A Movement Analysis of Right Dislocation:
The Case of Mandarin Chinese

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Right dislocation has been observed across various languages. However, there has not been detailed investigation of this phenomenon in Mandarin Chinese. This study identifies and analyzes the formal syntax of right dislocation in Mandarin Chinese, proposing a remnant movement analysis for the phenomenon in Minimalism. Unlike the previous movement analysis of right dislocation, the present analysis consists of overt topic movement and remnant focalization, capturing the discourse function of right dislocation and specifying the landing site for both right-dislocated phrases and the host clause. The present analysis can also account for the derivation of the other structures with topicalization and with sentence final particles in Mandarin Chinese.

0. Introduction[1]

This study explores the formal syntax of right dislocation (henceforth, RD) in Mandarin Chinese (henceforth, MC). RD has been widely investigated in the Romance languages (Cecchetto 1999, López 2009), Germanic languages (Ott & de Vries 2012, 2014, 2016), Japanese (Tanaka 2001) and Korean (Chung 2009, Lee 2009, Ko 2014). However, there have not been detailed studies on RD in MC under the generative framework, raising relevant questions about its properties and analysis in MC. Before moving to the analysis of RD in MC, I firstly describe the structure of RD. Descriptively RD consists of a host clause and a dislocated phrase, as in (1a). In the examples from Italian and MC, *Gianni* and *Lisi* are the dislocated (RD) phrases. In the host clause, there must be a co-indexed resumptive pronoun (*lo*, *ta*) as in (1b) and (1c). Importantly, MC RD as discussed in this study does not have a distinct pause between the host clause and the dislocated phrase, which is prosodically different from afterthought constructions.[2]

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[2] The difference between afterthought and right dislocation involves at least prosody and syntax (Averintseva-Klisch 2008). The prosodic difference will be addressed in section 1. The syntactic difference between these two constructions is essentially the following. For afterthought, the

(1) a. [[host clause] [dislocated XP]]
   b. Italian (Cecchetto 1999)
    Io *(**lo$_i$**) odio, **Gianni$_i$**.
    I him hate Gianni
    'I hate him, Gianni.'
   c. Mandarin Chinese
    Mali yinggai keneng   xihuan *(**ta$_i$**) ba   **Lisi$_i$**.
    Mary probably maybe   like he SFP   Lisi
    'Mary probably likes **him$_i$**, **Lisi$_i$**.'

There are two goals to the present study. First, it provides further insight onto the nature of the interface between syntax and discourse/information structure, which has not been extensively investigated. Second, analyses have been proposed for RD data in several languages. MC data exhibit some similarities to, but also differences from those data. Therefore, the analysis of the MC data shown in this study helps refine the analysis of this construction from a comparative perspective. In what follows, I firstly describe the relevant properties of RD in MC and then I argue for a two-operation movement analysis of RD in the language, specifying the landing site of the dislocated phrase and the proposed overall structure of RD in MC. This paper is organized as follows. Section 1 presents the RD data under consideration. Section 2 shows my proposal for the analysis of RD in MC. Section 3 discusses some consequences of the present proposal and presents a comparison to previous analyses. Section 4 concludes the paper.

1. Right dislocation in Mandarin Chinese

RD in MC exhibits several characteristics; nevertheless, only the ones that are relevant to this paper are shown in this section. First, the right dislocated NP can originate either from the subject or object position, as in (2). It is seen that both the RD subject, *Mali* (2a), and object, *Lisi* (2b), are in the rightmost position. Interestingly, there is an asymmetry between the resumptive pronoun for dislocated subject and dislocated object. For dislocated subject, the resumptive pronoun can be omitted while for the

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resumptive pronoun does not have to be co-referent with the right-dislocated phrase and island sensitivity does not hold, as shown in (1). Since the distinction between these two would require more extensive discussion, in the present study I focus only on right dislocation.

(1) Afterthought in *wh*-islands
 Zhangsan xiang zhidao shei xihuan ta ba, wo shi shuo, Lisi?
 Zhangsan want know who like he SFP I   SHI say Lisi
 'Zhangsan wants to know who likes him, I mean, Lisi?'

dislocated object, the resumptive pronoun is preferably not omitted.[3] The asymmetry also holds for pure A'-Topic movement cases, as in (3).

(2) a. Right dislocated subject   b. Right dislocated object

    (Ta$_i$) kandao Lisi   le   *(a)   Mali$_i$!   Mali   kandao *(ta$_i$)   le   *(a)   Lisi$_i$.

    She   see   Lisi   Asp   SFP   Mary   Mary   see   he   Asp   SFP   Lisi

    'She$_i$ saw Lisi, Mary$_i$!'   'Mary saw him$_i$, Lisi$_i$.'

(3) a. Topicalized subject   b. Topicalized object

    Mali$_i$ a,   (ta$_i$)   xihuan Lisi   Lisi$_i$ a,   Mali   xihuan*(ta$_i$)

    Mary   TOP   she   like   Lisi   Lisi   TOP   Mary   like   he

    'Mary, she likes Lisi.'   'Lisi, Mary likes him.'

        Second, sentence final particles (SFPs) are obligatory in RD (Cheung 2009). It is also illustrated in (2) that for both dislocated subject and dislocated object, the sentence final particle, *a*, cannot be omitted. Importantly, SFPs in RD always end up in a position preceding the RD phrase, as opposed to appearing in sentence-final position in other clauses (4). The SFP is not allowed after the RD phrase (5), which I will account for in the analysis I develop below, in which the host clause and the RD move to the left periphery separately.

(4)   Mali   bu   xihuan   Lisi   ma?

     Mary   not   like   Lisi   SFP

     'Doesn't Mary like Lisi?'

(5) *Mali   bu   xihuan ta$_i$ *(ma)   Lisi$_i$ (*ma)?

     Mary   not   like   him   SFP   Lisi   SFP

     'Intended: Did Mary not like him, Lisi?'

        Third, RD does not have a distinct pause between the dislocated phrase and the SFPs, unlike afterthoughts. As in the contrast shown in (6), an afterthought construction (6a) can have a distinct pause or a phrase between the right-dislocated phrase and the host clause. In right dislocation (6b) this is not allowed.

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[3] The omission of a resumptive object would cause confusion between a normal sentence and a right-dislocated sentence such as (1). In other words, the interpretation of (2) could be the same as the RD where the meaning of it is *Mary saw Lisi*. It could also be that Mary saw something which was mentioned in the previous context and Lisi is used as a vocative.

(2)   Mali   kandao le   a   Lisi.

     Mary   see   Asp   SFP   Lisi

     'Mary saw Lisi.'

(6)
a. Afterthought
  Mali   bu   xihuan ta   ma?   *wo   shi   shuo,* Lisi.
  Mali   not   like   he   SFP   I   SHI   say   Lisi
  'Doesn't Mary like him, I mean, Lisi?'

b. Right dislocation
  *Mali   bu   xihuan ta   ma   *wo   shi   shuo*   Lisi?
  Mary   not   like   he   SFP   I   SHI   say   Lisi

      Finally and most crucially, RD exhibits island sensitivity. The following islands, Complex NP islands (7), *wh*-islands (8) and Adjunct islands (9) all illustrate the violation in RD in MC. The following examples show that both right-dislocated subjects and objects cannot be moved out of an island. As shown in (7a), when the dislocated subject, *Liuyong*, correfers with the pronoun in the complex NP condition, moving *Liuyong* to the right-dislocated position causes an island violation. The dislocated object, *Lisi*, in (7b) exhibits the same violation. Similarly, when *Lisi* is originally generated in the *wh*-island (8), no matter whether it is generated in a subject position or an object position, *Lisi* cannot be moved to the rightmost position. Lastly, in the adjunct condition (9), *Lisi* cannot undergo a movement to the rightmost position of the sentence.

(7) Complex NP condition
  a. *Lisi zhidao ta_i xie-guo   de   shu   dou   hen   changshiao
     Lisi know   he write-Asp   DE   book   dou   very   best selling
     ma $Liuyong_i$?
     SFP   Liuyong
     'Intended: Does Lisi know that the books that he has written are bestsellers, Liuyong?'

  b. *Ni   kan-guo   xihuan ta_i changge de   ren   ma $Lisi_i$?
     you   see-Asp   like   he   sing   DE   people SFP   Lisi
     'Intended: Have you seen the people who like that he sings(,) Lisi?'

(8) *Wh*-islands
  a. *Zhangsan   xiang   zhidao ta_i xihuan   shenme   a $Lisi_i$?
     Zhangsan   want   know   he   like   what   SFP   Lisi
     'Intended: Zhangsan wants to know what he likes(,) Lisi?'

  b. *Zhangsan   xiang   zhidao shei   xihuan ta_i a $Lisi_i$?
     Zhangsan   want   know who   like   he   SFP   Lisi

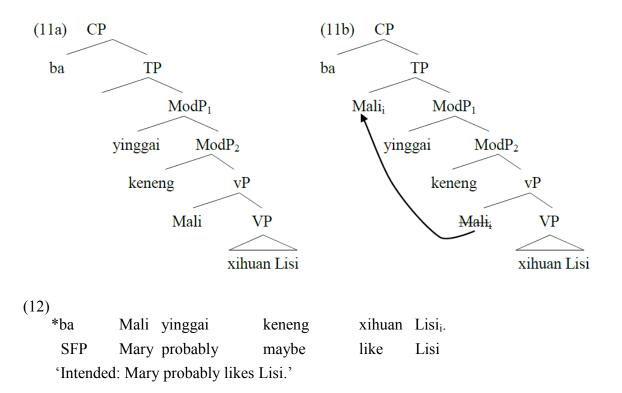'Intended: Zhangsan wants to know who likes him, Lisi?'

