 (8) a. **(zou) sia ’e*-[NP *m-i-ta eobak-o e ’e pasuya*?]
 Emp who Nom AF-Rea-3S_O hit-AF Nom Pasuya
 b. **(zou) sia ’e*-[NP *i-ta eobak-a e ’e mo’o*?]
 Emp who Nom NAF/Rea-3S_N hit-PF Nom Mo’o

As shown in (5) and (6), only a clefted NP or fronted *wh*-word that is in subject (nominative case) position can be raised to sentence initial position, but those in non-subject (oblique case) positions cannot, as shown in (7) and (8).

Another property that is shared by cleft equationals and *wh*-fronted sentences is their reversibility. Since cleft equationals in Tsou are a special kind of equational sentence, the two NPs can be reversed. Compare (5) with (9):

- (9) a. *’e*-[NP *m-i-ta eobak-o ta mo’o e*] **(zou) [NP pasuya]*.
 Nom AF-Rea-3S_N hit-AF Obl Mo’o Emp Pasuya
 The one who hit Mo’o is Pasuya.
 b. *’e*-[NP *i-si eobak-a to pasuya e*] **(zou) [NP mo’o]*.
 Nom NAF/Rea-3S_O hit-PF Obl Pasuya Emp Mo’o
 The one who hit was hit by Pasuya is Mo’o.

Similarly, the reversibility is also observed in fronted *wh*-word questions. Compare (6) with (10):

- (10) a. 'e-[_{NP} m-i-ta cobak-o ta mo'o e] *(zou) [_{NP} sia]?
 Nom AF-Rea-3S_N hit-AF Obl Mo'o Emp who
 Who is the one that hit Mo'o?
- b. 'e-[_{NP} i-si cobak-a to pasuya e] *(zou) [_{NP} sia]?
 Nom NAF/Rea-3S_O hit-PF Obl Pasuya Emp who
 Who is the one that is hit by Pasuya?

As evidenced by (10), it reveals that the *wh*-word *sia* 'who' is not fronted in construal of a *wh*-question. Note that *zou*, being an emphatic marker, always appears before the highlighted element. However, in (5) and (6) *zou* is optional, but in (9) and (10) it is obligatory⁴.

Based on the discussion above, we have seen the sentences with apparently fronted *wh*-words and the cleft equationals have a striking similarity in their appearance and properties. In the immediately following subsection, I will further argue that the fronting of *wh*-words are in fact instances of cleft equationals, which is supported by syntactic evidence.

2.2 No movement

Apart from the surface description, the main question is whether the fronting in this case involves actual fronting of the *wh*-words to [Spec, CP]. Given the hypothesis of *wh*-movement put forth by Chomsky (1977), locality effects, being an indication of movement, are often taken to represent the general properties of UG. In English-type languages, a well known fact of *wh*-movement constructions is that they observe Subjacency. Sentences (11)–(12) exemplify island effects in *wh*-question: (11) violates complex NP constraints and (12) *wh*-island constraints:

⁴ I'll try to explain this asymmetry here. As far as I know, there are two ways to make a distinction between the highlighted element and the presupposition in Tsou: one is the use of the emphatic marker *zou*, and the other is the syntactic device of cleft equationals. In the typical Tsou cleft equational sentences like (5) and (6), the highlight and presupposition can be distinguished one from the other by a syntactic device, namely fronting of the highlighted element. Therefore, the presence of the emphatic marker *zou* is optional. However, in the reversed cleft equationals as in (9) and (10), the highlighted element and headless relative clause of the presupposition cannot be differentiated without the emphatic marker *zou*. That is, the presence of the emphatic marker *zou* is necessary to help the audience avoid confusion in parsing.

- (11) * [_{CP} *What_i* [did you believe [_{Complex NP island} the report [that Emma was hiding behind *t_i*]]]]?
 (12) * [_{CP} *What_i* [did Mary wonder [_{*wh*-island} John bought *t_i*]]].

The island effects are accounted for by the well-formedness conditions on the relation between the variable (trace) and its binder, the raised *wh*-element. The island effects thus have been used as a diagnostic of movement (see Chomsky 1977, Lasnik and Saito 1992).

