

Wh-ex-situ and the Left Periphery in Mandarin Chinese

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1. The issue

1.1 Wh-movement : *wh*-words move to the sentence initial position, Spec of CP, to get its scope in order to be interpreted properly. The raised *wh*-word being considered as a quantifier/operator binds the trace it leaves *in-situ* as a variable.

(1) [_{CP} Who_i did [_{TP} you meet t_i yesterday]] ?

1.2 wh-in-situ: *wh*-words stay in their original positions without moving to the scope position [Spec, CP] (cf. 2).

(2) Zhāngsān mǎi-le shénme ?
Zhangsan buy-Perf what
'What has Zhangsan bought?'

→ Analyses: - LF-movement (Huang 1982)
- Clausal Typing Hypothesis (Cheng 1991),
- QU-operator analysis (Aoun & Li 1993),
- Unselective Binding mechanism (Tsai 1994),
- Prosodic Licensing at syntax-prosody interfaces (Pan 2007/2011)

1.3 wh-ex-situ in Mandarin: a non-subject *wh*-word can also appear in the sentence initial position (cf. (3)).

(3) Shénme Zhāngsān mǎi-le ?
what Zhangsan buy- Perf
'What has Zhangsan bought?' (Wu 1999:82)

→ Two traditional analyses :

i) *Wh*-topicalization approach: Tang (1988) and Wu (1999)

→ The concerned movement in (3) is treated as a case of topicalization. The fronted *wh*-word is analyzed as a *wh*-topic.

ii) *Wh*-fronting as contrastive focalization (cleft-constructions): Cheung (2008)

→ the fronted *wh*-words are analyzed as cleft foci.

Crucial argument: the fronted *wh*-word can be optionally preceded by a copula *shi* 'be' used in cleft-constructions in Chinese.

(4) (Shì) shénme dōngxi, Mǎlì mǎi-le ?
be what thing Mary buy-Perf
'What thing was it that Mary bought?' (Cheung 2008:39)
(Note: this sentence is very marginal for most of the native speakers)

→ Question: are the fronted *wh*-items topics or foci ?

- Topicalization approach: one needs to show that the movement of the *wh*-word derives the 'topic-comment' pattern, the fronted *wh*-word exhibits 'topic-like' behavior and passes all the tests for topics.

- Focalization approach: it is necessary to demonstrate that the fronted *wh*-word behaves like a contrastive focus and passes all the tests for contrastive foci.

2. My proposals in this course

- i) previous analyses reveal only a partial picture of a more general and more complicated phenomenon of *wh*-ex-situ in Chinese;
- ii) an ex-situ *wh*-phrase can either be a topic or a focus; and each of them can be derived *via* movement or be base-generated.
→ it gives four possible combinations:

	Topic: <i>wh</i> -phrase	Focus: <i>shi</i> 'be' + <i>wh</i> -phrase
Extraction	Type I	Type II
Base-generation	Type III	Type IV

Type I: extracted *wh*-topic (the gap is derived by movement)

- (5) [_{TOPP} Nǎ-yí-bù diànyǐng, [_{TP} Zhāngsān zuì bù xǐhuān kàn ___]] ?
 which-one-Cl film Zhangsan most Neg like see
 (Lit.) 'Which movie (is the one that) Zhangsan doesn't like at all?'

Type II: extracted *wh*-focus (the gap is derived by movement)

- (6) [_{FOCP} *(Shì) nǎ-yí-bù diànyǐng, [_{TP} Zhāngsān zuì bù xǐhuān kàn ___]] ?
 be which-one-Cl movie Zhangsan most Neg like see
 (Lit.) 'Which movie is it that Zhangsan doesn't like at all?'

→ *Cheung (2008)'s analysis*: (5) and (6) are both treated as focalization construction and the presence of *shi* 'be' is claimed optional in the case of *wh*-foci.

→ *Problem* : it does not take into account the difference between [*shi* 'be' ...*de*] clefts and the association with focus using *shi* 'be' only (cf. Paul & Whitman (2008)).

→ *My proposal*: i) (5) and (6) must be treated separately in that the presence/absence of *shi* 'be' makes a crucial distinction between a focus structure and a topic structure.

ii) (6) does not involve [*shi* 'be' ...*de*] clefts, but an association with focus and accordingly, the presence of *shi* 'be' is required.

Type III: base-generated *wh*-topic (gapless construction)

- (7) [_{TOPP} Nǎ-ge guójiā], [_{TP} nǐ xǐhuān de dàchéngshì bùduō] ?
 which-Cl country you like DE big-city not-many
 (Lit.) '[Which country] is the one that its big cities that [you like] are not many?'

→ *Na-ge guojia* 'which country' is base-generated in the TP external topic position.

→ *Previous works*:

- i) Tang (1988) and Wu (1999) do not discuss this type of *wh*-topic;
 ii) Cheung (2008) denies the existence of this type of structure with a counter argument.

→ *My account*: the so-called 'counter argument' is explained by a general semantic constraint on interrogatives, which is independent from the fact that the relevant *wh*-element is topic or focus on the one hand and that it is extracted to the left periphery or stays inside TP on the other.

Type IV: base-generated *wh*-focus (gapless construction)

- (8) [_{FoCP} Shì shéi de biǎoyǎn, [_{TP} dàjiā zuótiān dōu jiào-hǎo]]?
 be who DE performance everyone yesterday all cry-good
 (Lit.) 'It was (to) whose performance that everyone said "bravo!" yesterday?'

Note: *jiao-hao* 'cry "bravo"' is a true intransitive verb that cannot take any object at all. Therefore, *shei-de biao-yan* 'whose performance' cannot be extracted from the TP but must be base-generated in the sentence external focus position. Type IV has not been discussed in the previous studies.

