

Exhaustivity in Mandarin *shi* ... (*de*) clefts: Experimental evidence

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Exhaustivity in Clefts:

- (1) Shi [Xiaogao he Xiaopang]_F chidao le.
SHI Xiaogao and Xiaopang late ASP
'It is Xiaogao and Xiaopang who were late.'

Exhaustivity: Besides Xiaogao and Xiaopang, no one else was late.

Questions:

1. What is the status of exhaustivity in Mandarin *shi ... (de)* clefts?

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2. Is exhaustivity encoded in presupposition, assertion, or implicature?

How are we going to address Question 1:

- ▶ SD clefts vs. Sentences without any focus marking:

(2) Shi [Xiaogao]_F chidao le.

SHI Xiaogao late ASP

“It is Xiaogao who was late.”

(3) Xiaogao chidao le.

Xiaogao late ASP

“Xiaogao was late.”

- ▶ If SD clefts carry exhaustivity,

Clefts > acceptability to exhaustive inference Sentences
without focus marking

- ▶ →Experiment 1

How are we going to address Question 2:

Three proposals in general:

- ▶ **Assertion proposal** (e.g. É Kiss 1998)
- ▶ **Conversational Implicature Proposal** (e.g. Horn 1981, DeVeugh-Geiss et al. 2015)
- ▶ **Presupposition Proposal** (e.g. Halvorsen 1978, Percus 1997, Büring and Križ 2013)

Assertion Proposal

Clefts = “Only” (É Kiss 1998 among many others):

(4) “Only”:

Only Zhangsan met Lisi.

Presupposition: Zhangsan met Lisi.

Assertion: No other people met Lisi.

(5) Clefts:

Shi [Zhangsan]_F jiandao Lisi de.

SHI Zhangsan meet Lisi DE

Presupposition: Someone met Lisi.

Assertion: The ‘someone’ equals Zhangsan; Except Zhangsan, there are no other people who met Lisi.’

(Lee 2005: 95)

If yes to Assertion Proposal:

Clefts = strength of exhaustivity “Only” (→ Experiment 1)

Conversational Implicature Proposal

Clefts = Plain Focus Sentences

(6) Plain Focus Sentence:

A: (Among Mary, Peter, and Susan,) who was late?

B: [Mary]_F was late.

B implies that no other people was late.

(7) Clefts:

Shi [Zhangsan]_F chidao le.

SHI Zhangsan late ASP

“It was Zhangsan who was late.”

Presupposition: Someone was late.

Assertion: Zhangsan was late.

Implicature: No other people was late.

(Horn 1981, Onea and Beaver 2009; see also Byram-Washburn et al. 2013, Destruel et al. 2015, DeVeugh-Geiss et al. 2015 on experimental evidence)

How are we going to test Conversational Implicature Proposal:

- ▶ Cancellation of Conversational Implicatures (Grice 1989; see Mayol and Castroviejo 2013 for a recent discussion):
 - (8) Some students were late.
↪ Not all of them were late.
 - (9) Some students were late. In fact, all of them were late. → Not all of them were late.
- ▶ If yes to Conversational Implicature Proposal:
Clefts = cancelability of exhaustivity Plain Focus Sentence
(→ Experiment 2)

Experiment 1

Inference judgment task:

- ▶ First introduced to a fictional character David
- ▶ Read a short lead-in
- ▶ Listened to a pre-recorded eliciting sentence
- ▶ Rate David's inference from 1 to 5 (1 = completely unacceptable)

Example

Wang Ming went to buy some drinks for his friends. After he came back, he told David:

(10) Wang Ming:

Bianlidian li, shi hongcha maiwan le.
Convenient store LOC SHI black tea sold out ASP

“In the store, it was the black tea that was sold out.”

□

(11) David thought:

Zheme shuo, biede yinliao meiyou maiwan.
So speak other drink not sold out.

“So, other drinks were not sold not. ”

Is David's inference acceptable?