In Tsou, however, the fronting of *wh*-words is not the same as the fronting of *wh*-words in English. As mentioned above, *wh*-fronting languages like English observe Subjacency, and thus involve overt movement, while the *wh*-fronting phenomena in Tsou does not. Sentences (13) and (14) exemplify the island violations in *wh*-fronting constructions in Tsou:

- (13) (zou) *sia_j* [’o [m-i-cu m-an’i [_{complex-NP island} ’o [o-h-ta-la
 Emp who Nom AF-Rea-Perf AF-many Nom NAF-Rea-3S_O-Hab
 ea-a *e_j*] ci fuzu].
 catch-PF CI wild-boar
 Who caught many wild-boars?
 (14) (zou) *sia_j* [na [os-’o uci-a cohiv-i [_{*wh*-island} m-o m-hin-o no
 Emp who Nom NAF-1S want-PF know-PF AF-Rea AF-buy-AF Obl
 cuma *e_j*]].
 what
 I wonder who is the person *x* such that *x* bought the thing *y*.

(13) is an instance of a complex NP constraint violation, while (14) is a *wh*-island violation. The acceptability of island violations by the fronted *wh*-words in Tsou, in contrast with the unacceptability in the English cases, indicates that the formation of *wh*-questions in English is derived from syntactic movement, whereas in Tsou no overt movement is involved in construing the *wh*-questions.

It seems to be a tough call so far. However, on observing more cleft equationals in Tsou, it is encouraging to find that the cleft equationals, like the sentences with fronted *wh*-words in Tsou, exhibit no island effects. Example (15) indicates that the cleft equational sentence displays no complex NP island effects, while example (16) displays no *wh*-island effects:

- (15) (zou) *pasuya*_i ['o [m-i-cu m-an'i [complex-NP island 'o [o-h-ta-la
 Emp Pasuya Nom AF-Rea-Perf AF-many Nom NAF-Rea-3S₀-Hab
 ea-a *e_i*] ci fuzu].
 catch-PF CI wild-boar
 The one who caught many wild-boars is Pasuya.
- (16) (zou) *pasuya*_i ['o [os-'o uci-a cohiv-i [*wh*-island m-o m-hin-o no
 Emp Pasuya Nom NAF-1S want-PF know-PF AF-Rea AF-buy-AF Obl
 cuma *e_i]]]*.
 what
 I wonder what is the thing *x* such that the one who bought *x* is Pasuya.

As indicated above, the clefted NP *pasuya* is base-generated as the predicate of the whole sentence and hence no movement is involved in the formation of cleft equationals. The absence of island effects is thus predictable.

The fact that cleft equationals in Tsou display no island effects and involve no movement supports the view that the apparently fronted *wh*-words are in fact instances of cleft equationals since cleft equational and *wh*-fronting in Tsou are not different with respect to island violations. Therefore, the apparently 'fronted' *wh*-word is a base-generated predicate of a cleft equational and no movement of the *wh*-word was involved.

At this point, I have sufficiently argued that the fronting of *wh*-words in Tsou is precisely an instance of cleft equationals. Interestingly enough, this phenomena is also attested to in other languages. I will go into this in the immediate subsections.

2.3 Evidence from other languages

Tsou is not unusual as a language in which fronted *wh*-words are in fact, instances of cleft equationals⁵. Other languages also exhibit the same phenomena. As shown in (17)-(19), *wh*-in-situ is possible in the following three languages as well: (Examples quoted from Cheng 1997: 44-48)

Wh-in-situ:

Egyptian Arabic (from Wahba 1984)

⁵ Tsou expresses the clefting-focus only with cleft equational sentences. No cleft sentence is observed in Tsou. Thus the *wh*-fronting in Tsou can only appear as a pseudo-cleft sentence, while in other languages it can occur as a cleft sentence.

- (17) a. Fariid hawil yi'mil eeh?
 Fariid tried to-do what
 What did Fariid try to do?
 b. Mona 'irfit [Ali haawil yisaafir feen].
 Mona knew Ali tried to-travel where
 Mona knew where Ali tried to go.

Bahasa Indonesia (from Saddy 1990)

- (18) a. Sally men-cintai siapa?
 Sally pre-loves who
 Who does Sally love?
 b. Bill tahu [bahwa [Tom men-cintai sipa]].
 Bill knows that Tom pre-loves who
 Bill knows who Tom loves.

Palauan (from Georgopoulos 1989)

- (19) a. k-osiik er a te'ang?
 2S-look for P who
 Who are you looking for?
 b. ng-mele'ede' [el kmo [ng-mengiil er ngiiel kmo meruul a ngerang]].
 3S-wonder L Comp 3S-Rea/wait P him L Comp Rea/do what
 He is wondering what she is waiting for him to do.