- iii) When a *wh*-word is extracted toward a topic position *via* movement (Type I (5)), it obeys all the relevant syntactic and semantic constraints. A *wh*-focus (Type II (6) and Type IV (8)) must obey general constraints on focus structures in Chinese.
- iv) The discourse function of a TP-external *wh*-phrase (topic or focus) is totally determined by the functional projection holding it.

3. Extracted and Base-generated *wh*-topics (Type I & Type III)

3.1 Chinese does not allow optional *wh*-movement

French: optional *wh*-movement

- (9) a. **Qui** as-tu vu t_i hier?
 who have-you seen yesterday
 'Who did you see yesterday?'
- b. T'as vu **qui** hier? (Spoken French)
 you-have seen who yesterday
 'Who did you see yesterday?'

Chinese: *wh*-in-situ is the only strategy to form a *wh*-question. Both (9a) and (9b) should be interpreted as true information-seeking *wh*-questions in that they have exactly the same interpretation and illocutionary force.

→ The *wh*-fronting question in Chinese (cf. 3) should be treated as a case of topicalization. The movement in (3) is not *wh*-movement (Tang 1988 and Wu 1999).

Argument : 'scope ambiguity test': syntactic and interpretative differences between *wh*-movement and topicalization.

→ ***Wh*-movement** cannot cancel the scope ambiguity of the sentence.

(10) *Wh*-movement:

[Which student]_i did everyone see t_i? (Ambiguous between $\exists > \forall$ / $\forall > \exists$)

(i) 'everyone saw a potentially different student and who are they?' ($\forall > \exists$)

(ii) 'everyone saw exactly the same student, who is s/he?' ($\exists > \forall$)

→ **Topicalization** of a quantifier can cancel such an ambiguity!

(11) a. Everyone saw someone. (Ambiguous between $\exists > \forall$ / $\forall > \exists$)

b. Topicalization: Someone_i, everyone saw t_i. (Non-ambiguous $\exists > \forall$ / $*\forall > \exists$)

→ Chinese *wh*-fronting version (12b) patterns with the English quantifier topicalization case (cf. 11b).

(12) a. Měi-gè nánshēng dōu xǐhuān nǎ-běn shū ?
every-Cl boy all like which-Cl book
'Which book does every boy like?' (Ambiguous between $\exists > \forall$ / $\forall > \exists$)

b. [_{CP} [_{TOPP} [Nǎ-běn shū]_i [_{TP} měi-gè nánshēng dōu xǐhuān t_i]]] ?
which- Cl book every- Cl boy all like
'Which book (is the one that) every boy likes?' (Non-ambiguous $\exists > \forall$ / $*\forall > \exists$)

→ Generalization: Chinese *wh*-fronting case \neq optional *wh*-movement as in French
 \neq standard *wh*-movement in English
 \approx quantifier topicalization case in English

3.2 Topic (given info.) vs. *wh*-element (unknown info.): a contradiction ?

→ Topic: - 'what a statement is about and it must be in the possession of the hearer' (specially, Chinese style topics) (Li & Thompson 1976);
- it must be *old* (i.e. the referent must be mentioned in the previous discourse) or *given* (i.e. the hearer has the referent in mind);
- it bears the feature of *givenness* (Chafe 1976); a feature X of an expression α is a 'givenness feature' if X indicates whether the denotation of α is present in the Common Ground or not (Krifka (2007). Common Ground is the set of propositions whose truth is taken for granted as part of the background of the conversation (Stalnaker 1978).
- pronouns, definites, specific indefinites, and generics qualify as topics; non-specific indefinites do not (Erteschik-Shir 2007).

→ Wh-topics:

i) Chinese:

Observation: (12b): a specific book exists in the discourse; the speaker has a special referent in mind: a specific book that every boy likes reading. In this case, the D-linked *wh*-phrase *na-ben shu* 'which book' necessarily takes wide scope over the universal quantifier phrase *mei-ge nansheng* 'every boy'.
(12a): However, this referentiality effect is not observed in (12a) with the same *wh*-phrase in-situ.

Result: the **referentiality effect** appears in (12b), meaning that a specific book exists in the discourse or in the common knowledge of the interlocutors.

Reasoning: i) nominals in the topic position generally show referentiality effects.

ii) referentiality effects are associated with Topic position and thus can be considered as a property of the topic position.

→ Assumption: the fronted *wh*-phrase in (12b) can be analyzed as a topic since it shows similar referentiality effects.

Question: Without any context, (3) is unnatural or ungrammatical, **why?**

Answer: i) *shenme* 'what' is a simple *wh*-word that allows a speaker to ask an 'out-of-the-blue' question; by contrast, a topic position is a discourse-linked position and requires some given information which is shared by the co-speakers. Therefore, there is a semantic conflict.
ii) For (3) to be felicitous, both the speaker and the hearer have a set of things in the presupposition background.

iii) A simple *wh*-word as *shenme* ‘what’ can hardly appear in a topic position without any context. In contrast, complex *wh*-phrase such as *shenme cai* ‘what dish’ (cf. 15a) and the D-linked form *na-ge cai* ‘which dish’ (cf. 15b) can be naturally placed in the topic position.

- (15) a. [Shénme cài], Zhāngsān zuótiān chī-guò le ?
 what dish Zhangsan yesterday eat-Exp. SFP
 ‘What dish (is the one) that Zhangsan ate yesterday?’
- b. [Nǎ-ge cài], Zhāngsān zuótiān chī-guò le ?
 which-Cl dish Zhangsan yesterday eat-Exp. SFP
 ‘Which dish (is the one) that Zhangsan ate yesterday?’

Note: Both the speaker and the hearer have a common nominal set in mind. This set is composed of different dishes and the expected answer to the above questions picks out one dish from the set of dishes to satisfy the truth condition of the sentence.