(9) Adjunct Condition
    *Ta_i huilai   zhiqian ni   buneng   zou a $Lisi_i$!
    He   come back   before you   cannot   leave SFP Lisi
    'Intended: Before he came back, you cannot leave(,) Lisi!'
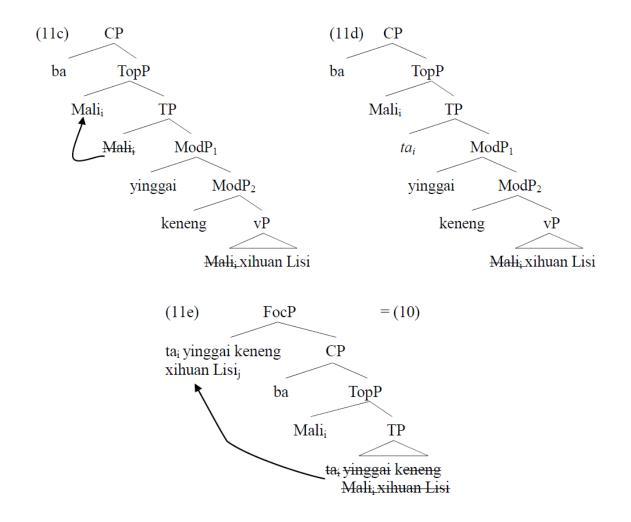
2. Proposal

Based on the investigation of new MC data, I argue in favor of a movement analysis of RD that consists of two operations, i.e., overt topic movement of the dislocated RD phrase followed by remnant focalization movement of the TP to a Specifier of Focus position that is part of the split CP domain in MC (see Paul 2014, Erlewine 2016, Pan & Paul 2016, for the position of SFPs in MC). The step-by-step derivation of (10) is shown in (11).

(10) Ta_i yinggai   keneng   xihuan Lisi ba $Mali_i$.
      she probably   maybe   like   Lisi SFP   Mary
      'She probably likes Lisi, Mary.'

The underlying structure is shown in (11a), where the sentence final particle is base generated at the C position. The first step of the derivation is A-movement of the subject from Spec of vP to Spec of TP, as illustrated in (11b), namely, *Mali* moves to the Spec TP position. The derivation cannot end here; the sentence final particle cannot remain in the sentence initial position as shown in (12). The sentence final particle requires moving the full TP to the Spec of CP position. However, in order to account for right dislocation, TP movement to Spec of CP alone will not account for why the right-dislocated phrase surfaces in the sentence final position. I show below the additional steps I argue for, before TP-movement to Spec, CP applies.

(11a)　CP

ba　　　　TP

　　　　ModP$_1$

yinggai　　ModP$_2$

keneng　　vP

Mali　　VP

xihuan Lisi

(11b)　CP

ba　　　　TP

Mali$_i$　　ModP$_1$

yinggai　　ModP$_2$

keneng　　vP

~~Mali$_i$~~　　VP

xihuan Lisi

(12)

*ba	Mali	yinggai	keneng	xihuan	Lisi$_i$.
SFP	Mary	probably	maybe	like	Lisi

'Intended: Mary probably likes Lisi.'

After subject movement to Spec, TP, the next step is moving the subject *Mali* to Spec of TopP position (11c). This A'-movement is crucial in the derivation of right dislocation since it not only separates the dislocated phrase from the host clause but it also captures the fact that the dislocated phrase is the old information, a Topic. After A'-topic-movement, the resumptive pronoun can be argued to be a consequence of remnant movement (11d) (see e.g. Aoun et al. 2001 for arguments for resumption as movement). The last step is remnant movement of the whole TP to Spec of FocP position (11e), which also generates the correct surface word order of right dislocation. Meanwhile, the pragmatic function of the remnant TP is also captured in its behavior as a Focus element, representing new discourse information in the discourse. The present analysis also independently captures the exceptional clause-final position of SFPs in MC.

(11c) CP
- ba
- TopP
  - Mali$_i$
  - TP
    - ~~Mali$_i$~~
    - ModP$_1$
      - yinggai
      - ModP$_2$
        - keneng
        - vP
          - ~~Mali$_i$~~ xihuan Lisi

(11d) CP
- ba
- TopP
  - Mali$_i$
  - TP
    - ta$_i$
    - ModP$_1$
      - yinggai
      - ModP$_2$
        - keneng
        - vP
          - ~~Mali$_i$~~ xihuan Lisi

(11e) FocP = (10)
- ta$_i$ yinggai keneng xihuan Lisi$_j$
- CP
  - ba
  - TopP
    - Mali$_i$
    - TP
      - ~~ta$_i$ yinggai keneng Mali$_i$ xihuan Lisi~~

This proposal is also supported by the following contrast between topic and focus (13). From the question and answer pair, it can be seen that right-dislocated phrases serve as old information (topic) and cannot be focused. Hence, using right dislocation for the answer (A) is felicitous in (13a), but not in (13b) where the focus of the question is the right-dislocated phrase.
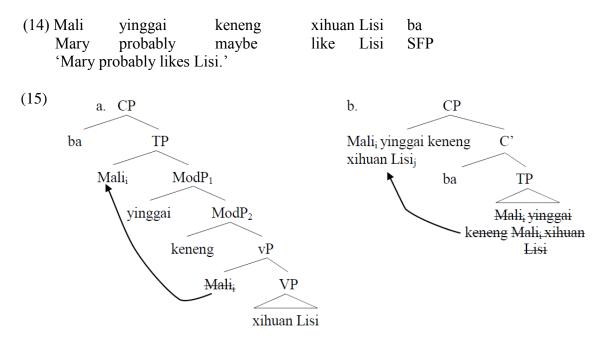
(13) a. Focus on host clause   b. #Focus on the right-dislocated phrase

Q: Mali	shi	zhaodao	shei?	Q: Shi	shei	zhaodao	Lisi?
Mary	Foc	find	who	Foc	who	find	Lisi

'Who did Mary find?'   'Who found Lisi?'

A: Ta$_i$	shi	zhaodao	Lisi	a	Mali$_i$	A: #Shi	ta$_i$	zhaodao	Lisi	a	Mali$_i$
she	Foc	find	Lisi	SFP	Mary	Foc	she	find	Lisi	SFP	Mary

'It was Lisi that she found, Mary.'   'It was her who found Lisi, Mary.'

3. Consequences

3.1. Topic movement and sentence final particles

3.1.1. Derivation of basic SFP cases

An additional consequence of the present proposal is the derivation of sentences with SFPs but without right-dislocated phrases, as in (14). The derivation of (14) under the present proposal is illustrated in (15). (15a) is the same derivational step as in (11b); that is, moving the subject NP to Spec of TP position. Unlike the case of right dislocation, if we want to derive this basic sentence with SFP, we just directly move the whole TP to the Spec of CP position, as illustrated in (14b).
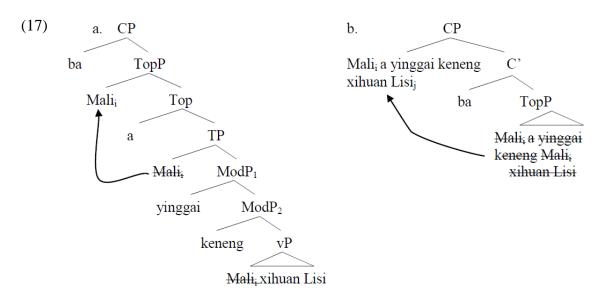
(14) Mali   yinggai   keneng   xihuan Lisi   ba
      Mary   probably   maybe   like   Lisi   SFP
      'Mary probably likes Lisi.'

(15)

3.1.2. Derivation of Topic-movement only cases

The other consequence of the present proposal is that it can also capture the derivation of topic movement in Mandarin Chinese. (16) is an instance of subject topicalization in Mandarin Chinese, where the topic marker is optional. The topic marker here overtly identifies the subject, *Mali* as occurring in the topic position, and not in the Spec of TP position.

(16) Mali   (a),   yinggai   keneng   xihuan   Lisi   ba
     Mary   TOP   probably   maybe   like   Lisi   SFP
    'Mary, she probably likes Lisi'

The derivation of topicalization in Mandarin Chinese under the present proposal is illustrated in the following. The two steps are identical to (11a) and (11b). After movement of the subject, *Mali*, to Spec, TP, it further moves to the Spec of TopP position, generating the structure with topicalization as in (17a), which is identical to the step in (11c), except for the fact that the topic head *a* is overtly realized in (17a).

Unlike the derivation of right dislocation, in cases of topic-movement with SFP such as (16), the whole TopP then moves to the Spec of CP position as in (17b), generating the overt structure with the SFP in final position.

(17)

3.2. Comparison with previous analyses

3.2.1. (Remnant) movement analysis

In this section, I briefly review some of the analyses of right dislocation proposed in the literature. One of them is a competing remnant movement approach in the literature, which can capture the fact that RD is sensitive to islands. This analysis also contends that

the right dislocated phrase undergoes a leftward movement, but it is followed by remnant movement of the vP (Cechetto 1999, Frascarelli 2000, Villalba 2000, Belletti 2004), as illustrated in (18) in Catalan.

(18) Steps for movement analysis for RD (López 2009: 102)

(i) Jo	**els**$_i$	he		llegit	**els**	**llibres**$_i$
I	them	have		read	the	books

(ii) Jo [els llibres]$_i$ els he llegit t_i (object raising)

(iii) Jo [els he llegit t_i]$_k$ [els llibres]$_i$ t_k (VP raising)

      However, there are some limitations of this analysis. First, the motivation for the right-dislocated phrase leftward movement is not explicitly spelled out. Second, the landing site of the right-dislocated phrase and of the remnant vP are not specified. The Chinese data raises additional questions for this analysis, such as the generation of sentence final particles and the specification of the constituent that remnant movement applies to, which I accounted for in sections 2 and 3.2. In addition, the Chinese data may also raises questions about the generation of RD structures with modals, which I illustrated in (14). I explore this issue in detail in other work in preparation.

3.2.2. Base generation analysis (with only one movement step)
      There is also a competing base-generation approach that has only one relevant movement operation (other than movement operations that take place for other reasons). This approach assumes that the dislocated phrase (referred to as background in Zwart 2001), is base-generated in a high specifier position. The host clause then undergoes leftward movement (therefore, no remnant movement is involved), as in (19). The Dutch example from Zwart (2001) is provided in (19b).

(19) a. (i) [*background* [**main clause**]]   (ii) [[**main clause**]$_i$ [*background* t$_i$]]

b. **Ik**	**heb**	**hem**$_i$	**verteld**	**dat**	**ik**	**het**	**betreurde**	*die*	*jongen*$_i$
I	have	him	told	that	I	it	regretted	that	guy

‘That guy, I have told him that I regretted it.’