The *wh*-in-situ's in the above languages are allowed in both matrix and embedded clauses.

Like Tsou, these languages look like optional movement languages because they allow typical *wh*-in-situ's as well as the fronting of the *wh*-words, as shown in (20)-(22):

Fronting of *wh*-words:

Egyptian Arabic:

- (20) miin illi Mona darabit-uh? (from Wahba 1984)
 who that Mona hit-him
 Who did Mona hit?

Bahasa Indonesia:

- (21) siapa yang Sally cintai? (from Saddy 1990)
 who that Sally loves
 Who does Sally love?

Palauan:

- (22) *ng-te'a* a kileld-ii a sub? (form Georgopoulos 1989)
CL-who Nom Rea/PF/heat-3S Nom soup
Who heated up the soup?

Meanwhile, in comparing (20)-(22) with (23)-(25), I find that the fronting of *wh*-words have a clear resemblance to clefts:

Clefts:

Egyptian Arabic:

- (23) (dah) muhamad illi gih. (from Gary and Gamal-Eldin 1982)
this Mohammed that came
It is Mohammed who came.

Bahasa Indonesia:

- (24) kamar itu (lah) yang harus kami hias. (from Dardjowidjojo 1978)
room Dem Part that must we decorate
It is that room that must be decorated.

Palauan:

- (25) *ng-Basilia* a mengaus er tia el tet. (form Georgopoulos 1989)
CL-Basilia Nom Rea/weave P Dem L bag
It is Basilia who is weaving this bag.

Thus, in the above ‘optional fronting’ languages, the sentences with apparently fronted *wh*-words are instances of cleft sentences. The apparently ‘fronted’ *wh*-word is base-generated as a clefted element and no movement of the *wh*-word is involved (see more in Cheng 1997).

With the availability of this strong evidence above, I therefore call the sentences involving a *wh*-word in a clefted position *wh*-clefts. As mentioned in the beginning, the *wh*-words in Tsou can be fronted or left in-situ. So the fronting of *wh*-word here can be shown to be an instance of cleft equationals. Now let us turn to the *wh*-in-situ’s.

3. Tsou as a truly *wh*-in-situ language

3.1 *Wh*-words in situ

Holding to the *wh*-clefts analysis of the *wh*-fronting sentences, let’s go on to observe the alternative way of expressing *wh*-questions in Tsou, namely, *wh*-in-situ’s. Compare (26) with (27):

Declarative sentences:

- (26) a. m-i-ta eobak-o ta mo'o 'e pasuya.
 AF-Rea-3S_N hit-AF Obl Mo'o Nom Pasuya
 Pasuya hit Mo'o.
- b. i-ta eobak-a ta pasuya 'e mo'o.
 NAF/Rea-3S_O hit-PF Obl Pasuya Nom Mo'o
 Mo'o is hit by Pasuya.

Sentences *wh*-in-situ:

- (27) a. m-i-ta eobak-o no sia 'e pasuya?
 AF-Rea-3S_N hit-AF Obl who Nom Pasuya
 Who did Pasuya hit?
- b. i-ta eobak-a no sia 'e mo'o?
 NAF/Rea-3S_O hit-PF Obl who Nom Mo'o
 Who is the one that Mo'o is hit by?

In the comparisons made above, the *wh*-word *sia* 'who' in (27) remains in-situ rather than appearing as a matrix predicate like the *wh*-cleft in (6). No overt movement of *wh*-words takes place. This is characteristic of *wh*-in-situ languages.

Just like other *wh*-in-situ languages, *wh*-in-situ's in Tsou are allowed in both matrix and embedded clauses, as shown in (28)-(30)⁶:

Wh-in-situ in embedded clauses:

- (28) os-ko ta'unan-a [mo m-hin-o no cuma 'e pasuya]?
 NAF-2S think-PF AF buy-AF Obl what Nom Pasuya
 What did you think that Pasuya bought?
- (29) os-'o uci-a cohiv-i [mo m-hin-o no cuma 'e pasuya].
 NAF-1S wonder-PF AF AF-buy-AF Obl what Nom Pasuya
 I wonder what Pasuya bought.
- (30) a. os-ko cohiv-i [*ho/∅ [mo m-hin-o no cuma 'e pasuya]?
 NAF-2S know-PF AF AF-buy-AF Obl what Nom Pasuya
 Lit: What do you know that Pasuya bought?
- b. os-'o cohiv-i [ho/*∅ [mo m-hin-o no cuma 'e pasuya]].
 NAF-1S know-PF that AF buy-AF Obl what Nom Pasuya
 I know what Pasuya bought.