→ Nominal restriction constraint (Pan): A *wh*-topic should apply to a restrictive N-set which exists either in the previous discourse or exists in the common knowledge of the interlocutors. Either the syntactic form of a *wh*-phrase provides a restrictive set in the case of complex *wh*-phrases, such as *shenme cai* ‘what dish’ and *na-ge cai* ‘which dish’ or the context provides such a restrictive set for a simple *wh*-word, such as in (3).
 The simple (*out-of-the-blue*) form of *wh*-words that does not apply to any restrictive N-set is excluded from Topic position.

ii) English:

Question: Mandarin allows *wh*-words to appear in the topic position but other languages such as English do not, **why**?

Answer: D-linked *which* + NP questions in English are treated as cases of topicalization (Cinque 1990, Boeckx and Grohmann 2004, Erteschik-Shir 1973, 1997, 2007).

Evidence 1: D-linked *wh*-phrases are not subject to the Superiority effect, as shown in (16, 17) (Chomsky 1973, Pesetsky 1987).

- (16) a. Who read what ?
 b. *What_i did who read t_i ?
- (17) a. Which man read which book?
 b. Which book_i did which man read t_i ?

Evidence 2: extraction of a D-linked *wh*-phrase from a matrix clause is better than the extraction of a non D-linked one from the same clause (Cinque 1990).

- (18) a. ? Which book did you wonder whether John bought?
 b. ?? What did you wonder whether John bought?

→ Analysis: *which* + NP is a topic, and only focus domains are transparent for purpose of extraction (Erteschik-Shir 1973, 1997). The comment/rheme part that bears new information is treated as focus domain.

→ Evidence from Chinese: Chinese confirms such a contrast.

- (19) a. * Shénme, shéi yǐjīng dú-guò t, le?
 what who already read-Exp. SFP
 (* 'What did who already finish reading?')
- b. [Nǎ-jǐ-běn shū], nǎ-xiē tóngxué yǐjīng dú-guò t, le?
 which-several-Cl book which-Pl student already read-Exp. SFP
 'Which book did which student finish reading?'

→ (19a): both *wh*-words are in their simple form; *what* cannot cross *who*.
 (19b): both are in their D-linked form, *which book* can cross freely *which student*.

Evidence 3 : only simple *wh*-words can be used in an *out-of-the-blue* question (Boeckx & Grohmann 2004). D-linked *wh*-elements have a topic-like character. They rely heavily on some previously established part of the discourse.

- (20) A: John bought something expensive yesterday.
 B: What did he buy?
 B: # Which car did he buy?

3.3 More evidence of extracted *wh*-topics (Type D)

Evidence 1 : Phrases in TopP can be marked by so-called 'topic markers (TM)' in Chinese: *ne*, *a* or *ya*. This also holds for fronted *wh*-words.

- (21) [Nǎ-ge cài] ne, Zhāngsān zuì xǐhuān chī?
 which-Cl dish TM Zhangsan most like eat
 'Which dish (is the one) that Zhangsan likes eating most?'

Evidence 2 : *Wh*-adverb *zen(me)yang* 'how'

→ In Chinese, it is possible for adverbials to occur in topic position (cf. 22b):

- (22) a. Tā yòng máobǐ xiě-le yì-shǒu shī.
 he use writing-brush write-Perf one-Cl poem
 'He wrote a poem with a writing brush.'
- b. [Yòng máobǐ], tā t, xiě-le yì-shǒu shī.
 use writing-brush he write-Perf one-Cl poem
 'With a writing brush, he wrote a poem.'

→ Adverbial *zenmeyang* 'how' cannot be fronted (Wang & Wu 2006)

- (23) a. Lǎowú zěnmeyàng xīurǔ Lǐsì ?
 Laowu how insult Lisi
 'How did Laowu insult Lisi?'
- b. * Zěnmeyàng, Lǎowú t, xīurǔ Lǐsì ?
 how Laowu insult Lisi

My account: Only nominals can be D-linked. Being a manner adverb, *zen(me)yang* 'how' does not apply to a restrictive set and thus cannot undergo topicalization. If we force a *wh*-adverb to be D-linked, it becomes a nominal.

(24): *zen(me)yang* 'how' is replaced by a D-linked nominal *yong shenme bi* 'with what kind of writing tool' and the nominal set is understood as {writing tool}. It then can undergo topicalization.

- (24) a. Tā yòng máobǐ xǐe-le yì-shǒu shī.
 he use writing-brush write-Perf one-Cl poem
 'He wrote a poem with a writing brush.'
- b. Tā [yòng shénme bǐ] xǐe-le yì-shǒu shī?
 he use what pen write-Perf one-Cl poem
 'With what kind of pen did he write a poem?'
- c. [Yòng shénme bǐ], tā t_i xǐe-le yì-shǒu shī?
 use what pen he write-Perf one-Cl poem
 (Lit.) 'With what kind of pen, did he write a poem?'

Supporting evidence: Choice function mechanism works only for nouns, not for adverbs, since a noun but not an adverb applies to an N-set from which a choice function can pick out a member as variable (Reinhart 1998).

Evidence 3 : locality constraints: A'-movement give rise to **island effects**.

- **Subjacency:** - A'-movement cannot cross two barriers in one step.
 - TP and NP are barriers in English.

(25) Complex NP (relative clause)

- a. [_{TP} Jonh likes [_{NP} the book [_{CP} that J.K Rowling wrote]]].
- b. * [_{CP} Who_i do [_{TP} you like [_{NP} the book [_{CP} that t_i wrote]]]] ? (* NP+TP)
- c. Wǒ xǐhuān [Lǚxùn xǐe] de shū.
 I like Luxun write DE book
 'I like the books that [Luxun wrote].'
- d. * Lǚxùn_i, wǒ xǐhuān [t_i xiě] de shū.
 Luxun I like write DE book
 ('Luxun_i, I like the books that [t_i wrote].')