      Nevertheless, there are limitations for this approach as well. First, it does not specify the position of the base-generated RD phrase nor the exact landing site of the host clause. Second, assuming the data from Zwart and MC in fact correspond to the same grammatical phenomenon, it is unclear how Zwart's base-generation analysis would account for the position of the RD phrase in Mandarin Chinese. Particularly, the position of SFPs in Mandarin Chinese indicates that the dislocated phrase needs to be placed in a position higher than TP, which challenges the base generation analysis of the right-dislocated phrase. If we apply Zwart's base generation analysis to MC cases such as (10)

(with or without the overt realization of a topic marker), there would be two possible outcomes, but neither one would generate the correct structure, as shown in (20) and (21). In (20a), it would be assumed the dislocated phrase is base-generated at the Spec, CP position and SFP is not part of the host clause (it is rather the C head, as I argued for e.g. in (11)). After the remnant movement takes place in (20b), it does not generate the correct RD order. Similarly, in (21a), the dislocated phrase would be base-generated at the Spec, CP position but SFP would be part of the host clause. This structure also does not capture the correct RD order in MC as in (21b), since the SFP would end up in clause initial position after remnant movement took place. Last and most important, the base-generation analysis cannot account for the island sensitivity of RD in MC (section 1).

(20) Possibility 1
  a. [*Mali* (*a*)]   ba [**Lisi xihuan ta**]
     Mary   TOP SFP Lisi   like   her
  b. *[**Lisi xihuan ta**]$_i$ [*Mali* (*a*)] ba t$_i$

(21) Possibility 2
  a. [*Mali*   *a*] [**ba Lisi   xihuan ta**]
     Mary   TOP SFP Lisi   like   her
  b. *[**ba Lisi xihuan ta**]$_i$[*Mali a*] t$_i$

4. Conclusion

  Previous analyses of right dislocation (RD) proposed for languages other than Mandarin Chinese (MC) did not specify the landing site of the dislocated phrase and the host clause. Crucially, those analyses are not able to account for the surface placement of sentence final particles in MC. Base-generation analyses also fail to derive the island sensitivity of RD in MC. Considering understudied cases of RD in Mandarin Chinese, I proposed a movement analysis containing two operations, topicalization and focalization, and specified precisely the landing site of the dislocated phrases. This analysis can account not only for the correct surface (phonological) representation but also for the discourse function of RD structures in MC. In addition, my proposed analysis can derive independent cases of basic clauses with SFP and topicalization without RD structures.

REFERENCES

AVERINTSEVA-KLISCH, MARIA. 2008. To the right of the clause: Right dislocation vs. afterthought. In Cathrine Fabricius-Hansen and Wiebke Ramm (eds.), *Subordination vs. Coordination in Sentence and Text - From a Cross-Linguistic Perspective,* 217-239. Amsterdam: John Benjamins.

BELLETTI, ADRIANA. 2004. Aspects of the low IP area. In Luigi Rizzi (ed.), *The Structure of CP and IP. The Cartography of Syntactic Structures*, vol. 2, 16–51. Oxford: Oxford University Press.

CECCHETTO, CARLO. 1999. A comparative analysis of left and right dislocation in Romance. *Studia Linguistica* 53(1). 40-67.

CHEUNG, LAWRENCE YAM-LEUNG. 2009. Dislocation focus construction in Chinese. *Journal of East Asian Linguistics* 18(3). 197-232.

CHIANG, YU-CHUAN LUCY. In preparation. Qualifying Research Paper. University of Michigan, Ann Arbor.

LÓPEZ, LUIS. 2009. *A Derivational Syntax for Information Structure.* Oxford: Oxford University Press.

MERCHANT, JASON. 2004. Fragments and ellipsis. *Linguistics and Philosophy* 27.661–738.

OTT, DENNIS AND MARK DE VRIES. 2012. Thinking in the right direction: An ellipsis analysis of right-dislocation. *Linguistics in the Netherlands* 29(1). 123-134.

OTT, DENNIS AND MARK DE VRIES. 2016. Right-dislocation as deletion. *Natural Language & Linguistic Theory* 34. 641-690.

PAN, VICTOR JUNNAN AND WALTRAUD PAUL. 2016. Why Chinese SFPs are neither optional nor disjunctors. *Lingua* 170. 23-34.

PAUL, WALTRAUD. 2014. Why particles are not particular: Sentence-final particles in Chinese as heads of a split CP. *Studia Linguistica* 68(1), 77-115.

ZWART, JAN-WOUTER. 2001. Backgrouding ('right-dislocation') in Dutch. Ms. University of Groningen, <http://www.let.rug.nl/~zwart/docs/backgr.pdf> (11 August 2017).

Syntax-Semantic Interface of Cantonese Sentences with Specific Indefinite Subjects
A Conceptual Semantic Account

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Noun phrases with particular semantic features or a certain combination of them (i.e. specificity, genericity, definiteness, etc.) are more likely to appear at certain syntactic positions. The present paper takes as a starting point Cantonese, topic prominence language, prefers specific and/or definite subjects (Li, 2013) and syntactic alternation, i.e. passivization, involving specific indefinite noun phrases results in inevitable change in meaning. The special phenomena brought by specific indefinite subject in Cantonese sentences are a result of syntax and semantic interface. A crucial point in my proposal is that the interplay between semantic and syntax is not a one-step process; constructions (more specifically certain constituents) generated from the conceptual semantic structure may contribute extra meaning to its semantic and in turn leads to a change in the conceptual semantic structure.

0. Introduction

Referential properties of noun phrases interact with syntax. Noun phrases with particular semantic features or a certain combination of them (i.e. specificity, genericity, definiteness, etc.) are more likely to appear at certain syntactic positions. The present paper takes as starting point topic prominence languages, such as Cantonese, prefer specific and/or definite subjects (Li, 2013). Against this backdrop, two crucial referential properties, namely specificity and definiteness, of subjects and objects in Cantonese actives and passives are examined. It is shown that while NPs of all combinations of specificity and definiteness are possible as subjects and objects in active sentences, there

is limitation in subjecthood of [+ specific] and [- definite] NPs. This invites questions regarding several aspects of the Conceptual Semantic approach:

1. If requirements of referential properties of NPs change according to the syntactic constructions, how should they be expressed in the conceptual semantic structure?

2. How do the requirements of referential properties of NPs interact with syntax (via the linking theory) that gives a different interpretation for NPs of [+ specific] and [- definite] in passives?

The rest of the paper is arranged as follows. First, I am going to set the background for discussion by listing examples of Cantonese sentences with NPs of 4 different combinations of specificity and definiteness at the subject and object positions. Then, I am going to investigate subjects in typical passives (as oppose to retained object passives) and pinpoint the central issue of discussion.

1. NPs with referential properties in active Cantonese sentences

Matthews and Pacioni (1997) examined the characteristics of Cantonese nouns with different referential features. Generally speaking, NPs with different specificity and definiteness are possible at both subject and object positions and most of them are expressed in the same manner in both positions, except NPs of [+ specific] and [- definite]. Examples are shown below in 1.1 and 1.2. The target NPs in each of the sentences are italicized and bolded.

1.1 Subjects in Cantonese actives

Type 1 + specific, + definite

(1) *Aa3 can2* zing2 wai6　zo2　bou6 gei1[1]

阿陳 整 壞 左 部 機

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[1] Symbols and abbreviations used in this paper: * = Ungrammatical; 1st = First Person; 2nd = Second Person; 3rd = Third Person; CL = Classifier; DEM = Demonstrative pronoun; NEG = Negation Marker; SUBJ = Subject; OBJ = Object; Perf = Perfective Aspect; Pass = Passive marker; SG = Singular; part=Particle; ACCOMP=Accomplishment particle. The romanization scheme adopted in this paper is based on the one developed by The Linguistic Society of Hong Kong (2002). There are altogether six tones in this scheme: 1 = high level; 2 = high rising; 3 = mid level; 4 = low falling; 5 = low rising; 6 = low level. The tone is marked as superscript of each romanized character.

Ah Chan make-broken Perf   CL   machine

Ah Chan broke the machine.

Type 2 +specific, -definite

(2)* ***Go3 jan4***   zing2 wai6   zo2   bou6 gei1

個 人   整 壞   左 部 機

CL person   make-broken Perf. CL   machine

Some may argue that unacceptability of the sentence is stemmed from the phonological tendency of disyllabic constitutes in Cantonese. To fulfil this requirement, we may add either an adjective or a demonstrative such as *gwo2 go3果個* and *nei1 go3 呢個*. However, the meaning of the new NPs will be altered as the whole NPs would be interpreted as [+specific] [+definite].

(3) ***Gwo2 go3 jan4***   zing2 wai6   zo2   bou6 gei1

果 個 人   整 壞   左 部 機

DEM CL person make-broken Perf CL   machine

That person broke the machine.

(4) ***Go3   seoi1 jan4***   zing2 wai6   zo2   bou6 gei1

個 衰 人   整 壞   左 部 機

CL bad person make-broken Perf CL   machine

That bad person broke the machine.

Gwo2 go3 jan4果個人 and *go3 seoi1 jan4 個衰人* are a specific and definite NPs. To express a specific and indefinite noun phrase, an existential morpheme *yau5有* is required.

(5) ***Yau5 (Go3) jan4*** zing2 wai6   zo2   bou6 gei1

有 (個) 人 整 壞   左 部 機

Have *CL person* make-broken   Perf   CL   machine

(There is) a particular someone who broke the machine.

Frawley (1992) points out that existence does not serve as the necessary condition for specificity. In other words, something denoted by a [+specific] NP may or may not exist. A specific and indefinite subject has to be expressed with the existential morpheme *yau5*有, meaning 'There is someone who broke the machine'. The requirement of the existential morpheme *yau5*有 necessarily entails the co-occurrence of specificity and existence[2]. Moreover, specific and indefinite NPs introduced by the existential morpheme *yau5*有 can only appear in pre-verbal/subject position as the existential phrase [yau5有 (CL) N] cannot appear at the post-verbal/object position. Specific indefinite NPs are expressed differently in object position (see 1.2).

Type 3 - specific, + definite

Non-specific NPs are usually generic NPs. Indefiniteness is expressed with bare NPs without any classifiers or determiners. Sentences with subjects of generic NPs usually denote habitual and factual events.