⁶ Note that in (30), the behavior of *wh*-phrases in Tsou constituent questions is rather complicated. When *ho* appears, the *wh*-word *cuma* 'what' can only have a narrow scope and become an indirect question as in (30b). But when *ho* does not appear, the *wh*-word *cuma* 'what' can have wide scope and become a direct question as in (30a). (see also in Tang 1997)

In multiple questions, the *wh*-words may still stay in-situ, as the example (31) indicates:

Wh-in-situ in multiple question:

- (31) mo mhin-o no cuma na sia?
 AF buy-AF Obl what Nom who
 Who bought what?

As illustrated above, *wh*-in-situ's seem to be prevalent in Tsou. We may be curious about whether the *wh*-in-situ questions in Tsou involve actual movement or not. Below I will prove that Tsou is truly a *wh*-in-situ language and that no actual movement is involved in construing *wh*-words.

3.2 No movement

In Tsou, the *wh*-words can occur within islands and be interpreted as having scope outside the island; i.e., island violations are possible with Tsou *wh*-words. (32) is an instance of a *wh*-island construction, while (33) is a complex-NP construction with an embedded clause within.

Wh-questions:

- (32) os-ko uci-a cohiv-i [_{*wh*-island} mo m-hin-o no cuma na sia]?
 NAF-2S want-PF know-PF AF AF-buy-AF Obl what Nom who
 a. You wonder [who is the person *x* such that *x* bought what]?
 b. You wonder [what is the thing *x* such that who bought *x*]?
- Ans: a. 'a mo'o 'o mo m-hin-o no cuma.
 Affirm Mo'o Nom AF AF-buy-AF Obl what
 (I wonder) what Mo'o bought. (*sia* 'who' takes wide scope)
- b. 'a tposu 'o i-si phin-i no sia.
 Affirm book Nom NAF/Rea-3S_O buy-PF Obl who
 (I wonder) who bought the book. (*cuma* 'what' takes wide scope)
- (33) [_{complex-NP island} 'o [i-si y-ainca [_{embedded clause} i-si tutput-a
 Nom NAF/Rea-3S_O PF-say NAF/Rea-3S_O catch-PF
 no sia 'e fuzu]] ci e'e] 'o mo atuvaes-i emz-o?
 Obl who Nom wild boar CI word Nom AF most-AF convincing-AF
 Who is the person *x* such that [the saying [which s/he said [that *x* caught the wild boar]]] is the most convincing?

(32) and (33) are standard examples of a Subjacency violation, yet they are

grammatically perfect. Based on the observations above, it is quite clear that sentences with *wh*-in-situ questions in Tsou do not display island effects, which indicates that no syntactic movement of the *wh*-words is involved.

On the surface, Tsou seems to be an optional fronting language, allowing not only fronted *wh*-words but also *wh*-in-situ's. Based on the shared properties of fronted *wh*-word questions with cleft equationals, I have evidence to support the claim that the sentences with apparently fronted *wh*-words are in fact instances of cleft equationals. Furthermore, the absence of island effects in Tsou cleft equationals leads me to conclude that the apparent 'fronting' does not involve movement of the *wh*-words to [Spec, CP], but that these words are base-generated in that position. The *wh*-fronting in Tsou is not really *wh*-movement.

Moreover, I may argue that Tsou is a *wh*-in-situ language by showing that no syntactic movement is involved in the construal of *wh*-words. This can be proven to be true on the basis of the absence of island effects. Actually, I have observed the absence of island effects on *wh*-questions. Nevertheless, other *wh*-constructions like cleft equationals and topicalizations also have instances of Subjacency violation, which gives further support for the view that Tsou is a truly *wh*-in-situ language. In the next subsection, I will touch on extra evidence within Tsou.