(26) Complex NP (complement clause of nouns)

- a. [_{TP} I heard [_{NP} the rumor [_{CP} that John insulted Mary]]].
- b. * [_{CP} Who did [_{TP} you hear [_{NP} the rumor [_{CP} that John insulted t_i]]]] ? (* NP+TP)
- c. Wǒ tīngshuō-le [Lǐsì mà-le Zhāngsān] de yáoyán.
 I hear-Perf Lisi insult-Perf Zhangsan DE rumor
 'I heard the rumor that [Lisi insulted Zhangsan].'
- d. * Zhāngsān_i, wǒ tīngshuō-le [Lǐsì mà-le t_i] de yáoyán.
 Zhangsan I hear-Perf Lisi insult-Perf DE rumor
 ('Zhangsan_i, I heard the rumor that [Lisi insulted t_i].')

(27) Sentential subject

- a. [_{TP} [_{NP} [_{CP} That John got married in China]]] surprised everyone].
- b. * [_{CP} Where_i did [_{TP} [_{NP} [_{CP} that [_{TP} John get married t_i]]]]] surprised everyone] ? (* NP+TP)
- c. [Zhāngsān qù-le Měiguó lǚxíng] shǐ wǒmén dōu hěn jīngyà.
 Zhangsan go-Perf America travel make us all very surprised
 'That [Zhangsan went to America for travelling] made us very surprised.'

- d. * Měiguó, [Zhāngsān qù-le t_i lǚxíng] shǐ wǒmēn dōu hěn jīngyà.
 America Zhangsan go-Perf travel make us all very surprised
 ('America, that [Zhangsan went to t_i for travelling] made us very surprised.')

(28) Adjunct clause (adverbial clause of cause/purpose)

- a. [_{TP} John is angry with Mary [_{CP} because [_{TP} she broke his favorite CD]]].
- b. [_{CP} What_i is [_{TP} John angry with Mary [_{CP} because [_{TP} she broke t_i]]]]? (* TP + TP)
- c. [Wèile Zhāngsān néng qù Fǎguó niànshū], tā māma geǐ tā
 for Zhangsan can go France study his mother for him
 zhǎo-le yí-wèi fǎwén lǎoshī.
 find-Perf one-Cl French teacher
 '[In order for Zhangsan to be able to go to France for his studies], his mother
 found a French language teacher for him.'
- d. * Fǎguó, [wèile Zhāngsān néng qù t_i niànshū], tā māma geǐ tā
 France for Zhangsan can go study his mother for him
 zhǎo-le yí-wèi fǎwén lǎoshī.
 find-Perf one-Cl French teacher
 ('France, [in order for Zhangsan to be able to go to t_i for studying], his mother
 found a French language teacher for him.')

(29) Adjunct clause (conditional clause)

- a. [_{TP} John will be happy [_{CP} if [_{TP} Mary comes tonight for the party]]].
- b. * [_{CP} Who_i will [_{TP} John be happy [_{CP} if [_{TP} t_i comes tonight for the party]]]]?
 (* TP + TP)
- c. [Ruguo Zhāngsān qǐ yí-ge nénggàn de nǚhái], tā bàba jiù
 if Zhangsan marry one-Cl capable DE girl his father then
 huì gāoxìng.
 will happy
 '[If (and only if) Zhangsan marries to a capable girl], his father will be happy.'
- d. * [(Yí-ge) nénggàn de nǚhái], [ruguo Zhāngsān qǐ t_i],
 one-Cl capable DE girl if Zhangsan marry
 tā bàba cái huì gāoxìng.
 his father then will happy
 ('[A skillful girl], [if (and only if) Zhangsan marries to t_i], his father will be
 happy.')

→ *wh*-topicalization gives rise to island effects too.

(30) Complex-NP (Relative clause)

- a. Nǐ xǐhuān [[_{NP} nǎ-gè zuòjiā xiě] de [_{N'} shū]]?
 you like which-Cl writer write DE book
 'For which writer x, such that you like the book that [x wrote]?'
- b. * [Nǎ-gè zuòjiā], nǐ xǐhuān [[_{NP} t_i xiě] de [_{N'} shū]]?
 which-Cl writer you like write DE book
 ('Which writer x is the one that you like the book that [x wrote]?')

(31) Complex-NP (Complement of noun)

a. Zhāngsān bù xiāngxìn [_{NP} [Lǐsì zuótiān mà-le nǎ-ge lǎoshī]
Zhangsan not believe Lisi yesterday insult-Perf which-Cl teacher
de [_{N'} yáoyán]] ?

DE rumor

'For which teacher x, such that Zhangsan does not believe the rumor that [Lisi insulted x] ?'

b. * [Nǎ-ge lǎoshī]_i, Zhāngsān bù xiāngxìn [_{NP} [Lǐsì zuótiān
which-Cl teacher Zhangsan not believe Lisi yesterday
mà-le t_i] de [_{N'} yáoyán]] ?
insult-Perf DE rumor

('Which teacher x (is the one that) Zhangsan does not believe the rumor that [Lisi insulted x] ?')

(32) Sentential subject

a. [Zhāngsān qù nǎ-ge guójiā lǚxíng] huì shǐ dàjiā dōu hěn jīngyà ?
Zhangsan go which-Cl country voyage will make everyone all very surprise

'For which country x, such that (the fact that) [Zhangsan will have a trip in x] will make everyone surprised?'

b. * [Nǎ-ge guójiā]_i, [Zhāngsān qù t_i lǚxíng] huì shǐ dàjiā dōu
which-Cl country Zhangsan go trip will make everyone all
hěn jīngyà ?
very surprise

('Which country x (is the one that the fact that) [Zhangsan will have a trip in x] will make everyone surprised?')