(6) ***Gwo3 zung2 zoek3 zai2*** sik6 juk6 gaa3
    果　種　雀　仔 食　肉　家
    DEM CL　　bird　　　eat meat part
    That kind of birds eat meat.

Type 4 - specific, - definite

(7) ***zoek3 zai2*** sik6 guk1 maai5 gaa3
    雀　仔 食　穀　米　　喋
    Birds　　　eat　grains　　　part
    Birds eat grains.

---

[2] In Xu's (1997) study on the limitation of subjecthood and effects of semantic features of NPs in Chinese, he suggests that *you5* 有 used to introduce an indefinite NP serves two purposes (or at least): 1. create a pragmatic difference; 2. serve as a syntactic marker to get over the definiteness requirement of the subject.

1.2 Objects in Cantonese actives

Type 1 + specific, + definite

(8) Aa3 can2 zing2 wai6   zo2   *ngo5   bou6 gei1*
     阿 陳 整 壞 左 *我 部 機*
     Ah Chan make-broken Perf *1st sg.   CL   machine*
     Ah Chan broke the machine.

Type 2 +specific, -definite

(9) Aa3 can2 daai3 zo2 *go3 jan4* lai4,   nei5   zi1-m4-zi1   keoi5 hai6 bin1 go3?
     阿 陳 帶 左 *個 人* 黎, 你   知-唔-知   佢 係 邊 個?
     Ah Chan bring Perf *CL person* come, 2^nd^sg. know-not-know 3rd sg be   who
     Ah Chan brought someone (to an event), do you know who he/she is?

    Instead of using the existential morpheme *yau5*有, specific indefinite NPs are expressed with classifiers. '*Go3 jan4 個人*' in sentence (9) refers to a particular unique person.

Type 3 -specific, +definite

(10) Jan4 leoi6 hai6 gam2 sik6 *nei1 zung2 jyu2*, sik6-dou3   zau6lai4 zyut6 zung2 laa3
     人 類 係 咁 食 *呢 種 魚*, 食-到   就黎 絕 種 啦
     Human   constantly eat *DEM. CL   fish*, eat-ACCOMP soon   extinct   part
     Human has too many of this kind of fish to the extent that they will soon extinct.

Type 4 -specific, -definite *zoek3 zai2* sik6 guk1 maai5 gaa3

(11) Joek3 zai2 sik6 *guk1 mai6* gaa3
     雀 仔 食 穀 米 㗎
     Birds   eat *grains*   part.
     Birds eat grains.

2. Evidence of peculiarity of [+specific][-definite] NPs in passivization

As is shown in (2)–(5) above, the expression of a [+specific][-definite] NP leads to a struggle between meaning retaining and syntactic requirement. On one hand, the syntax of Cantonese requests an existential morpheme yau5有 before the NP; on the hand, an unwanted change in meaning is resulted because of the syntactic constraint. In what follows, I am going to demonstrate that the disambiguation of [+specific [+definite] NPs through passivization can indeed shed light to the syntax-semantic dilemma of [+specific][-definite] NPs at subject position.

It is widely agreed that passivization is a shift of grammatical relations between thematic roles and grammatical functions. A general description of this shift in Cantonese involves demotion of the subject agent and promotion of the object patient to the subject position[3]. As passivization involves only a change of mapping of grammatical functions, the referential properties of the argument NPs should be expected to retain in active-passive alternation.

Consider sentence (1) again (copied in (12) below):

Active: (12) Aa3 can2   zing2 wai6   zo2   **bou6 gei1**

           阿　陳　　　　整　壞　　　左　　**部　　機**

           Ah Chan   make-broken   Perf **CL   machine**

           Ah Chan broke the/a machine.

It is noticed by Cantonese speakers that the object NP *bou6 gei1部機* has two possible readings, one is [+specific][+definite] and the other is [+specific][-definite]:

Meaning 1:   [+specific][+definite] Object

(12-a)Aa3 can2   zing2 wai6   zo2   bou6 gei1

    阿　陳　　　　整　壞　　　左　　部　　機

    Ah Chan   make-broken   Perf   CL   machine

    Ah Chan broke the machine.

---

[3] The general claim about the shift in grammatical relation does not hold for languages which have impersonal passive such as Dutch and German (Keenan & Dryer 2006). Passives in Finnish shows asymmetrical shift of grammatical relation too (Comrie 1977, Ida Toivonen, p.c).

Meaning 2:   [+specific][-definite] Object

(12-b)Aa3 can2   zing2 wai6   zo2   (jat1)   bou6 gei1

　　　阿 陳　　　整　 壞　　左　 （一）　 部　　機

　　　Ah Chan　　　make-broken Perf (one) CL   machine

　　　Ah Chan broke a machine.

When (12-a) and (12-b) are passivized, we get (13-a) and (13-b) respectively.

(13-a)   **Bou6 gei1**   bei2   aa3   can3   zing2-waai6 zo2

　　　部　 機　　　　畀　　阿　 陳　整 - 壞　 咗

　　　CL   machine   PASS   Ah   Chan make-broken Perf

　　　The machine was broken by Ah Chan.

*(13-b)   **jat1 bou6 gei1**   bei2   aa3   can3   zing2-waai6 zo2

　　　一　 部　 機　　　畀　　阿　 陳　整 - 壞　 咗

　　　One **CL   machine**   PASS   Ah   Chan make-broken Perf

　　　A machine was broken by Ah Chan.

The reading with [+specific][+definite] object (i.e. (12a)) produces a corresponding passivized sentence with a [+specific][+definite] subject (i.e. (13a)). However, the same promotion mechanism of the [+specific][-definite] object in the second reading (i.e. (12b)) fails to produce a grammatical sentence (i.e. (13b)).

It is noted that numerals rarely appears at the initial position of a sentence in Cantonese. However, simply dropping the numeral jat1 '一' would give us the same [+specific][+definite] subject NP as in (13-a). To retain the [+specific, -definite] features of the active object, an existential morpheme is required, see (14):

(14) **Jau5**   **bou6 gei1**   bei2   aa3   can3   zing2-waai6 zo2

　　　有　 部　　機　　　畀　　阿　 陳　整 - 壞　 咗

　　　Have CL   machine   PASS   Ah   Chan make-broken Perf

　　　There is a particular machine which is broken by Ah Chan.

What is bizarre about the promotion is that while the movement in sentence (12) leads to a change in the referential properties of the NP, fulfilling the syntactic requirement on [+specific, -definite] subject NP (i.e. inserting 'yau5有') leads to a change in the semantics. First, sentence (14) emphasizes on the existence of such a broken machine (one that was broken by Ah Chan). Second, sentence (14) behaves differently in negation and interrogative, see sentence (14)-(18) as illustration.

(15) Negation of sentence (13-a)

Bou6 gei1　　　m4 hai6 bei2 aa3 can3　zing2-waai6 zo2

部　　機　　　唔 係 畀 阿 陳　整 - 壞　　咗

CL　　machine NEG-be PASS Ah　Chan make-broken Perf

The machine was not broken by Ah Chan.

(16-i) Negation of sentence (13-b)

*Yau5 bou6 gei1　　　m4-hai6　bei2　　　aa3 can3　zing2-waai6 zo2

有　　部 機　　　　唔-係 畀　　　阿 陳　整 - 壞　　咗

Have　CL machine　　NEG-be　PASS　　Ah　Chan make-broken Perf

(16-ii) Mou5　jat1　bou6 gei1　hai6 bei2　　　aa3 can3 zing2-waai6　　　ge3

無　　　一　部 機　係 畀　　阿 陳 整 - 壞　　　嘅

　Not have one　CL machine be　PASS　Ah Chan make-broken　　part

There weren't any machines which were broken by Ah Chan.

(17) Interrogative of sentence (13-a)

Bou6 gei1　　　hai6-m4-hai6 bei2　　　aa3 can3　zing2-waai6 zo2

部　　機　　　係-唔-係　畀　　　阿 陳　整 - 壞　　咗

CL　　machine be-not-be　　PASS　　Ah　Chan make-broken Perf

Was the machine broken by Ah Chan?

(18-i) Interrogative of sentence (13-b)

* Yau5bou6 gei1　　　　hai6-m4-hai6 bei2　aa3　can3　zing2-waai6 zo2

有　部 機　　　　　係-唔-係　畀 阿 陳　整 - 壞　　咗

Have   CL machine   be-not-be   PASS Ah   Chan   make-broken Perf

(18-ii) hai6-m4-hai6 yau5   bou6 gei1   bei2   aa3   can3   zing2-waai6 zo2
　係-唔-係　　有　　部　機　　畀　　阿　陳　　整 - 壞　　咗
Be-not-be   have   CL   machine   PASS   Ah Chan   make-broken Perf
Is there a machine which was broken by Ah Chan?

　　　Since passive is generally considered a meaning retaining syntactic alternations, the key which leads to the difference in interpretation and syntactic behaviors is then lies in the referential features of the noun phrase, or more specifically, the interaction between the semantic restriction imposed by the subject noun phrase and the surface syntax. In the following section, I am going to provide an account for the syntax and semantics dilemma brought about by [+specific] [-definite] NP in subject positions. The analysis will be conducted within the Conceptual Semantic framework[4].

3. A Conceptual Semantic Account

　　　The main idea of my proposal is that the peculiarity of this type of passive is resulted from a two-step interaction between the conceptual structure and the syntax. The originally non-semantic (i.e. only required by the syntax) constituent contributes extra meaning to the construction as a result of mapping from conceptual semantic structure to syntax, and the process in turn leads to a modification back in the conceptual semantic structure. Let's consider sentence (13-b) again (copied in (19) below) and its corresponding conceptual semantic structure is shown in (20):

(19) *jat1 bou6 gei1   bei2   aa3   can3   zing2-waai6 zo2
　　一　部　機　　畀　阿　陳　整 - 壞　　咗
One   CL   machine PASS   Ah   Chan make-broken Perf
A machine was broken by Ah Chan.

---

[4] Lexical features and differences among different types of nouns are expressed independent lexical entries and are incorporated into the conceptual structure headed by the verb through argument fusion.

