Encoding QUD congruence in Mandarin Chinese

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Today

I investigate the semantics of *shì* 是 in its **focus marker use** (Teng, 1978; Huang, 1982a,b; Shi, 1994; Cheng, 2008; Paul and Whitman, 2008; Li, 2008; Xu, 2010; Hole, 2011, a.o.).

(1) **Can cooccur with narrow focus in declaratives:**

\[(Shì) [māo]_F tōu-le yú.\]

\[SHI \quad cat \quad steal-PRF \quad fish\]

\(\approx\) ‘The CAT stole the fish.’

Described as “emphasis” or “cleft” or “contrastive focus”...

(2) **Also appears in questions:**

\[(Shì) shéi tōu-le yú (ne)?\]

\[SHI \quad who \quad steal-PRF \quad fish \quad NE\]

\(\approx\) ‘Who stole the fish?’
• *Shì* marks a clause as **congruent to an accepted Question Under Discussion (QUD)**, without a stronger true answer.
  • This is (essentially) the semantics of English *it*-clefts in Velleman, Beaver, Destruel, Bumford, Onea, and Coppock (2012).

• **Constituent questions with *shì*** seem to have a **stronger existence requirement**, explained by congruence with an accepted QUD.

• **QUD congruence is evaluated at the clause edge**, not at *shì*.
  • This explains various restrictions on the distribution of *shì*, in contrast to ‘only.’
What this talk is not about

・Shì has two other uses which will not be discussed here.

1. The copula shì, although I return to this connection at the end;
2. The shì...de construction; see Paul and Whitman (2008); Cheng (2008); Li (2008) for comparisons of shì...de and the “bare shì” that I describe.
§1  Shì in declaratives
§2  Proposal
§3  Shì in questions
§4  The syntax of shì and QUD congruence
§5  Conclusion
Shì in declaratives

Shì always cooccurs with narrow focus on a constituent in its scope:

yesterday evening SHI Zhang San come-PRF
literally ‘shi [Zhang San]F came last night.’

The shì focus construction has often been described as a “cleft” and translated into English it-clefts since at least Huang (1982a, ch. 4).
The addition of *shì* introduces *exhaustivity*: the proposition in its scope is the only true proposition among its focus alternatives. This effect appears similar to that of ‘only.’

(4) **Both ‘only’ zhǐ(yǒu) and shì express exhaustivity:**

   yesterday evening only Zhang San come-PRF
   ‘Only [Zhang San]F came last night.’
   \[\sim\] No one else came last night.

   yesterday evening SHI Zhang San come-PRF
   literally ‘Shì [Zhang San]F came last night.’
   \[\sim\] No one else came last night.
Shì introduces exhaustivity

Exhaustivity can be tested by setting up contradictions (Szabolcsi, 1981):

(5) **A test for exhaustivity:**

a. ✓ Zhāng Sān lái-le, Lǐ Sì (yě) lái-le.
   Zhang San come-PRF, Li Si also come-PRF
   ‘Zhang San came, and Li Si (also) came.’

   only ZS come-PRF, also only LS also come-PRF
   # ‘Only [Zhang San]F came and (also) only [Li Si]F (also) came.’

   SHI Zhang San come-PRF, also SHI Li Si also come-PRF
A difference between clefts and ‘only’

Shì and zhǐ ‘only’ both express exhaustivity. How do they differ?

Note that the behavior of English *it*-clefts and ‘only’ differ, as made clear under negation:

(6) Cleft vs ‘only’ under negation (Büring and Križ, 2013):
   a. ✓ She invited Fred, but she didn’t invite only Fred.
   b. # She invited Fred, but it wasn’t Fred she invited.

The exhaustivity inference of *only* is negated in (6a), whereas the prejacent is negated in the cleft (6b) (see a.o. Halvorsen, 1978; Horn, 1981; Büring and Križ, 2013).
Negating shì vs zhǐ ‘only’:

   ZS invite LS come, but ZS \text{NEG} only invite LS come
   ‘ZS invited LS to come, but he didn’t invite only [LS]F.’

b. # ZS yāo LS lái, 但 (ZS) bù shì yāo [LS]F (lái).
   ZS invite LS come, but ZS \text{NEG} shì invite LS come
   ‘ZS invited LS to come, but it’s not [LS]F that he invited.’