(33) Adjunct clause (adverbial clause of purpose)

a. [Wèile Zhāngsān néng qù nǎ-ge guójiā niànshū], tā māma gěi
for Zhangsan can go which-Cl country study his mother for
tā zhǎo-le yí-wèi fǎwén lǎoshī?
him find-Perf one-Cl French teacher

'For which country x, such that [in order for Zhangsan to be able to go to x for his studies], his mother found a French language teacher for him?'

b. * [Nǎ-ge guójiā]_i, [wèile Zhāngsān néng qù t_i niànshū], tā māma
which-Cl country for Zhangsan can go study his mother
gěi tā zhǎo-le yí-wèi fǎwén lǎoshī?
or him find-Perf one-Cl French teacher

('Which country x (is the one that) [in order for Zhangsan to be able to go to x for his studies], his mother found a French language teacher for him?')

(34) Conditional clause

a. [Zhāngsān qù yí-ge shénme-yàng de nǚhái], tā bàba cái
Zhangsan marry one-Cl what-kind DE girl his father then
huì gāogxìng ?
will happy

'For what kind of girl x, such that [if (and only if) Zhangsan marries to x], his father will be happy ?'

- b. *[(Yí-ge) shénme-yàng de nǚhái], [Zhāngsān qù t], tā bàba
 one-Cl what-kind DE girl Zhangsan marry his father
 cái huì gāoxìng?
 then will happy
 ('[A what kind of girl], [if (and only if) Zhangsan marries to t], his father will be happy.')

(35) *Wh*-island

- a. Zhāngsān zuótiān **shénme-shíhòu** pèngdào-le nǎ-wèi lǎoshī?
 Zhangsan yesterday **when** meet-Perf which-Cl teacher
 'When did Zhangsan meet which teacher yesterday?'
- b. * [Nǎ-wèi lǎoshī], Zhāngsān zuótiān **shénme-shíhòu** pèngdào-le t?
 which-Cl teacher Zhangsan yesterday **when** meet-Perf
 ('Which teacher, when did Zhangsan meet yesterday t?')

Evidence 4 : Episodic eventuality constraint

→ Topicalization shows island effects only in the episodic eventuality contexts (specific eventualities) not in stable state contexts, such as individual-level predicates, habitual eventualities, and irrealis eventualities (Zhang 2002).

(36) Complex-NP (relative clause)

- a. Zhè-bù diànyǐng, [kàn-guò t] de rén bù-shǎo.
 this-Cl movie see-Exp DE person not-few
 'As for this movie, the people who [saw (it)] are many.'
- b. Nǎ-bù diànyǐng, [kàn-guò t] de rén bù-shǎo?
 which-Cl movie see-Exp DE person not-few
 'As for which movie, the people who [saw (it)] are many?'

(37) Sentential subject

- a. Zhè-shǒu gē, [jiějie chàng t] bǐjiào hǎo-tīng.
 this-Cl song elder-sister sing comparatively good-listening
 (Lit.) 'As for this song, the elder sister sings (it) better.'
- b. Nǎ-shǒu gē, [jiějie chàng t] bǐjiào hǎo-tīng?
 which-Cl song elder-sister sing comparatively good-listening
 (Lit.) 'As for which song, the elder sister sings (it) better?'

(38) Adjunct clause (temporal clause)

- a. Zhè-bù diànnǎo, [nǐ yòng t] de-shíhòu, yào xiǎoxīn.
 this-Cl computer you use when should attention
 (Lit.) 'As for this computer, when you use (it), you should pay attention!'
- b. Nǎ-bù diànnǎo, [nǐ yòng t] de-shíhòu, yào xiǎoxīn?
 which-Cl computer you use when should be-careful
 (Lit.) 'As for which computer, when you use (it), you should be careful?'

(39) *Wh*-island

- a. Zhè-jiàn shì, Zhāngsān bù zhīdào zěnme zuò t.
 this-Cl thing Zhangsan not know how do
 (Lit.) 'As for this thing, Zhangsan doesn't know how to do.'

- b. Nǎ-jiàn shì, Zhāngsān bù zhīdào zěnmē zuò t?
 which-Cl thing Zhangsan not know how do
 (Lit.) 'As for what thing, such that Zhangsan doesn't know how to do (it)?'

3.4 Base-generated *wh*-topics (Type IV)

→ *A false anti-topicalization argument*: normally gapless topics exist in Chinese (cf. 40a). If a fronted *wh*-word is a topic, why cannot it be a gapless topic, as shown in (40b)? (Cheung 2008).

- (40) a. Huā a, wǒ zuì xǐhuān méiguīhuā.
 flower TM I most like rose
 'As for flowers, I like roses most.'
- b. * [Shénme / Nǎ-zhǒng huā], nǐ zuì xǐhuān méiguīhuā?
 what which-Cl flower you most like rose
 ('As for what/what kind of flowers, do you like roses most?')

→ *My account*:

i) The contrast observed in (40) illustrates a general semantic constraint on interrogatives, which is totally independent of the fact that the relevant *wh*-word stays in-situ or appears in the topic position.

ii) To question a 'kind' item in a context containing only its 'sub-kind' item is illicit.

- (41) a. Wǒ xǐhuān shǒushì zhōng de jièzhǐ.
 I like jewelry among DE ring
 'Among jewelry I like rings most.'
- b. * Nǐ xǐhuān shénme zhōng de jièzhǐ?
 you like what among DE ring
 ('For which x, rings are sub-kind of x, such that you like x?')

(41a): *shoushi* 'jewelry' denotes a 'kind' and *jiezhǐ* 'ring' is its sub-kind.

(41b) is ungrammatical even if the relevant *wh*-word *shénme* 'what' stays in-situ.

iii) Gapless topics can be *wh*-elements if the *wh*-words apply to restrictive sets.