(20) Before incorporating arguments:

$$\left[\begin{array}{l} CS^+ ([\quad]_i{}^\alpha, [INCH(BE ([\quad]^\beta{}_j, AT([STATE])))]) \\ AFF ([\alpha]_i, [\beta]_j) \end{array}\right]$$

$$\text{OBL}_\theta \text{ SUBJ}$$

After incorporating arguments:

$$\left[\begin{array}{l} CS^+ ([阿陳'Ah\ Chan']_i{}^\alpha, [INCH(BE ([機'Machine']^\beta{}_j, AT([壞\ 'Broken'])))]) \\ AFF ([阿陳'Ah\ Chan']_i, [機'Machine']_j) \end{array}\right]$$

$$\text{OBL}_\theta \qquad\qquad \text{SUBJ}$$

The first tier of the structure tells that an NP [阿陳'Ah Chan'] has successfully caused another NP, i.e. [機'Machine'] to be at a state of broken, i.e. [壞'Broken']. In accord to the mapping rules in passivization, the first argument of AFF is suppressed and mapped to an oblique and the second to the subject.

As mentioned in Section 2, the existential morpheme *yau6*有 is necessarily inserted only when the subject NP is [+specific, -definite], i.e. *yau6*有 required by the syntax[5]. Constituents serve purely syntactic functions are not present in the conceptual structure and thus the existential morpheme *yau6*有 is absent in structure (20) in the first place. In other words, the existential morpheme *yau6*有 will only appear in the surface syntax if and only if the subject NP is specified as [+specific, -definite]. In the Conceptual Semantic framework, this can be done by adding semantic restrictions to arguments:

(21)

$$\left[\begin{array}{l} CS^+ ([\quad]_i{}^\alpha, [INCH(BE (\left[\begin{array}{l}+spec \\ -def\end{array}\right]^\beta{}_j, AT([STATE])))]) \\ AFF ([\alpha]_i, [\beta]_j) \end{array}\right]$$

---

[5] Xu, L.J. pointed out in his study of Mandarin indefinite noun phrases that the insertion of 'you (have)' in front of an NQNP (numerically quantified noun phrase) is both syntactic, i.e. to conform with the tendency of turning an indefinite subject to an object, and semantic, i.e. a change of focus.

As shown in (21), the second argument in the AFF tier is bound by the patient with semantic restrictions. When it is mapped to the syntax, the existential morpheme *yau6*有is inserted to satisfy the syntactic constraint, i.e. a specific indefinite NP is introduced by *yau6*有 at preverbal position, see (22) for an illustration.

(22)

$$\left[\begin{array}{l} CS^+ ([阿陳'Ah\ Chan']_i^{\alpha}, [INCH(BE\ (\left[\begin{array}{l} +spec,機'Machine' \\ -def \end{array}\right]_j^{\beta}, AT([壞\ 'Broken'])))]) \\ AFF ([\alpha]_i, [\beta]_j) \end{array}\right]$$

| | *(Semantic to syntax mapping)*
OBL$_\theta$ SUBJ

↓   *(language specific syntax rule)*

Insertion of '*yau6*有' to SUBJ

The above steps gives us sentence (14), copied in (23).

(23) Yau5bou6 gei1   bei2   aa3   can3   zing2-waai6 zo2
有   部   機   畀   阿   陳   整 - 壞   咗
HaveCL   machine   PASS Ah   Chan   make-broken Perf
There is a machine which was stolen by Ah Chan.

Now, that leaves us the latter part of the question: why is there a shift in the focus of meaning in (23) and the syntactic differences exhibited in between passives with specific and indefinite subject and those with NPs with different referential properties (shown in sentence (15)-(18))? I argue that it is caused by a 'feed-back' alternation from the surface syntax to the semantic structure. Since '有 yau6' carries its own lexical meaning (represent by (24)), the morpheme which is only inserted to fulfil syntax requirement now adds extra meaning to the sentence.

According to Jackendoff (1990), an existential meaning, i.e. *there is*, is represented with the function [STATE]:

(24) [STATE] → [$_{STATE}$ BE$_E$ ([MACHINE])]

Meaning: There is a machine.

Consider sentence (23) again, we can add a STATE tier, i.e. [$_{STATE}$ BE$_E$ ([機 'Machine'])] to the structure. The new structure shown in (25) is headed by the BE$_E$ tier
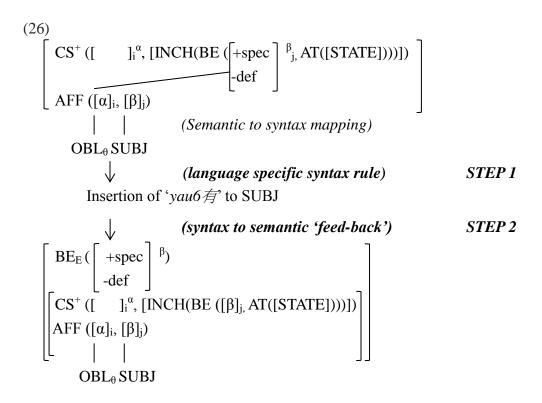
stating the existence of an entity identified with the information provided by the CAUSE tier:

(25)

$$
\begin{bmatrix}
BE_E \left(\begin{bmatrix} +spec \\ -def \end{bmatrix}^{\beta} \right) \\
\begin{bmatrix} CS^+ \left([\quad]_i^{\alpha}, [INCH(BE ([\beta]_j, AT([STATE])))] \right) \\
\quad AFF ([\alpha]_i, [\beta]_j) \\
\qquad | \quad | \\
\qquad OBL_\theta \; SUBJ \end{bmatrix}
\end{bmatrix}
$$

The semantic restrictions of argument are stated in the BE_E tier and the argument is bounded with the argument under the inchoative function as represented by the subscription $[\beta]$. The shift of focus of semantic meaning can be explained by the change of head function in the conceptual semantic structure.

4. Conclusion

All in all, I argue that the special phenomena brought by specific indefinite subject in Cantonese sentences are a result of syntax and semantic interface. A crucial point in my proposal is that the interplay between semantic and syntax is not a one-step process; constructions (more specifically certain constituents) generated from the conceptual semantic structure may contribute extra meaning to its semantic and in turn leads to a change in the conceptual semantic structure. My overall proposal is illustrated below:

(26)

$$\begin{bmatrix} \text{CS}^+ ([\quad]_i{}^\alpha, [\text{INCH(BE} (\begin{bmatrix} +\text{spec} \\ -\text{def} \end{bmatrix}{}^\beta{}_{j,} \text{AT}([\text{STATE}])))]) \\ \text{AFF} ([\alpha]_i, [\beta]_j) \end{bmatrix}$$

      | | *(Semantic to syntax mapping)*

    OBL$_\theta$ SUBJ

       ↓   ***(language specific syntax rule)***   **STEP 1**

    Insertion of '*yau6* 有' to SUBJ

       ↓   ***(syntax to semantic 'feed-back')***   **STEP 2**

$$\begin{bmatrix} \text{BE}_E (\begin{bmatrix} +\text{spec} \\ -\text{def} \end{bmatrix}{}^\beta) \\ \begin{bmatrix} \text{CS}^+ ([\quad]_i{}^\alpha, [\text{INCH(BE} ([\beta]_j, \text{AT}([\text{STATE}])))]) \\ \text{AFF} ([\alpha]_i, [\beta]_j) \end{bmatrix} \end{bmatrix}$$

      | |

    OBL$_\theta$ SUBJ

REFERENCES

Comrie. Bernard. 1977. In defense of spontaneous demotion: the impersonal passive, In Peter and Jerrold M. Sadock (eds.), *Grammatical Relations. (Syntax and Semantics, Vol. 8.)*. New York: 47-58.

Culicover, Peter W., & Ray Jackendoff. 2005. *Simpler Syntax*. Oxford: Oxford University Press.

Frawley, William.1992. *Linguistic Semantics*. pp. 69–81.

Jackendoff, Ray. 1990. *Semantic Structures*. Cambridge, MA: MIT Press.

Keenan, Edward L. and Matthew S. Dryer. 2007. Passive in the World's Languages. In Timothy Shopen (ed.), *Clause Structure,Language Typology and Syntactic Description (2nd ed), Vol. 1*. Cambridge University Press: 325-361.

Matthews, Stephen & Patrizia Pacioni. 1997. Specificity and genericity in Cantonese and Mandarin. In Liejiong Xu (ed.), *The Referential Properties of Cantonese Noun*

Phrases. Paris: Ecole des Hautes Etudes en Sciences Sociales. 45-59.

Matthews, S. & Yip, V. 2011. *Cantonese: A Comprehensive Grammar (2nd ed.)*. London; New York: Routledge.

Xu, L. 1997. Limitations on subjecthood of numerically quantified noun phrases: a pragmatic approach. In L. Xu (Ed.), *The Referential Properties of Chinese Noun Phrases*, 25-44. Ecole des Hautes Etudes en Sciences Sociales.

A Force-Theoretic Approach to the Mandarin *ba*-Construction

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The Mandarin *ba*-construction follows the structure of [DP_1 + *ba* + DP_2 +(*gei*) + Predicate], with a semantic pattern as DP_1 causes DP_2 to change to a new state indicated by the predicate (Zhang 2000). This study seeks to encode this pattern structurally, by using a force-theoretic approach (Copley & Harley 2015). In this analysis, the pattern is reanalyzed as DP_1 exerts a force to DP_2, so that DP_2 experiences a situation change (S_0 to S_1). DP_1 and DP_2 are thus interpreted as force producer and force recipient respectively. This semantics-syntax approach can capture the affectedness associated with DP_1 and provide a unified analysis to pre-*ba* DPs (i.e. DP_1) when they serve as agents or causers.

0. Introduction

In Mandarin, there is a unique *ba*-construction, roughly taking the form of [DP_1 + *ba* + DP_2 + (*gei*) + VP], as exemplified in (1a). This construction seems to have a SVO counterpart in (1b).

(1) a. Lisi ba na-ge   huaidan   sha-le.
         Lisi BA that-CL scoundrel kill-LE[1]
         'Lisi killed that scoundrel.'

     b. Lisi sha-le na-ge   huaidan.
         Lisi kill-LE that-CL scoundrel
         'Lisi killed that scoundrel.'