- ▶ 1 (completely unacceptable) ~ 5 (completely acceptable)

Design

Three types of sentences as elicitation:

- ▶ *Shi* . . . (*de*) clefts (SD)
- ▶ *Zhiyou* “only” (ZY) sentences
- ▶ Simple sentences without any focus

Predictions:

- ▶ If Yes to exhaustivity in clefts:
Clefts > acceptability to exhaustive inference Simple Sentences
- ▶ If Yes to Assertion Proposal:
Clefts = strength of exhaustivity “Only”

Method

The three types of sentences were tested on 12 scenarios:

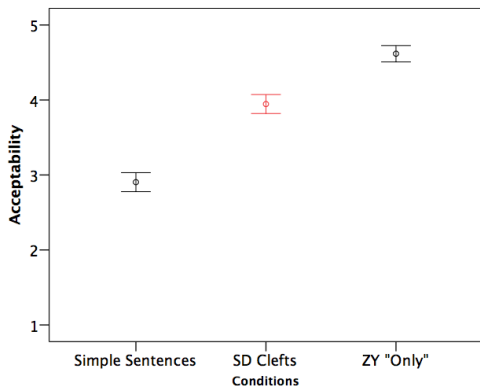
- ▶ Six lists
- ▶ Pseudo-randomized with three types of filler items
- ▶ All verified as grammatical by two native Mandarin speakers

Participants

- ▶ Sixty-one participants from Beijing
- ▶ (age: 23 to 58, mean 31)
- ▶ Sixty completed the task

Results

Figure: Acceptance to exhaustive inference (means with confidence intervals 95%)



Simple sentence < *** SD Clefts < *** ZY "only" sentence
(<: acceptability to an exhaustive inference, Linear Mixed Model; *** stands for statistical significant differences)

Discussion

- ▶ Question 1: Yes to exhaustivity in SD clefts:
Clefts $>$ strength of exhaustivity Simple Sentences
- ▶ Question 2: No to Assertion Proposal:
Clefts \neq strength of exhaustivity "Only"

Experiment 2

Felicity judgment task:

- ▶ Read a short background
- ▶ Read a question posed by David's friend
- ▶ Listen to David's response in the scenario
- ▶ Judge whether David's response was acceptable on a scale from 1-5 (same as Experiment 1)

Example

Wang Ming asked David: Do you know, between Mo Yan and Yu Hua, who has won the prize?

▶ David answered:

(12) Shi MoYan na guo wenxuejiang;
SHI MoYan win ASP Literary Contest;
shishishang, YuHua ye na guo wenxuejiang.
In fact, YuHua also win ASP Literary Contest
“It is MoYan who has won the Literary Contest; in
fact, YuHua has also won the context.”

□

Is what David said acceptable?

▶ 1 (completely unacceptable) ~ 5 (completely acceptable)

Design

Constructions:

- ▶ *Shi ... (de)* Clefts
- ▶ Plain Focus Sentences

Predictions:

- ▶ If yes to Conversational Implicature Proposal:
Shi ... (de) Clefts <cancelability of exhaustivity> Plain Focus Sentences

Constructing Testing Sentences:

Conjunct I

Plain Focus

[Mo Yan]_F na guo jiang;
“[Mo Yan]_F has won the prize;”

Conjunct II

SD Cleft

Shi [Mo Yan]_F na guo jiang;
“It is [Mo Yan]_F who has won the prize;”

shishishang, Yu Hua **ye** na guo jiang;
“**in fact**, Yu Hua **also** has won the prize.”