- (42) a. Zhōngguó, wǒ xǐhuān de dàchéngshì bùduō.
 China I like DE big-city not-many
 'As for China, the big cities that I like are not many.'
- b. [Nǎ-gè guójiā / *Shénme], nǐ xǐhuān de dàchéngshì bùduō?
 which-Cl country what you like DE big-city not-many
 (Lit.) '[Which country/*what] is the one that its big cities that [you like] are not many?'
- (43) a. Shànggè-xīngqī de jiāotōng-shìgù, xìngkuī jǐngchá lái-de jíshí.
 last-week DE traffic-accident fortunately police come-DE in-time
 'As for the traffic accident of the last week, fortunately the policemen arrived in time.'

- b. Shànggè-xīngqī de [shénme shìgù/*shénme], xìngkuī jǐngchá lái-de jíshí?
 last-week DE what accident what fortunately police come-DE in-time
 (Lit.) 'For [what accident /*what] of the last week x, such that fortunately the policemen arrived in time in x?'

(44) a. Dàxiàng ne, bízi hěn cháng.
 elephant TM nose very long
 'As for elephants, their noses are long.'

- b. Shénme dòngwù ne / Nǎ-zhǒng dòngwù ne, bízi hěn cháng?
 what animal TM which-kind animal TM nose very long
 'What kind of animal (is the one) that its nose is very long?'
 (Note : The offending cases involve only 'kind'- 'sub-kind' relationship (cf. 40 & 41). Other possible types of logical relationship, such as 'part-whole', are perfectly OK.)

3.5 Generalization

- i) Only *wh*-phrases which apply to a restrictive set either syntactically or contextually can be treated as topics.
- ii) A *wh*-topic shows semantic and syntactic properties similar to those of ordinary topics. The notion of *wh*-topic is also justified cross-linguistically.
- iii) *Wh*-topic in Type I cannot be reduced to any sort of *wh*-focus (Type II), contrary to the claim of Cheung (2008).
- iv) When a *wh*-element is in a topic position, it must obey not only the general restrictions on ordinary topicalization cases but also the general semantic constraints on interrogatives.
- v) Both types of *wh*-topic, extracted ones and base-generated ones exist in Mandarin.

4. Extracted and Base-generated *wh*-foci (Type II & Type IV)

4.1 Cheung (2008)'s account

Proposal: Reduce *wh*-fronting to cleft constructions: fronted *wh*-words are analyzed as contrastive foci and as clefts.

→ In a contrastive focus construction/cleft-sentence, an element extracted to the left periphery domain should be marked by the copula *shi* 'be' and be analyzed as a contrastive focus. In a standard case such as (45b), the presence of *shi* 'be' is obligatory and when the preposed element is a *wh*-word, the presence of *shi* 'be' becomes optional (*but why...?*).

(45) a. Speaker A: (Shì) [shénme], Mǎlì mǎi-le ? (shi 'be' is optional)
 be what Mary buy-Perf
 'What was it that Mary bought?'

b. Speaker B: Shì [màozi], tā mǎi-le (shi 'be' is obligatory)
 be hat she buy-Perf
 'It was a hat that she bought.'

4.2 Focus- constructions in Chinese

My claim: fronted *wh*-phrases cannot be systematically treated as foci.

Counter-argument 1 : The object cannot be preposed and marked by *shi* 'be' at the same time if the main verb is an action verb.

- (46) a. [Nǐ-de gǒu], wǒ zài gōngyuán-lǐ zhǎodào le. (Topicalization)
 your dog I at park-in find SFP
 'Your dog, I found (it) in the park.'
- b. * Shì [nǐ-de gǒu] wǒ zài gōngyuán-lǐ zhǎodào de. (shi...de)
 be your dog I at park-in find DE
 ('It was your dog that I found in the park.') (Teng 1979)
- c. * Shì [nǐ-de gǒu] wǒ zài gōngyuán-lǐ zhǎodào le. (Bare shi)
 be your dog I at park-in find SFP
 ('It was your dog that I found in the park.')

Counter-argument 2: All the crucial data with preposed *shi* + NP that appear in Cheung (2008), such as (45) and (47), are rejected by the native speakers.

- (47) * Shì Měiguó, wǒ qùnián qù-le.
 be US I last-year go-Perf
 'It was the US that I went last year.' (fully grammatical example in Cheung 2008: 65)

→ Only the extracted foci in non-episodic eventuality contexts are acceptable.

- (48) Shì [nǐ-de tàidù], tāmen bù xǐhuān.
 be your attitude they Neg like
 'It is your attitude that they don't like.'
- (49) a. Shì [wǒ gēn tā shuōhuà de fāngshì], tā hěn zàiyì t.
 be I with him speak DE way he very care
 'It is the way in which I speak with him that he cares.'
- b. Shì [nǐ huàhuà de fēnggé], dàjiā hěn xīnshǎng t.
 be you paint DE style everyone very appreciate
 'It is the style of your painting that everyone appreciates.'
- c. Shì nà-bù diànyǐng, [kàn-guò t] de rén hěn-duō.
 be that-Cl movie see-Exp DE person very-many
 'It is that movie that the people who [saw (it)] are many.'

This applies to the cases of the extracted *wh*-foci as well.

- (50) a. Shì [shéi-de tàidù], tāmen bù xǐhuān t?
 be whose attitude they Neg like
 'Whose attitude is it that they don't like?'
- b. Shì [nǎ-bù diànyǐng], [kàn-guò t] de rén hěn-duō?
 be which-Cl movie see-Exp DE person very-many
 'Which movie is it that the people who [saw (it)] are many?'

→ A *wh*-focus is not necessarily derived by movement because it can be base-generated.

- (51) a. Shì [Mǎlì de biǎoyǎn], dàjiā zuótiān dōu jiào-hǎo.
 be Mary DE performance everyone yesterday all cry-good
 (Lit.) 'It is (to) the performance of Mary that everyone said "bravo!" yesterday.'
- b. Shì [shéi de biǎoyǎn], dàjiā zuótiān dōu jiào-hǎo ?
 be who DE performance everyone yesterday all cry-good
 (Lit.) 'It was (to) whose performance that everyone said "bravo!" yesterday?'