                                                    (Huang et al. 2009)

From the earliest analyses, the seeming interchangeability has suggested a movement analysis of the construction, i.e. *ba* functions to raise the object DP_2 to an immediate post-*ba* position (Li 1924). The post-*ba* DP_2 also gains an additional meaning of getting 'disposed' or 'affected' (Wang 1954). Henceforth, the *ba*-construction has been subject to extensive research, from various perspectives (Zhang 2000, Wang 2001, Ye 2004, Kuo 2010).

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[1] Abbreviations used in this paper are listed as follows: BEI= passive marker, CL = classifier, DE = post-verbal resultative marker, LE = perfective marker or sentence-final particle, Lv = light verb.

Not every SVO sentence can be rephrased using the *ba*-construction. Sentence (2b) with *ba* is unacceptable, because post-*ba* DPs have to be the affected entities (Huang et al. 2009, Zhang 2000). However, affectedness is a concept that is hard to pin down, especially when such a notion is implemented as a structural constraint.

(2) a.   wo xihuan zhe-ge wenti.
           I   like   this-CL question
           'I liked this question.'

     b. *wo ba zhe-ge wenti   xihuan-le.
           I   BA this-CL question like-LE
           'I liked this question.'   (Huang et al. 2009)

According to Sybesma (1999), there is a different type of *ba*-construction using causative *ba* rather than the aforementioned canonical *ba* (i.e. disposal *ba*). It is termed causative because a causer role seems to be assigned to the subject preceding *ba*, e.g. *jiu* 'wine' in (3a). However, Huang and colleagues (2009) argue that *ba* does not introduce a thematic role of its own based on the fact that not all causers are valid subjects in *ba*-construction sentences. As the intended reading in (3b) suggests, *the depressed feeling* can serve as a causer for *Lisi*'s intoxication, but it is not an acceptable subject to appear preceding *ba*. Huang and colleagues suggest that the subject in a *ba*-construction sentence needs to be thematically related to the predicate, but there is no detail on how the thematic relations are built.

(3) a.   na   san-da-wan   jiu   ba Lisi he-zui-le.
           that three-big-bowl wine BA Lisi drink-drunk-LE
           'Those three big bowls of wine got Lisi drunk.'

     b. *yumen   de xinqing ba Lisi he-zui-le.
           depressed DE mood   BA Lisi drink-drunk-LE
           Intended reading: 'The depressed feeling made Lisi drunk from drinking.'

This study attempts to integrate the semantic notion of affectedness into syntactic structures and investigate the constraints governing subjects in *ba*-construction sentences, by applying the force-theoretic approach proposed by Copley and Harley (2015).

1. Why a syntax-semantics approach
In this section, I will first point out the deadlocks confronting a purely syntactic approach to the Mandarin *ba*-construction, and then summarize relevant semantic interpretations of the *ba*-construction, which necessitates a syntax-semantics approach.
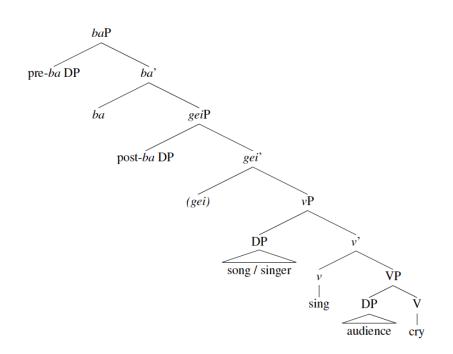
1.1 Why not a purely syntactic approach

A purely syntactic approach cannot account for argument variations in (4), if we strictly follow the Uniformity of Theta Assignment Hypothesis (UTAH), and the Predicate-Internal Subject Hypothesis (PISH), and assume a derivational analysis of the complex predicate *chang-ku* 'sing-cry'. UTAH requires each theta-role have a constant structural position (Baker 1988), while PISH hypothesizes that the external arguments are generated in the specifier of the lexical head with which they enter into a theta-relation (Koopman & Sportiche 1991).

(4) a. zhe shou ge   ba guanzhong (gei) chang-ku-le.
         this CL   song BA audience   GEI   sing-cry-LE
         'This song's being sung got the audience into tears.'

     b. zhe ge geshou ba guanzhong (gei) chang-ku-le.
         this CL singer BA audience   GEI   sing-cry-LE
         'This singer got the audience into tears by singing.'

This study does not attempt to resolve the debate over headedness of a verb resultative complex. We temporarily follow Cheng and Huang (1994) and Li (1990, 1999), in which V$_1$ of a V$_1$-V$_2$ predicate is the head. As illustrated in (5), the post-*ba* argument *audience* is generated as the complement of *cry*, but when the V$_1$ *sing* is involved, only one of the two theta-roles can be assigned, *singer* or *song*.

(5)

This violation of UTAH can be circumvented by assuming that *chang-ku* has two lexical entries in the lexicon, or that there is one more projection immediately above *v*P to accommodate *singer*, but neither assumption is desirable. The first assumption requires more evidence to demonstrate *sing-cry* in (4a) is a different lexical item from that in (4b), whereas the second assumption leaves it unanswered when and why a verb component can optionally assign theta-roles.

The aforementioned problems are trivial compared to the violation of Minimality (Rizzi 2001). To derive a *ba*-construction sentence, the two base-generated DPs need to undergo movements to be situated in pre-*ba* or post-*ba* positions. For the lowest DP *audience* to be raised to a higher position, it necessarily crosses the intervening DP *song/singer* or its trace. The same problems remain even if V_2 is the head of V_1-V_2 (e.g. Tai 2003). The minimality can be avoided only when the subject DP in a *ba*-construction sentence is base-generated as specifier of *ba*P as assumed in Huang et al. 2009 and Kuo 2011, although Huang and others also comment that *ba* does not license a theta role. It seems that the successful derivation of a *ba*-construction sentence may require muting of more than one syntactic assumptions, PISH, UTAH, etc. That is why this study moves away from a purely syntactic analysis of the *ba*-construction.

1.2 Causativity and the *ba*-construction

As mentioned in the introduction, two types of *ba*-construction sentences (disposal *ba* and causative *ba*) are differentiated based on semantic meanings. Ye (2004) tries a unified interpretation of *ba*-construction and claims that the primary meaning of *ba*-construction is causitivity. It represents a semantic relationship between two events, with one event as the cause and the other as the effect. A sentence using disposal *ba* can be analyzed similarly. In (1a), the object *huaidan* 'scoundrel' is definitely the one that gets disposed of or affected, yet it is also apparent that the disposal of the *scoundrel* is initiated/caused by the subject *Lisi*'s volitional action. The causitivity is witnessed more clearly in the meaning contrast of the two sentences in (5). Sentence (5a) adopts *ba*-construction, whereas (5b) is its SVO counterpart. According to Shen (2002), only the former encodes subjectivity and represents the standpoint of the speaker towards the event. When the subject DP *ta* 'he' is focused in (5a), it implies that *ta* should be held responsible for losing the key. The additional meaning of attribution further demonstrates the causativity in a *ba*-construction sentence.

(5) a. ta ba da-men-de yaoshi diu-le.
     he BA big-door-DE key   lose-LE
     'He got lost the key to the big door.'

   b. ta   diu-le da-men-de yaoshi.
     he   lose-LE big-door-DE key
     'He has lost the key to the big door.'

1.3 Affectedness in the *ba*-construction

It has been widely assumed that disposal *ba* sentences encode affectedness (Li & Thompson 1981, Liu 1997). Affectedness in a *ba*-construction sentence is further evidenced in its contrast with a verb-copying construction sentence like (6b).

(6) a. Lisi **ba** haizi da-de shou dou zhong-le.
       Lisi BA child hit-DE hand even swell-LE
       'Lisi hit the child so that (the child's) hands got swollen.'

    b. Lisi **da** haizi da-de shou dou zhong-le.
       Lisi hit child hit-DE hand even swell-LE
       'Lisi hit the child so that (Lisi's / the child's) hands got swollen.'

The two sentences in (6) have similar surface structures except that (6a) uses *ba* while (6b) has the lexical verb *da* 'hit', which is replicated to a subsequent V-*de* structure. *De* here is a marker for resultative, and the post- *de* clause represents the effect or result from the action *hitting*. *Lisi* here is the causer in both sentences, but only *haizi* in (6a) (e.g. the post-*ba* nominal) is the affected individual. In (6b), however, either the agent *Lisi* or the patient *haizi* can be the one affected. It is worth mentioning that Huang and colleagues (2009) believe sentence (6a) also allows ambiguous readings identical with (6b), but this paper insists that affected readings are only for post-*ba* nominals, which actually has corpus evidence. Wang (2001) conducts a corpus study on the possible affectees in *ba*-construction and verb-copying construction. He examines several Chinese novels amounting to 5 million words, and extracts all sentences with the two constructions. It is found that only 4 tokens violate post-*ba* nominals' interpretations as affectees. The four sentences all come from novels written by Laoshe. The tokens with violation are idiosyncratic at best, because they are not only sparse in number, but cease to be accepted by contemporary native speakers of Mandarin. In addition to disposal *ba*, typical causative *ba* sentences also imply affectedness, if not disposal. Take sentence (3a) for instance, the post-*ba* DP *Lisi* is the one who gets intoxicated/affected by alcohol.

Given the above discussion, a causitivity-affectedness approach can characterize all instances of *ba*-construction. Such an integrated approach also echoes Zhang (2001), which accounts for *ba*-construction in terms of image schema (Lakoff 1987). The basic structure [DP_1 + *ba* + DP_2 + (*gei*) + V + XP] encodes an event, in which DP_1 causes DP_2 to undergo some change indicated in XP, in the manner represented in V. The causer DP_1 provides the driving force for the change to happen. It seems that the Mandarin *ba*-construction is better characterized and defined by its semantic meanings, which cannot be captured by a purely syntactic approach. In the next section, I will introduce the theoretical basis of this study.
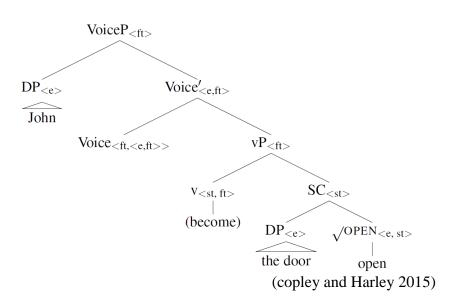
2. The force-theoretic framework

The force-theoretic framework (Copley and Harley 2015) originates as an alternative account for Accomplishment verbs like *open* in *John opened the door*. Traditional approaches take accomplishment verbs as composed of two sub-events chained together in a causal relationship, e.g. the causing sub-event e_1 *John's opening* and the result sub-event e_2 *the door's being open*. This chain is represented as $\exists e_1 \exists e_2: e_1$ CAUSE e_2. When it comes to a sentence like (7), the two-subevent analysis runs into problems, because no result subevent e_2 occurred.