\(\text{shì}(p)\) asserts the prejacent \(p\), unlike \text{ONLY}(p) which presupposes it.

That zhǐ ‘only’ has the semantics of English \textit{only} (as in Horn, 1969) has been shown by Tsai (2004). Here I will use \textit{it}-cleft translations for shì.
More on the contribution of *shì*

If the focus is in an embedded clause, *shì* can be in the higher or lower clause:

(8) **Higher and lower *shì*:**

Zhāng Sān (*shì*) shuō [Lǐ Sì (*shì*) dú-le [liǎng]F běn shū].

Zhang San *SHI* say Li Si *SHI* read-[PRF] two *CL* books

≈ ‘Zhang San (*SHI*) says that Li Si (*SHI*) read [two]F books.’
Evidence for QUD sensitivity

The placement of *shì* in different clauses is sensitive to the Question Under Discussion (QUD; Roberts, 1996/2012):

(9) **Embedded clause congruent to QUD:**

Q: (Shàng ge xuéqī,) Lǐ Sì dú-le jǐ běn shū?
   last term, Li Si read-PRF how.many CL books
   ‘How many books did Li Si read (last term)?’

A: I don’t know, but...

Zhāng Sān (#shì) shuō [LS (✓ shì) dú-le [liǎng]F běn shū].
Zhang San shì say LS shì read-PRF two CL books
Lower *shì* translation: ‘ZS says that it’s [two]F books that LS read.’
Evidence for QUD sensitivity

The availability of *shì* in different positions is sensitive to the Question Under Discussion (QUD; Roberts, 1996/2012):

(10) **Matrix clause congruent to QUD:**

<table>
<thead>
<tr>
<th>Q</th>
<th>Zhāng Sān shuō [Lǐ Sì dú-le jǐ běn shū]?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Zhang San says Li Si read-PRF how many CL books</td>
</tr>
<tr>
<td></td>
<td>‘How many books does Zhang San say Li Si read?’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>...</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Zhāng Sān (<em>shì</em>) shuō [Lǐ #shī dú-le [liǎng]F běn shū].</td>
</tr>
<tr>
<td></td>
<td>Zhang San <em>SHI</em> say LS <em>SHI</em> read-PRF two CL books</td>
</tr>
<tr>
<td></td>
<td>Higher <em>shì</em> translation: ‘It’s [two]F books that ZS says that LS read.’</td>
</tr>
</tbody>
</table>

*shī*(ρ) requires ρ to be congruent to the QUD.
Roadmap

§1  *Shì* in declaratives
§2  Proposal
§3  *Shì* in questions
§4  The syntax of *shì* and QUD congruence
§5  Conclusion
(11) **Proposed semantics for shì:**

\( \text{shì}(p) \) asserts the *prejacent* \( p \) and presupposes that:

a. \( p \) is congruent to an accepted Question Under Discussion;

b. there is no stronger true answer.

(12) \( \llbracket \text{shì} \rrbracket = \lambda p_{\langle s,t \rangle}. \lambda w : \exists Q \in \text{QU} \cap \text{Acc} \)

\[ \forall p' \in Q[(p' \Rightarrow p) \rightarrow \neg p'(w)] \cdot p(w) \]

QUD is the current QUD stack and Acc are accepted moves (Roberts, 1996/2012)

This is essentially the semantics associated with English *it*-clefts, according to Velleman et al. (2012). It goes beyond the semantics of narrow focus alone, which may mark congruence with a (proposed or accepted) QUD.
I generally follow the Roberts (1996/2012) framework for information structure here, but clarify one detail: proposal of a question does not impose its acceptance.

(13) A: Who came last night? ← accepted QUD
B: I’m not sure but... ← (implicit) acceptance of QUD

(14) A: Who came last night? ← rejected QUD
B: Nobody. ← refusal of proposed QUD

In particular, presuppositions of questions (e.g. the existence of an answer) are not reflected in the Common Ground until the question is accepted.
Proposed vs accepted QUDs

Shì makes reference to accepted QUDs.