3.3 Evidence within language

In order to argue Tsou as a truly *wh*-in-situ language, I have set my evidence on the absence of island effects, which indicates that *wh*-questions are not derived by overt movement. However, the lack of Subjacency effects is not an isolated feature of *wh*-formation. Some instances of topicalization and cleft equationals are also immune to Subjacency, as evidenced by (34)-(37)((15) and (16) repeated here) (see more in Chang 1998):

Topicalizations:

- (34) [Topic 'o mo'o]_i [i-si mafe-a to pasuya
 Top Mo'o NAF/Rea-3S_O like to eat-PF Obl Pasuya
 [complex-NP island 'e [i-si ea-a e]_i ci fou fuzu]],
 Nom NAF/Rea-3S_O catch-PF CI meat of wild boar
 (o'a i-si mafe-a to paicɿ).
 not NAF/Rea-3S_O like to eat-PF Obl Paicɿ.
 Mo'o is the person x with whom Pasuya likes to eat [the meat of wild boar
 [which was caught by x]] but (with whom) Paicɿ doesn't.

- (35) [Topic 'o pasuya]_i [i-si uci-a cohiv-i to amo
 Top Pasuya NAF/Rea-3S_O want-PF know-PF Obl father
 [_{wh-island} m-o m-hin-o no cuma e_i],
 AF-Rea AF-buy-AF Obl what
 (o'a i-si uci-a cohiv-i to ino).
 not NAF/Rea-3S_O want-PF know-PF Obl mother.
 Pasuya is the person *x* such that father wonders [what *x* bought] (but mother doesn't).

Cleft equationals:

- (36) (zou) pasuya_i ['o [m-i-cu m-an'i [_{complex-NP island} 'o [o-h-ta-la
 Emp Pasuya Nom AF-Rea-Perf AF-many Nom NAF-Rea-3S_O-Hab
 ea-a e_i] ci fuzu].
 catch-PF CI wild-boar
 The one who caught many wild-boars is Pasuya.
- (37) (zou) pasuya_i ['o [os-'o uci-a cohiv-i [_{wh-island} m-o m-hin-o no
 Emp Pasuya Nom NAF-1S want-PF know-PF AF-Rea AF-buy-AF Obl
 cuma e_i]].
 what
 I wonder what is the thing *x* such that the one who bought *x* is Pasuya.

The instances of (34)-(37) violate the well-known island constraints, but are grammatical in Tsou. While (35) and (37) show instances of *wh*-island constructions, (34) and (36) are instances of complex NP constructions. Neither a complex NP island effect nor a *wh*-island effect are detected in topic constructions or cleft equationals in Tsou.

One important point emerges from the examples in (32) through (37): Tsou grammar allows the full range of island violations. In sum, the island constraints appear not to apply, and the *wh*-constructions, especially *wh*-questions, topicalization, and cleft equationals, cannot be reasonably characterized as movement structure. Consequently, I come to a convincing conclusion: Tsou is a truly *wh*-in-situ language and no movement is involved in construal of *wh*-words.

However, another question arises: how to construe *wh*-questions in Tsou? I will try to answer the question in the following sections.

4. Construal of *wh*-questions in Tsou

4.1 Unselective binding

In the literature, locality effects are an indication of movement. Movement triggers the island constraints which are the result of parameter settings of lexical idiosyncrasies. On the other hand, the absence of locality effects is an intrinsic feature of the other type of language, due to the parameter setting of a base-generated sentential null operator. The former is typically shown in English-type languages, while the later in Chinese-type languages. Tsai (1994, 1998b) further argues that it is unselective binding that plays an important role in shaping *wh*-dependency cross-linguistically. The typology of unselective binding construals in English-type and Chinese-type languages sets the parameter in the following ways:

- (38) a. Chinese-type languages: $[_{CP} OP_{x[Q]} [IP \dots wh(x) \dots]]$
 b. English-type languages: $[_{CP} [IP \dots [D^0 wh(x) - OP_{x[Q]}] \dots]]$
 $\rightarrow [_{CP} [PP/DP wh(x) - OP_{x[Q]}]_k] [IP \dots t_k \dots]]$

It follows that the locality effects displayed in the two types of language are exactly as expected:

- (39) Locality effects:

Single <i>wh</i> -question	English	Chinese
<i>wh</i> -island effects	yes	no
Complex NP effects	yes	no

As stated by Tsai (1994:53), since Chinese Q-operators are located in the CP Spec, no movement is involved, as in (38a). In contrast, since the whole English *wh*-phrase as operator-variable pair must move to CP Spec for feature checking, both complex NP island and *wh*-island constraints are observed, as in (38b).