(7)   Mary was painting the dresser black, but she did not finish.

In order to account for the non-culmination in (7), Copley and Harley (2015) develop a syntax-semantics interface theory of Accomplishments which draws on the notion of *force*. According to them, the verb *open* is understood as a force representing the energy input from a force producer; the force is inherently defeasible and thus entails no necessary effect. Semantically, forces are realized as a new type f(orce): <s,s>, denoting the function form an initial situation S_0 to a final situation S_1 that occurs if nothing external intervenes. For the sentence *John opened the door*, S_1 is encoded as s small clause [$_{SC}$ the door open], and S_0 is the situation immediately before S_1 with the door's readiness to be open. This sentence has a basic structure as in (8), with a light verb (become) representing the force leading to situation changes. The external argument *John* is ''introduced by a Voice head, which takes a predicate of forces as its complement and returns a function from individuals to forces'' (Copley and Harley 2015: 125).

(8)

VoiceP$_{<ft>}$

DP$_{<e>}$ Voice'$_{<e,ft>}$

John

Voice$_{<ft,<e,ft>>}$ vP$_{<ft>}$

v$_{<st, ft>}$ SC$_{<st>}$

(become)   DP$_{<e>}$ √OPEN$_{<e, st>}$

the door   open

(copley and Harley 2015)

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The force-theoretic framework is also applied to compositions of other Vendlerian eventuality types, based on the underlying conception that dynamaic predicates are forces while stative ones are situations. Such a treatment successfully captures non-culminated cases of accomplishment verbs.

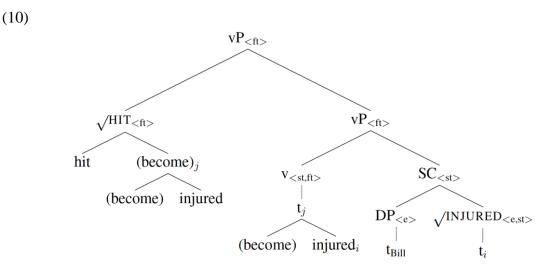## 3. A force-theoretic approach to the Mandarin *ba*-construction

This section first applies the approach to *ba*-construction with 'V$_1$-V$_2$' resultative complexes, and then extends it to *ba*-construction with V-*de* resultatives. It will be demonstrated that the Mandarin resultative constructions are compatible with the *ba*-construction in many ways. The approach can be applied to simplex predicates like *bing* 'sick' as well, following similar derivation processes. At the end of the section is a discussion on affectedness and its formal representation.

3.1 A force-theoretic framework to the *ba*-construction with 'V$_1$-V$_2$' resultatives

Most *ba*-construction sentences in Mandarin involve resulative construcitons, and sentence (9a) is one example using the resultative complex *da-shang* 'hit-injured'. Han (2017) demonstrates that such 'V$_1$-V$_2$' resultative constructions can be accounted for by the force-theoretic approach, although it only concerns itself with such sentences as (9b), the SVO countearprt of (9a). Resultative constructions are characterized by causing actions and result states/actions. A resultative complex 'V$_1$-V$_2$' necessarily invovles two distinct situations, an initial situation S$_0$ and a final situation S$_1$. The two situations are associated by the cause-and-effect relationship, with V$_2$ representing the new situation and V$_1$ encoding the force manner.

(9) a. John ba Bill (gei) da-shang   le.
John BA Bill GEI   hit-injured LE
'Bill was injured from john's hitting him.'

b. John da-shang-le   Bill.
John hit-injured-LE Bill
'Bill was injured from john's hitting him.'

For sentence (9b), V$_2$ *shang* 'injured' is the new situation concerning *Bill* whereas V$_1$ *da* 'hit' describes the way *Bill* got injured. The two arguments are interpreted in relation to the complex predicate rather than each individual verb component. In other words, the external argument *John* is the producer of the force making *Bill* injured, whereas the internal argument *Bill* is the force recipient. In the force-theoretic framework, sentence (9a) with the *ba*-construction is interpreted the same as its counterpart without *ba* (i.e. (9b)). Before the complex predicate is derived, the two sentences also share the same formal representation as in (10).

(10)

```
                          vP<ft>
                     /            \
              √HIT<ft>              vP<ft>
              /    \               /       \
           hit   (become)_j    v<st,ft>      SC<st>
                  /    \          |         /      \
           (become)  injured     t_j    DP<e>   √INJURED<e,st>
                              /      \     |          |
                        (become)  injured_i  t_Bill      t_i
```

A smal clause contains the new situation *Bill injured*; light verb (become) is a force evoking the situation change. The resultative complex 'hit-injured' is interpreted within a lexical-decomposition syntax, with both component verbs understood as verb roots. Here √HIT is a force manner adjoining to vP (become); semantically, the two are combined by Predicate Modification (Heim & Kratzer 1998). Assuming Distributed Morphology (Halle & Marantz 1993), √INJURED firstly undergoes head-movement to Lv (become); the intermediate outcome then combines with √HIT via m-merger (Matushansky 2006), driving the complex predicate *da-shang* 'hit-injured'.

What is merged with the higher vP is the optional *gei*, whose categorical status Is still under debate. As a lexical verb or a preposition, *gei* means 'give' or 'to'. The functional word *gei* often co-exists with *ba*-construction and appears in a pre-verbal position. The use of *gei* in a ba-construction sentence is optional; it does not cause changes to theta-role assignments and sentential meanings (He 2011, Ye & Pan 2014). Since *gei* shares some functions with the passive marker *bei* in Mandarin, it is sometimes taken as a passive marker, e.g. Xiong 2011. As pointed out in Shen & Sybesma 2010, *gei* is different from *bei* in that it can co-occur with intransitive verbs, as demonstrated in (12a). The use of *gei* introduces an external force to the situation/action represented by the subsequent predicate. Tang (2002) also agrees with the presence of external forces, but describes *gei* as an affectedness marker and structurally represented it as a light verb (become). *Gei*'s semantic function of introducing external forces is validated by its incompatibility with adverbials meaning 'by itself', as in (12b).

(11) Bill gei/bei da-shang   le.
      Bill GEI/BEI hit-injured   LE
      'Bill was hit injured.'

(12)　a.　xiao-niao gei/*bei　fei le.
　　　　　little-bird GEI/* BEI fly LE
　　　　　'The little bird flew away with an external reason.'

　　　b.　*xiao-niao gei ziji fei le.
　　　　　little-bird GEI self fly LE
　　　　　'The little bird flew away by itself.'

　　　　This study assigns an affected meaning to post-*ba* (also pre-*gei*) nominals; it is thus compatible with the treatment that *gei* is an affectedness marker. In contrast to Tang (2002), however, *gei* is not a light verb (become); otherwise, there will be two light verbs (become) in the structure for (9a), one for the complex predicate and the other for *gei*. As demonstrated in (13), *gei* is a head with its projection. It only selects for vP (become) as complement; in order to meet the EPP feature of *gei*P, the affected DP base-generated in the small clause is raised to the specifier position. *Gei*'s meaning of introducing external forces thus derives from *gei*'s selection requirement of complement and specifier.

(13)

　　　　In order to derive sentence (9a), the post-*ba* nominal *Bill* is first raised to the specifier of *gei*P. Then another functional head *ba* merges with *gei*P. The phrase *ba*P has force producer (e.g. *John* in (9a)) in its specifier position, which explains why pre-*ba* nominals are causers. Following Copley and Harley 2015 that force producers serve as specifiers of VoiceP, the head *ba* may be an overt representation of Voice head. A *gei*P can directly merge with functional heads like T(ense) as well. In that case, no force producer is introduced, forming sentence (11) with *gei*. Note that the *gei* head requires its specifier to be an affected entity. In a *ba*-construction sentence, the affected individual is usually base-generated in a small clause; it then gets raised to the specifier of *gei*. This accounts for the affected meaning associated with post-*ba* nominals.
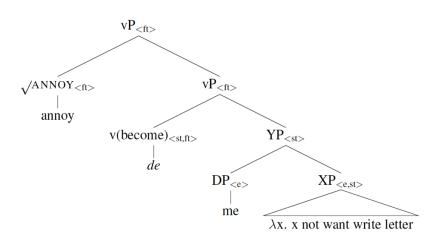
3.2 Explaining other types of *ba*-construction

　　　Predicates in the Mandarin *ba*-construction also adopt another type of resultative construction in the form of 'V- *de* + clause'. *De* as a lexical verb means 'gain'. When *de* occurs post-verbally, it is usually characterized as a suffix to the verb, and functions to introduce a resultative clause (Huang et al. 2009). In the example sentence (14), *wo* 'I' is the individual with a new situation of not wanting to write letters; this new state is driven by a force exerted by *ta* 'he', in the manner of irritation. The two arguments still represent force producer and force recipient respectively.

(14)　ta　ba　wo　(gei) qi-de　　bu　xiang　xie-xin　　le.
　　　he BA me GEI　annoy-DE not want　write-letter LE
　　　'He annoyed me so much that I didn't want to write the letter.'

　　　In Huang et al. 2009, V-*de* is a single compounding verb, which selects for a clause as complement and an affected DP as specifier. The embedded clause has *pro* as its subject; it is co-indexed with the affected DP with a new situation. The force-theoretic approach, however, pursues a lexical-decomposition syntax. As demonstrated in (15), the embedded clause is actually as a lambda abstraction, requiring later saturation by 'me'.[2]

(15)

　　　The functional head *de* takes in a situation <s,t> and returns a function of force; it seems that *de* is an overt representation of Lv (become). It is not surprising that the lexical *de* 'gain' is grammaticalized to a functional element indicating a change of states.