This reflects the fact that shì is somewhat degraded in immediate, direct answers to (shì-less) questions. The answer move simultaneously accepts and resolves the QUD, but the QUD is not pre-accepted.

The same has been observed for English *it*-clefts (exx based on Velleman et al., 2012, 449):

(15) A: What did Mary eat?
    B: {✓ Mary ate PIZZA., ✓ It was a PIZZA that Mary ate.}

(16) A: What did Mary eat?
    C: I thought she said she was gonna get a pizza, but I might be wrong.
    D: And did she also order a salad?
    B: Guys, I was there. And C’s right;
        {✓ Mary ate PIZZA., ✓ it was a PIZZA that Mary ate.}
Explaining exhaustivity

The exhaustivity of \textit{shì} observed above is modeled as a requirement for a \textit{maximal} true answer to the QUD.

(17) **Context:** Zhang San and Li Si came last night.

Q: Zuótiān wǎnshàng, shéi lái-le?
   yesterday evening, who come-\textsc{prf}
   ‘Who came last night?’

A1: ✓ [Zhāng Sān]_F (lái-le).
   Zhang San come-\textsc{prf}
   ‘Zhang San came.’ \textit{partial answer but acceptable reply}

A2: ✓ [Zhāng Sān hé Lǐ Sì]_F (lái-le).
   Zhang San and Li Si come-\textsc{prf}
   ‘Zhang San and Li Si came.’ \textit{maximal true answer}
The exhaustivity of \textit{shì} observed above is modeled as a requirement for a \textit{maximal} true answer to the QUD.

(18) \textbf{Context:} Zhang San and Li Si came last night.

\begin{itemize}
  \item Q: Zuótiān wǎnshàng, shéi lái-le?
    \begin{itemize}
      \item yesterday evening,
      \item who come-\textsc{prf}
    \end{itemize}
    \begin{itemize}
      \item ‘Who came last night?’
    \end{itemize}
  \item A1: \# \textbf{Shì} [Zhāng Sān]\textsc{f} (lái-le).
    \begin{itemize}
      \item SHI Zhang San come-\textsc{prf}
    \end{itemize}
    \begin{itemize}
      \item ‘It’s Zhang San that came.’ \textit{partial answer}
    \end{itemize}
  \item A2: ✓ \textbf{Shì} [Zhāng Sān hé Lǐ Sì]\textsc{f} (lái-le).
    \begin{itemize}
      \item SHI Zhang San and Li Si come-\textsc{prf}
    \end{itemize}
    \begin{itemize}
      \item ‘It’s Zhang San and Li Si that came.’ \textit{maximal true answer}
    \end{itemize}
\end{itemize}
Clefts are also commonly described as having an existential presupposition, detectable under negation (Dryer, 1996; Rooth, 1999, a.o.):

(19) **It’s not** [John]$_F$ that came.  
    $\leadsto$ Someone came.  

(20) **Bú shì** [Zhāng Sān]$_F$ lái-le.  
    $\text{NEG SHI}$ Zhang San come-PRF  
    ‘It’s not Zhang San that came.’  
    $\leadsto$ Someone came.

The existential inference simply reflects the presuppositions of the congruent, accepted QUD, which requires the existence of a true answer.
Shì can also be licensed in discourses without an explicit preceding QUD:

(21) **Example from Lü (1980, p. 374):**

Zhè yǎnjīng yǐjīng huà-le liǎng huí,
these eyes already draw-PRF two times,

tóu-yī huí shì tài xiǎo, dì-èr huí shì tài dà.
first time SHì too small, second time SHì too big.

‘These eyes have already been drawn twice. The first time they were too small, and the second time they were too big.’
The mention of the eyes being drawn twice before raises the following family of implicit questions (Roberts, 1996/2012, a.o.):

- How were the eyes each time?