Considering that Tsou is a *wh*-in-situ language like Chinese-type languages and that it typically ignores syntactic islands, I adopt Tsai's non-movement strategy for Chinese-type languages to Tsou. Thus, the way to construct an operator-variable pair in a *wh*-question is as illustrated in (40):

- (40) $[_{x'} \Delta [_{x'} \dots wh \dots]] \rightarrow [_{x'} OP_{[+Q]} [_{x'} \dots wh \dots]] \rightarrow [_{x'} OP_{t[+Q]} [_{x'} \dots wh(t) \dots]]$

The first step involves Merger (also called binary substitution), which substitutes a

Q(uestion)-operator for an empty position, Δ . The operator in turn unselectively binds a *wh-in-situ* without resorting to movement (at S-S or LF). Since *wh*-questions involve interrogative quantificational force, their sentential null operators define their semantic scopes in their c-commanding domains.

Thus a sentential [+Q] null operator should be postulated here for (41) and (42):

- (41) $OP_{x[+Q]}$ (os-ko uci-a cohiv-i [*wh-island* mo m-hin-o no cuma(*x*) 'e pasuya)?
 (42) $OP_{x[+Q]}$ ([*complex-NP island* 'o [i-si y-ainca [*embedded clause* i-si tutput-a
 no sia(*x*) 'e fuzu]] ci ee'e] 'o mo atɔvaes-i emz-o?

Since both (41) and (42) involve unselective binding construals, the absence of island effects in Tsou is naturally accounted for.

With the [+Q] null operator, there is always a chance for other quantifiers to compete as a potential binder *wh*'s-in-situ. Thus, the correlation between *wh*-in-situ's with the extensive usage of donkey sentences and indefinite *wh*'s are predicted. (see also Cheng and Huang 1996, Huang 1982, Li 1992, Tsai 1998b)

4.2 Donkey sentences in Tsou

As expected from the correlation, Tsou also employs a pair of *wh*-phrases to construct a donkey sentence under universal quantification (Tsai 1997):

- (43) [*antecedent clause* te-ko b-on-u no cuma], [*consequence clause* te-'o m-aezo
 Irr-2S AF-eat-AF Obl what Irr-1S AF-also
 bon-u no cuma]. (from Tsai 1997)
 eat-AF Obl what
 Lit: What you eat, what I eat.
 I will eat whatever you eat.

As shown above, there is a *cuma* 'what' in the antecedent clause, paired with another *cuma* in the consequent clause, resulting in the following universal-conditional interpretation parallel to the sentential quantificational null operator in (39) and (40) (c.f. Tsai 1997):

- (44) \forall_x [*x* is a thing & you eat *x*] (I eat *x*)

Thus, the presence of donkey sentences in Tsou strongly supports the fact that there is no overt movement with respect to the formation of *wh*-questions, but that this

is a case of unselective binding instead.

4.3 Indefinite *wh*'s in Tsou

The unselective binding analysis is further affirmed by the extensive usage of indefinite *wh*'s in Tsou, where *wh*-phrases are constructed as variables rather than operators (see also Li 1991, Tsai 1997, 1998a): (Sentences (45)-(46) quote directly from Tsai (1998a))

- (45) a. hoci sia na mo o'te t-m-opsu, te-ko eusvut-a a'o.
if who Nom AF-Rea not write-AF Irr-2S tell-PF 1S
If anyone does not write, you must tell me.
- b. hoci cuma na i-ko umnu-a, naho ea-a.
if what Nom NAF-2S like-PF please take-PF
If you like anything, please take it.
- (46) a. masonu (=mo ason-u) sia na m-o m-aya-o to poyave,
AF-Rea maybe-AF who Nom AF-Rea AF-take-AF Obl knife
ko'ko o'a-os-'o elu-a.
so not-NAF-1S find-PF
Maybe someone took the knife, so I can not find it.
- b. m-o ason-u b-on-u no cuma,
AF-Rea maybe-AF AF-eat-AF Obl what
ko'ko m-i-ta con'e (=con-o 'e) buyo.
so AF-Rea-3S_N ache-AF Nom stomach
Maybe he ate something, so his stomach aches.

Indefinite *wh*'s in (45) appear freely in conditionals, while in (46) they occur in modality sentences. Whereas the former indefinite *wh*'s express the meaning of 'every' and belong to negative polarity construals, the later are shown to be existential construals which convey the meaning of 'some'.

I thus reach the conclusion that Tsou is a truly *wh*-in-situ language. It is unselective binding, rather than movement, that plays a role in forming *wh*-questions.