ZY “Only”

Zhiyou [Mo Yan]_F na guo jiang;
“Only [Mo Yan]_F has won the prize;”

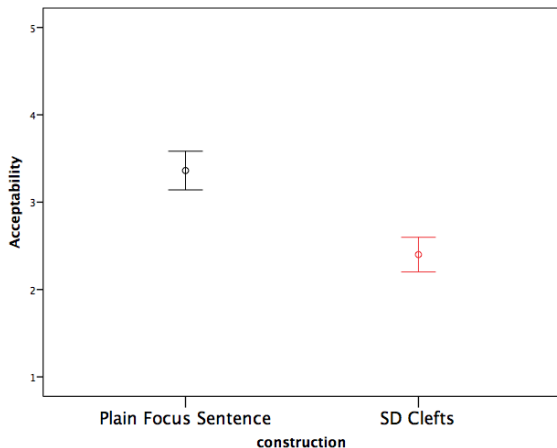
- ▶ All items were verified as grammatical by two native speakers
- ▶ The testing and filler scenarios were assigned to 3 lists in a Latin square fashion

Participants

- ▶ Thirty-seven participants from Beijing
- ▶ (age: 21-36, mean: 25.7)
- ▶ Thirty-five complete questionnaires were included in the analysis.

Results

Figure: Cancelling exhaustivity (means with confidence intervals 95%)



SD Clefts < *** Plain Focus Sentences

(<: acceptability to the cancelation of exhaustivity; Linear Mixed Model, *** stands for statistically significant difference)

Conclusion

- ▶ No to Conversational Implicature Proposal:
SD Clefts <cancelability of exhaustivity Plain Focus Sentences

Other factors?

What if exhaustivity is a conversational implicature, but different from Plain Focus Sentence because:

- ▶ **Existential presupposition** (Horn to appear, Zimmermann and Onea 2011):
 - ▶ Clefts yes
 - ▶ *In situ* prosodic Plain Focus Sentences no
 - ▶ So the former has a stronger exhaustivity.
- ▶ **Focus projection** (DeVeugh-Geiss et al. 2015):
 - ▶ The domain of alternatives of *in situ* prosodic focus is ambiguous
 - ▶ Less optimal for pragmatic enrichment
 - ▶ Weaker exhaustivity.

Can they save the Conversational Implicature Proposal?

No: In the experiment, we used Plain Focus Sentences elicited by an overt question (\neq *in situ* prosodic Plain Focus Sentence):

- ▶ For Horn (to appear), Zimmermann and Onea (2011), our Plain Focus Sentence encodes existential presupposition;
- ▶ For DeVeugh-Geiss et al. (2015), our Plain Focus Sentence have a clearly designated QUD and a clearly designated alternatives.

→ Both cannot explain the difference observed.

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 - ▶ Experiment 1 shows that clefts in Mandarin encode exhaustivity;
- ▶ If clefts indeed encode exhaustivity, it encoded in presupposition, assertion, or implicature?
 - ▶ The Assertion Proposal cannot explain results of Experiment 1;
 - ▶ The Conversational Implicature Proposal cannot explain results of Experiment 2.

Other possibilities?

Presuppositional Proposal? Other proposals? Velleman et al. (2012):

- ▶ Both clefts and *only* are inquiry terminating constructions
- ▶ two focus sensitive operators MAX (“no true answer is strictly stronger than p”) and MIN (“There is a true answer at least as strong as p.”)
- ▶ While *only* presupposes MIN and asserts MAX, clefts assert MIN and presuppose MAX.

Thank you!

References I

- Büring, Daniel, and Manuel Križ. 2013. Exhaustivity and homogeneity presupposition in clefts (and definites). *Semantics and Pragmatics* 6(6):1–29.
- Byram-Washburn, Mary, Elsie Kaiser, and Maria Luisa Zubizarreta. 2013. The english it-cleft: No need to get exhausted. University of Southern California.
- Destruel, Emilie, Daniel Velleman, Edgar Onea, Dylan Bumford, Jingyang Xue, and David Beaver. 2015. A cross-linguistic study of the non-at-issueness of exhaustive inferences. In *Experimental perspectives on presuppositions experimental perspectives on presuppositions*, ed. Florian Schwarz, 135–156. Springer.