  How were the eyes the first time?  How were the eyes the second time?

  \[ \cong \]

  - Tóu-yī huí (yǎnjīng) shì [tài xiǎo]_F.  
    first time eyes SHI too small

  - Dì-èr huí (yǎnjīng) shì [tài dà]_F.  
    second time eyes SHI too big
An alternative hypothesis is that *shì* in (21) above is licensed simply due to contrastive focus, not QUD congruence. Focus can be licensed simply by contrastive phrases:

(22) **Contrasting DPs in Rooth (1992):**

\[\text{[DP An [American]}_F\text{ farmer] was talking to [DP a [Canadian]}_F\text{ farmer]}\ldots\]
Shì is not licensed by contrastive focus

(23) **Narrow focus on contrasting constituents:**

(Yǒu) \[DP yī-ge \ [měiguó]_F nónɡfū] shuō  
EXIST one-CL American farmer say

\[CP (yǒu) \[DP yī-ge \ [jiānádà]_F nónɡfū] lái-le]\...
EXIST one-CL Canadian farmer come-PRF

‘An [American]_F farmer said a [Canadian]_F farmer came...’

F-marking on the contrasting ‘American’ and ‘Canadian’ here is licensed, just as Rooth’s (1992) system predicts, based on English.
(24) **However, shì is not licensed here:**

* Shì (yǒu) [DP yī-ge [měiguó]F nóngfū] shuō
  shì EXIST one-CL American farmer say

  [CP shì (yǒu) [DP yī-ge [jiānádà]F nóngfū] lái-le]
  shì EXIST one-CL Canadian farmer come-PREF

*Shì is not a simple marker of narrow/contrastive focus; it is not an overt version of Rooth’s (1992) ~ operator.*
Roadmap

§1  Shì in declaratives
§2  Proposal
§3  Shì in questions
§4  The syntax of shì and QUD congruence
§5  Conclusion
Shì also can appear in constituent questions in a position to associate with the *wh*-word or alternative disjunction:

(25) (Shì) *shéi* tōu-le yú (ne)?
    Shì who steal-PRF fish NE
    ‘Who stole the fish?’ (=2)

(26) (Shì) māo háishì gǒu tōu-le yú (ne)?
    Shì cat or dog steal-PRF fish NE
    Alternative question: ‘Did the cat or the dog steal the fish?’
    (Erlewine, 2014)
Questions presuppose the existence of a maximal true answer.

Intuitively, *shì* seems to make this requirement stronger.

> Wǒ bu zhīdào [zuótiān wǎnshàng (#shì) shéi lái-guò wǒ jiā],
> I NEG know yesterday evening shì who come-EXP my house
>
> shíjìshàng wǒ rènwéi [méi-yǒu rén lái].
> actually I think NEG-EXIST person come
>
> ‘I don’t know who came to my house last night; in fact, I think no one came.’

Adding *shì* presupposes that someone did come, in a way that is harder to cancel.
This is explained by *shì*’s semantics which requires **congruence to an accepted QUD**.

- In (27) without *shì*, the embedding raises the question ‘who came to my house last night’ and the continuation immediately rejects it.
- In (27) with *shì*, *shì* marks **congruence to a pre-existing and accepted QUD**, which in turn reflects prior acceptance of the existence of an answer.
Mention-some questions are naturally answered with a partial answer, and in fact unnatural as requests for complete answers:

(28) A mention-some question (Groenendijk and Stokhof, 1984): *Where* do they sell Italian newspapers?

(29) *Shì* blocks mention-some reading of questions:

(Wǒ) (#shì) (zài) nǎlǐ kěyǐ mǎi bàozhǐ?
I shì at where can buy newspaper

‘Where can I buy a newspaper?’

(Shì ok if interpreted as a request for a complete answer.)

This is explained by the lack of a (relevant) maximal true answer for mention-some questions.
Yimei Xiang (p.c.) notes that *shi* is similarly incompatible with questions that explicitly encode an expectation for a partial answer.