Problem of Cheung (2008)'s analysis : Since a non-interrogative ex-situ focus and an ex-situ *wh*-focus behave exactly in the same way, there is no reason to assume that the presence of the marker *shi* 'be' is obligatory in the former case but not in the latter one.

My generalization: only when the ex-situ *wh*-phrase is marked by *shi* 'be', this *wh*-phrase is analyzed as focus. Without *shi* 'be', a fronted *wh*-phrase is analyzed as topic.

Argument: i) topic-structure but not focus-structure is subject to the episodic eventuality constraint in non-island contexts.

- (52) a. [Nǐ-de gǒu], wǒ zài gōngyuánlǐ zhǎodào t_i le.
 your dog I at park-in find SFP
 'As for your dog, I found (it) in the park.'
- b. [Měiguó], wǒ qùnián yǐjīng qù-guò t_i le.
 US I last-year already go-Exp-Perf SFP
 'As for the US, I've already visited (there) last year.'

ii) *Wh*-topics pattern exactly like non-interrogative topics.

- (53) [Nǎ-xiē guójiā], nǐ qùnián yǐjīng qù-guò t_i le?
 which-Pl countries I last-year already go-Exp-Perf SFP
 'Which countries (are those where) you have already visited last year?'

3.3 Problem of application of the Exhaustivity test in Cheung (2008)

→ Exhaustivity test (Zubizarreta & Vergnaud (2006)): a contrastively focused *wh*-question as in French gives rise to exhaustivity (i.e uniqueness of description) that does not permit a list answer (cf. 54), while the normal *wh*-question (i.e. an information focus), as in English, does not (cf. 55).

- (54) Speaker A: C'est [**qui**]_{c.FOC} qui a écrit un livre sur les rats? (French)
 'It is who that wrote a book about rats?'

Speaker B: *C'est [_{DP} **le chat**]_{c.FOC} qui a écrit un livre sur les rats, et c'est aussi [_{DP} **la chauve-souris**]_{c.FOC}
 'It is the cat that wrote a book about rats, and also the bat.'

- (55) Speaker A: Who wrote a book about rats?

Speaker B: [_{DP} The cat]_{i.FOC} wrote a book about rats, and [_{DP} the bat]_{i.FOC} did too.

→ Cheung (2008)'s application of this test: Chinese shows the same contrast between the in-situ *wh*-questions (cf. 56) pattern like (55) and the preposed *wh*-questions (cf. 57) pattern like (54).

(56) Speaker A: Mǎlì mǎi-le shénme dōngxi?
Mary buy-Perf what thing
'What thing(s) did Mary buy?'

Speaker B: i. Tā mǎi-le [màozi]_{I-FOC}.
she buy-Perf hat
'She bought a hat.'

ii. Tā mǎi-le [màozi]_{I-FOC}, yě mǎi-le [wàitào]_{I-FOC}.
she buy-Perf hat also buy-Perf coat
'She bought a hat, and also a coat.'

(57) Speaker A: (Shì) [shénme dōngxi]_{C-FOC}, Mǎlì mǎi-le ___?
be what thing Mary buy-Perf
'What thing was it that Mary bought?'

Speaker B: i. Shì [màozi]_{C-FOC}, tā mǎi-le ___.
be hat she buy-Perf
'It was a hat that she bought.'

ii. *Shì [màozi]_{C-FOC}, tā mǎi-le __. Shì [wàitào]_{C-FOC},
be hat she buy-Perf be coat
tā yě mǎi-le __.
she also buy-Perf
'It was a hat that she bought. It was a coat that she also bought.'

→ Problems of the application of Cheung:

i) The data presented in (57) are rejected by most informants. Especially, the Speaker B's answer (i) is an ungrammatical sentence.

ii) The copula *shi* 'be' is optional in (57A) but obligatory in (57B). The test can show that the *wh*-word marked by *shi* 'be' is a contrastive focus but it fails to show that the bare *wh*-phrase without *shi* 'be' in the same position must be a contrastive focus.

→ Correct application of the exhaustivity test:

(58) A: [Nǎ-bù diànyǐng]_v, [kàn-guò t_i] de rén bù-shǎo? (Topic)
which-Cl movie see-Exp DE person not-few
'Which movie is it that the people who [saw (it)] are many?'

B: *Hāli Bōtè*, kàn-guò de rén bù-shǎo; *Zhǐhuán Wáng*, kàn-guò de rén yě bù-shǎo.
'*Harry Potter*, the people who saw (it) are many; *The Lord of the Rings*, the people who saw (it) are many as well.'

(59) A: Shì [nǎ-bù diànyǐng]_v, [kàn-guò t_i] de rén bù-shǎo? (Focus)
be which-Cl movie see-Exp DE person not-few
'Which movie is it that the people who [saw (it)] are many?'

B: # *Shì Hālì Bōtè, kàn-guò de rén bù-shǎo; shì Zhǐhuán Wáng, kàn-guò de rén yě bù-shǎo.*

'It is *Harry Potter* that the people who saw (it) are many; it is also *The Lord of the Rings* that the people who saw (it) are many.'

→ (58): A question with a fronted *wh*-phrase without being marked by *shì* 'be' permits an exhaustive answer. (58A) is a topicalization case.

(59): A question with a *shì* 'be' marked fronted *wh*-phrase does not permit the exhaustive answer. (59A) is a focalization case.