References II

- DeVeugh-Geiss, J. P., M. Zimmermann, E. Onea, and A. Boell. 2015. Contradicting (not-)at-issueness in exclusives and clefts: An empirical study. In *The 25th Semantics and Linguistic Theory Conference (25)*, ed. Sarah D'Antonio, Mary Moroney, and Carol Rose Little.
- É Kiss, K. 1998. Identificational focus vs. information focus. *Language* 74(2):245–273.
- Grice, Paul. 1989. *Studies in the way of words*. Cambridge, CA: Harvard University Press.
- Halvorsen, Per-Kristian. 1978. The syntax and semantics of cleft constructions. Doctoral Dissertation, University of Texas, Austin.
- Horn, Larry. to appear. Information structure and the landscape of (non-)atissue meaning. In *The oxford handbook of information structure*, ed. Caroline Féry and Shinichiro Ishihara. Oxford University Press.

References III

- Horn, Laurence.R. 1981. Exhaustiveness and the semantics of clefts. In *Proceedings of the Eleventh Annual Meeting of the North Eastern Linguistics Society (NELS)*, ed. V. Burke and J. Pustejovsky.
- Lee, Hui-chi. 2005. On chinese focus and cleft constructions. Doctoral Dissertation, National Tsing Hua University, Hsinchu.
- Mayol, Laia, and Elena Castroviejo. 2013. How to cancel an implicature. *Journal of Pragmatics* 50:84–104.
- Onea, Edgar, and David Beaver. 2009. Hungarian focus is not exhausted. In *Proceedings of the 19th Semantics and Linguistic Theory (SALT)*, ed. Ed Cormany, Satoshi Ito, and David Lutz.
- Percus, Orin. 1997. Prying open the cleft. In *the 27th Annual Meeting of the North-East Linguistics Society (NELS)*, ed. Kiyomi Kusumoto, 337–351.

References IV

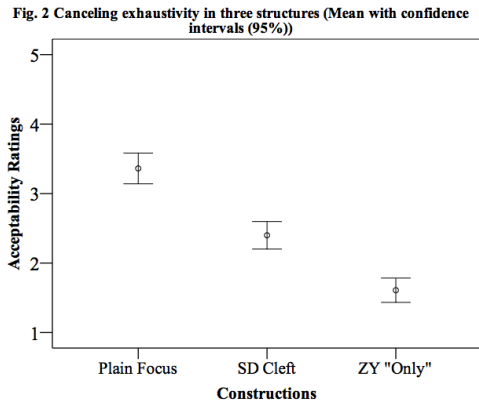
- Velleman, Dan Bridges, David Beaver, Emilie Destruel, Dylan Bumford, Edgar Onea, and Liz Coppock. 2012. It-clefts are it (inquiry terminating) constructions. In *Proceedings of the 22th Semantics and Linguistic Theory (SALT)*, ed. Anca Chereches, 441–420.
- Zimmermann, Malte, and Edgar Onea. 2011. Focus marking and focus interpretation. *Lingua* 121:1651–1670.

Notes I

Figure: Exhaustivity in four types of sentences (means with confidence intervals 95%)

Notes II

Figure: Cancelling exhaustivity in three structures (means with confidence intervals 95%)



Experiment 3

Conjunct 1	Conjunct 2
Women ban li, bu shi [Zhang Ming] _F chidao le. "In our class, it is not Zhang Ming who was late." (SD) $\exists\text{Pres: } \exists x[\text{LATE}(x)]; \text{EI: } \neg\exists y[\text{LATE}(y) \wedge y \neq \text{Zhangming}]$	Meiren chidao le. "Nobody was late." (contradict $\exists\text{Pres}$)
	Li Jun chidao le. "Li Jun was late." (contradict EI)
Women ban li, chidao de (ren) bu shi [Zhang Ming] _F . "In our class, the one who was late is not Zhang Ming." (SS) $\exists\text{Pres: } \exists x[\text{LATE}(x)]; \text{EI: } \neg\exists y[\text{LATE}(y) \wedge y \neq \text{Zhangming}]$	Meiren chidao le. "Nobody was late." (contradict $\exists\text{Pres}$)
	Li Jun chidao le. "Li Jun was late. " (contradict EI)

Table: Example of four permutations of the target sentence in Experiment 3

Experiment 3 results

Figure: Contradicting existential and exhaustivity (means with confidence intervals 95%)