(30) *Shì incompatible with a ‘for example’ question:*

Zuótiān wǎnshàng (*#shì*) shéi lái-le, bǐrúshuō?
yesterday evening *shì* who come-PRF for example

‘Who came last night, for example?’
Expression frustration with *shì* questions

The previous example (29) improves in the following context:

(31) **A frustrating exchange:**

A: Can I buy a newspaper at the bookstore?
B: No.
A: Can I buy a newspaper at the convenience store?
B: No.
A: ✓ Nà, wǒ *shì* (zài) *nǎlǐ* kěyǐ mǎi bàozhǐ!? then I *shì* at where can buy newspaper
   ‘Well then, where [the hell] can I buy a newspaper!?’
More generally, *shì* can be used in other contexts where it may seem to the speaker that there is no answer and the speaker is frustrated with this:

(32) *Shì* in frustrated rhetorical question:

\[
\text{Wǒ } \text{shì } \text{néng } \text{zuò } \text{shénme}!? \\
\text{I } \text{SHI } \text{can } \text{do } \text{what}
\]

\[\approx \text{‘What [the hell] can I do?’}\]

In such contexts, the question itself is an existing (implicit) QUD. Repeating it emphasizes that an adequate answer has not been obtained.
Roadmap

§1  Shì in declaratives
§2  Proposal
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The distribution of *shì*

(33) Distribution from Huang (1982a, p. 290; 1982b, p. 372):

\[
\begin{align*}
Wǒ & \quad \text{míngtiān} & \quad yào & \quad \text{mǎi nèi-běn shū}. & \quad \text{buy that-CL book} \\
& \quad \text{I} & \quad \text{tomorrow} & \quad \text{want} & \quad \text{that book}
n\end{align*}
\]

\[
\begin{align*}
(Shì) & \quad [\text{tomorrow}]_F & \quad \iff & \quad \text{[buy that book]}_F \quad or \\
& \quad \text{[that book]}_F & \quad \iff & \quad \text{[buy]}_F \quad or \\
& \quad \text{[l]}_F & \quad \iff & \quad \text{entire proposition focus}
\end{align*}
\]

Huang (1982a,b) claims that *shì* “immediately precedes” its focus, but this characterization cannot be right when the focus is postverbal.
Shì is a focus-sensitive adverb

(34) Two types of focus particles in English:
   a. David only drinks [red wine]_F.  
   b. David drinks only [red wine]_F.

Shì patterns with the adverb type, always on the clausal spine, not adjoined directly to focused constituents:

(35) Shì cannot be inside PPs:

Zhang San  SHI to *SHI Lisi  throw-PRF ball

‘Zhang San threw a ball at [Lisi]_F.’
**Shì is a focus-sensitive adverb**

English adverb *only* can associate with multiple foci, but not constituent-marking *only*:

(36)  

a. ✓ I *only* saw [the children]ₕ ask [the adults]ₕ to be quiet.  
b. * I saw *only* [the children]ₕ ask [the adults]ₕ to be quiet.  
c. * Only [the children]ₕ asked [the adults]ₕ to be quiet.

Mandarin *shì* can associate with multiple foci:

(37) **Multiple focus with *shì* (Cheng, 2008):**


‘The son asked the adult not to make noise, not the other way around.’

*Shì* patterns with adverb *only*, not with constituent-marking *only*. 
Shì is a focus-sensitive adverb that must be as close as possible to its focus (given a particular syntactic domain; see Erlewine 2015a).

The exact same Closeness effect governs the distribution of ‘only’ zhǐ/zhǐyǒu in Mandarin (Erlewine, 2015a).

This type of Closeness condition on the position of focus-sensitive adverbs have been independently proposed for German (Büring and Hartmann, 2001) and Vietnamese (Erlewine, 2015b).
The proposal above fails to account for a range of environments where ˇshi is not allowed, although ‘only’ is.

(38) **Generalization:**
Clauses where ˇshi is completely disallowed are *reduced clauses*, not full CPs. E.g. relative clauses, small clause complements, restructuring/control complements, etc.