5. Mapping *wh*-topics and *wh*-foci to the left periphery in Chinese

→ Recap.: Type I: extracted *wh*-topic: *wh*-topic t
 Type II: extracted *wh*-focus: *shì* 'be'+ *wh*-focus t
 Type III: base-generated *wh*-topic: *wh*-topic
 Type IV: base-generated *wh*-focus: *shì* 'be'+ *wh*-focus

Problems of the previous analyses:

i) Tang (1988) and Wu (1999)'s analyses can only apply to Type I;

ii) Cheung (2008) reduces Type I to Type II and denies the existence of Type III.

iii) Type IV has not been discussed in the previous studies.

My generalization: these four types should not be analyzed in a unified way.

5.1 Discourse nature of the ex-situ *wh*-phrases

(60) a. [_{ForceP} [_{TopP} Nǎ-yí-bù diànyǐng ne, [_{TP} Zhāngsān zuì bù xǐhuān __]]] ?
 which-one-CL. film TM Zhangsan most Neg like
 (Lit.) 'Which movie (is the one that) Zhangsan doesn't like at all?'

b. [_{ForceP} [_{FocP} *(Shì) nǎ-yí-bù diànyǐng, [_{TP} Zhāngsān zuì bù xǐhuān __]]] ?
 be which-one-CL. movie Zhangsan most Neg like
 (Lit.) 'Which movie is it that Zhangsan doesn't like at all?'

→ An anti-topicalization argument of Cheung (2008) : a pre-clausal *wh*-phrase cannot be followed by a topic marker, whether *shì* 'be' is present or not, as in (61).

(61) (Shì) [shénme dōngxi]_{C-FOC} (*a /ya), nǐ mǎi-le __ ?
 be what thing TM/TM you buy-Perf
 'What thing was that that you bought?'

→ My account: when *shì* 'be' is present, the incompatibility between the copula *shì* 'be' indicating the presence of a focused element and the topic marker is due to a semantic conflict. An element cannot be simultaneously interpreted as both focus and topic. When *shì* 'be' is not present, the sentence is acceptable, as in (62).

(62) Nǎ-dào cài ne, nǐ juéde __ bù hǎo-chī?
 which-CL dish TM you think __ not delicious
 'Which dish x is the one, such that you didn't think that x is delicious?'

5.2 Split CP and *wh-ex-situ* in Mandarin

→ Theoretical tools: split CP hypothesis & the cartographic thesis (Rizzi 1997)

→ Orders established in previous analyses:

- ForceP > TopP > *even* FocusP > TP > Paul (2002, 2005)

- Aboutness TopP > Hanging TopP > Left Dislocated TopP > *even* XP > (Badan 2007)

My proposal: the discourse function (topic or focus) of a *wh*-word is determined by the functional projection that hosts it.

→ we can simply replace the relevant non-interrogative topic in a sentence with its corresponding *wh*-word.

i) AT > TP-external '*shi* + NP' focus:

(63) a. Zuótiān de wǎnhuì, shì Mǎlì de biǎoyǎn, dàjiā juéde
 yesterday DE party be Mary DE performance everyone think
 zuì jīngcǎi.
 most wonderful (AT > focus)
 'As for the party last night, it was the performance of Mary that everyone thought wonderful.'

b. * Shì Mǎlì de biǎoyǎn, zuótiān de wǎnhuì, dàjiā juéde
 be Mary DE performance yesterday DE party everyone think
 zuì jīngcǎi.
 most wonderful (*focus > AT)

ii) We can easily replace the AT or the focused element in (64a) with a *wh*-phrase:

(64) a. Nǎ-yì-chǎng wǎnhuì, shì Mǎlì de biǎoyǎn, dàjiā juéde
 which-one-CL party be Mary DE performance everyone think
 zuì jīngcǎi ?
 most wonderful (wh-AT > focus)
 (Lit.) 'Which party (is the one that) it was the performance of Mary (during the party) that everyone thought wonderful?'

b. * Shì Mǎlì de biǎoyǎn, nǎ-yì-chǎng wǎnhuì, dàjiā juéde
 be Mary DE performance which-one-CL party everyone think
 zuì jīngcǎi ?
 most wonderful (*focus > wh-AT)

c. Zuótiān de wǎnhuì, shì shéi de biǎoyǎn, dàjiā juéde
 yesterday DE party be who DE performance everyone think
 zuì jīngcǎi ?
 most wonderful (AT > wh-focus)
 (Lit.) 'As for the party last night, whose performance was it that everyone thought wonderful?'

d. * Shì shéi de biǎoyǎn, zuótiān de wǎnhuì, dàjiā juéde
 be who DE performance yesterday DE party everyone think
 zuì jīngcǎi ?
 most wonderful (*wh-focus > AT)

Results: i) Topic and Focus target different syntactic projections and that *wh*-topicalization and *wh*-focus construction are two independent structures.

ii) A *wh*-topic occupies a syntactically higher position than a *wh*-focus. A base-generated *wh*-topic targets the highest Aboutness Topic position, while an extracted *wh*-topic targets lower topic positions (HT, LDT).

6. Conclusion

i) An ex-situ *wh*-phrase can be either in the TopP position or in the FocusP position.

ii) A complex *wh*-phrase that applies to a restrictive nominal set qualifies as topic. A *wh*-topic can either be derived by movement or be base-generated. The former obeys the locality constraints in episodic eventuality contexts.

iii) An ex-situ *wh*-element marked obligatorily by the copular *shi* 'be' is treated as focus. An ex-situ *wh*-focus appears generally in non-episodic eventuality contexts. An ex-situ *wh*-focus can be derived by movement or be base-generated.

iv) The four types of *wh*-ex-situ behave differently both in syntax and in semantics; therefore, they cannot be treated uniformly as a single.

v) The base-generated *wh*-topic is situated in the higher topic position, i.e. gapless topic or Aboutness Topic; the extracted *wh*-topic is situated in the lower topic position, i.e. Hanging Topic or Left Dislocated Topic.

vi) All of the four types of *wh*-ex-situ must not violate any semantic/logical constraint on interrogatives.

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