5. Overview

Assuming that some typological distinctions among languages are recognized from the formation of *wh*-questions, Tsou, at first glance, seems to be an optionally fronting language which allows not only fronted *wh*-words but also *wh*-in-situ's.

However, I have shown evidence in support of the argument that the sentences with apparently fronted *wh*-words are in fact instances of cleft equationals. On empirical grounds, cleft equationals and *wh*-fronted questions in Tsou not only have a strikingly similar appearance but share the same properties having the subject-sensitivity constraint and reversibility. On theoretical grounds, cleft equationals and *wh*-fronted questions in Tsou are not different with respect to Subjacency violations. Thus, unlike fronted *wh*-word languages as in English, the *wh*-fronting in Tsou is not really *wh*-movement, but is base-generated as a matrix predicate.

Like truly *wh*-in-situ languages, I have demonstrated that Tsou does not display island effects. This is a clear indication that no syntactic movement of the *wh*-word is involved in the construal of *wh*-questions in Tsou.

Furthermore, the presence of donkey sentences and the frequent use of indefinite *wh*'s strongly suggests that there is no overt movement with respect to the formation of *wh*-questions, but that *wh*-question formation involves unselective binding construals instead.

In conclusion, Tsou is shown to be a *wh*-in-situ language and it is unselective binding, rather than movement, that plays a role in forming *wh*-dependency. No syntactic movement is involved in the construal of *wh*-words.

References

- Aoun, Joseph, and Yen-hui Audrey Li (李豔惠). 1993. Wh-elements in situ: Syntax or LF. *Linguistic Inquiry* 24:199-238.
- Chang, Melody Ya-yin (張雅音). 1998. *Wh-constructions and the Problem of Wh-movement in Tsou*. Hsinchu: National Tsing Hua University MA thesis.
- Cheng, Lisa Lai-shen (鄭禮珊). 1996. *On the Typology of Wh-questions*. New York: Garland Pub.
- _____, and Cheng-teh James Huang (黃正德). 1996. Two types of donkey sentences. *Natural Language Semantics* 4:121-163.
- Chomsky, Norm. 1977. On *wh*-movement. *Formal Syntax*, ed. by P. Culicover, T. Wasow, and A. Akmajian. New York: Academic Press.
- Georgopoulos, Carol. 1991. *Syntactic Variables: Resumptive Pronouns and A' Binding in Palauan*. Dordrecht: Kluwer Academic Publishers.
- Huang, Cheng-teh James (黃正德). 1982. *Logical Relations in Chinese and the Theory of Grammar*. Cambridge: MIT dissertation.
- Lasnik, Howard, and Mamoru Saito. 1992. *Move α* . Cambridge: MIT Press.

- Li, Yen-hui Audrey (李豔惠). 1992. Indefinite *wh* in Mandarin Chinese. *Journal of East Asian Linguistics* 1:125-155.
- Starosta, Stanley. 1988. A grammatical typology of Formosan languages. *Bulletin of the Institute of History and Philology* 59.2:541-576.
- Tang, Chih-chen Jane (湯志真). 1999. On clausal complements in Paiwan. *Selected Papers from the Eighth International Conference on Austronesian Linguistics*, ed. by Elizabeth Zeitoun and Paul Jen-kuei Li, 529-578. Taipei: Institute of Linguistics, Preparatory Office, Academia Sinica.
- Tsai, Wei-tien Dylan (蔡維天). 1994. *On Economizing the Theory of A-bar Dependencies*. Cambridge: MIT dissertation.
- _____. 1997. Indefinite *wh*'s in Formosan languages and typology of *wh*-dependencies: Evidence from Seediq and Tsou. Paper presented at the 8th International Conference on Austronesian Linguistics. Taipei: Academia Sinica.
- _____. 1998a. (to appear). 〈台灣南島語疑問詞的無定用法—噶瑪蘭語、鄒語及賽德克的比較研究〉 [Indefinite *wh*-construals in Formosan languages -- A comparative study of Kavalan, Tsou and Seediq]. *Tsing Hua Journal of Chinese Studies*.
- _____. 1998b. On lexical courtesy. Manuscript.

[Received 20 August 1999; accepted 14 February 2000]

Graduate Institute of Linguistics
National Tsing Hua University
101, Sec.2, Kuang-Fu Rd.
Hsinchu 300, Taiwan
g844702@oz.nthu.edu.tw