(39) **Claim:**
That’s because the (high) clause edge is required for evaluating QUD congruence.
No *shì* in relative clauses

It’s been noted that *shì* is unavailable in relative clauses (Teng, 1979, a.o.):

      I like [SHI/✓ only Zhang San read-EXP DE that-CL book
* ‘I like the book that it’s ZS that bought.’
✓ ‘I like the book that only Zhang San bought.’

(based on Huang, 1982b, p. 374)

But Shi (1994) shows that *shì* is allowed in embedded clauses inside relative clauses:

      I know [that-CL assert [SHI I NEG good DE person
   ‘I know the person who insists [it is me that is not good].’ (Shi, 1994, p. 93)

Captured by the generalization, assuming relative clauses are reduced, but the embeddings are full CPs.
No shì in small clause complements

(42) Q: Who stole the motorcycle?
A1: Full CP embedding:
Wǒ rènwéi [CP √shì/√zhǐyǒu [ZS]F tōu-le nèi-tái mótuōchē].
‘I think [that {it’s ZS/only ZS} stole the motorcycle].’

A2: Small clause complement:
Wǒ kàn-dào [SC *shì/√zhǐyǒu [ZS]F tōu nèi-tái mótuōchē].
‘I saw [it’s Zhang San that stole that motorcycle].’
√ ‘I saw [only Zhang San steal that motorcycle].’
Q: What do/will you drink?

    I want PRO shì/ only drink coffee.

* ≈ ‘I want that it’s coffee that I drink.’
✓ ‘I want to only drink [coffee]F.’

    My doctor make me shì/ only drink boiled-water.

* ≈ ‘My doctor makes it so that it’s boiled water that I drink.’
✓ ‘My doctor makes me drink only [boiled water]F.’
A slight modification to the proposal so far:

QUD congruence is evaluated in a specific position high in CP; assume it’s a CONG feature on declarative and interrogative C.

\[(44) \quad [_{CP} \ C^{[CONG:+]} \ \ldots \ [_{TP} \ \ldots \ shi \ \ldots \ c_F \ \ldots \ ] \ ]\]

\([CONG:+]\) has the semantics of shi described above, and licenses the pronunciation of “shi” in the local clause, in the lowest position possible while taking all foci in its scope (Closeness).

Reduced clauses (small clauses, relative clauses, etc.) lack C with \([CONG]\).
However

This is not pretty. This modification seems motivated, but I find it inelegant and upsetting. Suggestions welcome.
This explains the “one shì per clause” generalization:

(45) **One shì per clause:**

* Shì [Zhāng Sān]_F shì dú-le [zhè-běn shū]_F.
  SHI Zhang San SHI read-PRF this-CL book

(46) **No such restriction on ‘only’:**

✓ Zhǐyǒu [Zhāng Sān]_F zhǐ dú-le [zhè-běn shū]_F.
  ONLY Zhang San ONLY read-PRF this-CL book

‘Only [Zhang San]_F read only [this book]_F.’
§1  Shì in declaratives
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The Mandarin focus particle *shì* marks a clause as congruent to an accepted Question Under Discussion, with no stronger true answers.

- This derives the exhaustivity inference. Dependence on an accepted QUD explains the existence inference.
- This account explains (apparently strengthened) existence inference of *shì*-marked constituent questions.
- This is cleft semantics, à la Velleman et al. (2012).

The semantics of *shì* actually operates at the clause edge.

This accounts for a wide range of data on the semantic contribution and distribution of *shì*, and differences between *shì* and ‘only.’
A further question: What is the relation between focus *shì* and the copula?

- In this proposal, there need not be any connection between these items in the synchronic grammar of Mandarin.
- Implication: Cleft semantics need not be based on the semantics of relativization, definite descriptions, or copular sentences, as previously proposed primarily based on English (see e.g. Percus, 1997; Büring and Križ, 2013).
Thank you! Questions?

For discussion and judgments, I thank Ting-Chun Chen, Chris Davis, Kai von Fintel, Aron Hirsch, Hadas Kotek, Pamela Pan, Tianxiao Wang, Yimei Xiang, the audience at the 9th meeting of the European Association of Chinese Linguistics, and especially Ning Tang. All errors are mine.


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