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[2] In (15), I use XP and YP and leave it an open question what the phrases are and whether it involves movements. It is possible that YP is a CP of topic, and X is IP; if so, we also need to assume that a topic can be raised beyond CP.
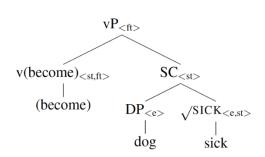
De is also subject to manner modification, e.g. by 'annoy'. Derivations above vP follow the example in (13), where *gei* only attracts affected DPs to its specifier position.

As demonstrated above, both types of Mandarin resultative constructions (RC) can be used as predicates in *ba*-construction. In a RC sentence, there are causing actions and result situations. Such a cause-and-effect relationship necessarily encodes one as force producer, and the other as force recipient undergoing the situation change. Since *ba*-construction sentences require post-*ba* DPs to be affected entities, i.e. with situation changes, Mandarin RCs are inherently compatible with *ba*-construction.

Not all *ba*-construction sentences use complex predicates as RCs, and simplex verbs are also used, like (16). Similarly, the affected entity 'dog' and its being sick is represented as a small clause <s,t>; the final verb form *bing-le* incorporates √SICK, Lv (become) and the aspectual feature [+perfective]. *Xiao-gou* 'little-dog', as an affectee, is raised to the specifier of *gei*P, while *ba* introduces the force producer *John* in a position of external argument.

(16) John bu xiaoxin ba xiao-gou gei bing-le.
      John not careful BA little-dog GEI sick-LE
      'The dog got sick due to John's carelessness.'

(17)

3.3 Encoding affectedness and causitivity

One of the problems in the introduction section is how affectedness in *ba*-construction is encoded. It is explicitly pointed out that *ba*-construction entails external forces (Tang 2002, Shen & Sybesma 2010). The advent of the force-theoretic framework provides a semantics-syntax framework to encode forces and affectedness. Stative predicates are situations and dynamic predicates are forces propelling situation changes. Affectedness is thus understood as a situation change, brought about by a force (mostly in a specific manner) exerted from force producer to force recipient. The roles of force producer and force recipient are only interpreted in relation to the complex event leading to the result situation. For instance, sentence (3a) may be interpreted as a causing action (i.e. *Lisi drinks wine*) and a result situation (i.e. *Lisi is drunk*). *Drink* in the causing action is a dynamic predicate and represents a force from *Lisi* to *wine*, but it is not the same

force leading to *Lisi*'s intoxication, which is exerted as a reaction force from *wine* to *Lisi*. Thus in (3a), *wine* is the force producer and *Lisi* is the force recipient.

In addition to (3a), the subject in (4a) is also inanimate, confirming that a force producer is not always voluntary/volitional, though it needs to be teleologically capable of generating the energy needed to produce a result situation (Copley & Harley 2015). The contrast of different external arguments in (4a) and (4b) further demonstrates that agents and causers are both included as force producers in *ba*-construction, and both are introduced by Voice heads represented by *ba*. Back to the question why 'depressed feeling' is not a valid subject in (3b), it can be explained from two aspects. On one hand, 'depressed feeling' is not teleologically capable of getting one drunk; on the other hand, 'depressed feeling' is not involved in (hence incompatible with) the causing action represented in the component verb *he* 'drink'.

4. Conclusion

This paper presents a re-analysis of the Mandarin *ba*-construction, following the force-theoretic framework in Copley & Harley 2015. Based on previous research, we first demonstrate that *ba*-construction embodies both causitivity and affectedness. Causativity refers to the role played by pre-*ba* DPs in producing changes of states, and affectedness is associated to post-*ba* DPs that undergo the changes of states. The force-theoretic approach can successfully account for *ba*-construction sentences with resultative either in the form of 'V₁-V₂' or 'V-*de* + clause', and those sentences with simplex predicates. It is found that such a semantics-syntax approach can structurally encode the affectedness as change of situations, and provide a unified analysis for agents and causers in pre-*ba* positions. Post-*ba* DPs are the affected entities experiencing situation changes, which arise from force exertion. Pre-*ba* DPs are force producers that generate the energy to cause the situation changes. Both agents and causers can be interpreted as force producers and are uniformly introduced by Voice heads represented by *ba*. This analysis confirms the prediction in Copley & Harley 2015 that ''argument structure is insensitive to any distinction between agents and causers, in particular, the ability to represent goals intensionally''.

REFERENCES

BAKER, MARK CLELAND. 1988. *Incorporation: A Theory of Grammatical Function changing*. Chicago, IL: University of Chicago Press

CHENG, LISA LAI-SHEN, and C.-T. JAMES HUANG. 1994. On the argument structure of resultative compounds. *In honor of William S-Y. Wang: interdisciplinary studies on language and language change*, ed. by Matthew Y. Chen and Ovid J. L. Tzeng, 187-221. Taipei: Pyramid Press.

COPLEY, BRIDGET, and HEIDY HARLEY. 2015. A force-theoretic framework for event structure. *Linguist and Philosophy* 38.103-158.

HALLE, MORRIS, and ALEC MARANTZ. 1993. Distributed Morphology and the pieces of inflection. *A view from Building 20*, ed. by K. Hale and S. J. Keyser, 111-176. Cambridge, MA: MIT Press.

HAN, PENG(BENJAMIN). 2017. A force-theoretic approach to Mandarin single-clause resultative constructions. *Proceedings of the 2017 CLA*, ed. by Andrew Alexander Monti. Canadian Linguistic Association.

HE, YUANJIAN. 2011. *Xiandai hanyu shengcheng yufa* [Generative grammar of modern Chinese]. Beijing: Beijing University Press.

HUANG, C.-T. JAMES; YEN-HUI AUDREY LI and YAFEI, LI. 2009. *The syntax of Chinese*. Cambridge: Cambridge University Press.

KOOPMAN, HILDA, and DOMINIQUE SPORTICHE. The position of subjects. *Lingua* 85.211-258.

KUO, PEI-JUNG. 2010. Transitivity and the *ba*-construction. *Taiwan Journal of Linguistics* 8(1).95-128.

LAKOFF, GEORGE. 1987. *Women, Fire and Dangerous Things: What Categories Reveal About the Mind*. Chicago, IL: University of Chicago Press.

LI, CHARLES N, and SANDRA A. THOMPSON. 1981. *Mandarin Chinese: a functional reference grammar*. Berkeley: University of California Press.

LI, JINXI. 1924. *Xinzhu guoyu wenfa* [New grammar of national language]. Shanghai: CP.

LI, YAFEI. 1990. On V-V compounds in Chinese. *Natural Language and Linguistic Theory* 8.177-207.

LI, YAFEI. 1999. Cross-componental causativity. *Natural language and Linguistic Theory* 17.445-497.

LIU, FENG-HSII. 1997. An aspectual analysis of *ba*. *Journal of East Asian Linguistics* 6. 51-99.

MATUSHANSKY, ORA. 2006. Head movement and linguistic theory. *Linguistic Inquiry* 37 (1). 69-109.

RIZZI, LUIGI. 2001. Relativized Minimality Effects. *The handbook of contemporary syntactic theory*, ed. by Mark Baltin and Chris Collins, 89-110. Oxford: Blackwell Publishing.

SHEN, JIAXUAN. 2002. Ruhe chuzhi 'chuzhishi'? Lun baziju de zhuguanxing [Can the disposal construction be disposed of? On the subjectivity of *ba*-construction in Mandarin Chinese]. *Zhongguo yuwen* [Chinese Languages] 5.387-399.

SHEN, YANG, and RINT SYBESMA. 2010. Jufa jiegou biaoji gei yu dongci jiegou de yansheng guanxi [On the marker *gei* and its relation to the derivation of VP structure]. *Zhongguo Yuwen* [Studies of the Chinese Languages] 336(3).222-237.

SYBESMA, RINT. 1999. *The Mandarin VP*. Dordrecht: Kluwer Academic Publishers.

TAI, JAMES H-Y. 2003. Cognitive relativism: resultative construction in Chinese. *Language and Linguistics* 4. 301-316.

TANG, SZE-WING. 2002. Hanyude gei shibushi yige beidong biaoji? [Is *gei* in Mandarin a passive marker?]. *Hanyu yufa yanjiude xintuozhan* [New expansion of the Chinese grammar], ed. by L xu and J Shao, 331-341. Hanzhou: Zhejiang Education Publishing Group.

WANG, HONGQI. 2001. Dongjieshi shubu jiegou zai baziju he chongdongju zhong de fenbu [On the distribution of the V-R items in the *ba*-construction and the verb-copying construction]. *Yuwen yanjiu* [Chinese Studies Research] 1.6-11.

WANG, LI. 1954. *Zhongguo yufa lilun* [Theory of Chinese grammar]. Beijing: Zhonghua shuju.

XIONG, ZHONGRU. 2011. Beidong fanchou gei de jufa tezheng [The syntactic-semantic properties of the passive category *gei*]. *Xiandai waiyu* [Modern Foreign Languages] 34.119-126

YE, KUANG, and HAIHUA PAN. 2014. The syntactic nature of *gei* in the *ba*-construction. *Foreign Language Teaching and Research*. 46(5).656-665.

YE, XIANGYANG. 2004. Baziju de zhishixing jieshi [A causative interpretation of *ba*-construction]. *Worldwide Chinese Language Teaching* 2.25-39.

ZHANG, BOJIANG. 2000. Lun baziju de jushi yuyi [On the meaning of the *ba*-construcion]. *Yuyan yanjiu* [Language Research] 38.1-13

Copulas and the Class of Copular Constructions in a Cross-Sinitic Perspective

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This paper motivates the claim that the copula verb *xi* should be treated on a par with the empirically better described copula verb *shi* in Sinitic syntax. Based on fieldwork, the constructions in which the copula appears are investigated for a set of five Sinitic languages. The comparison demonstrates that the copular clause construction and the cleft construction inter-correlate in a robust way. This lends preliminary support to a theory positing an underlyingly identical syntactic structure for both constructions. Furthermore, the availability of particles in cleft constructions warrants a reexamination of treatments on cleft exhaustivity in Sinitic semantics.

1. Xi in Sinitic languages: the reinstatement of a marginalized copula

Yue-Hashimoto (1993), drawing upon Wang (1940)'s pioneering observation, articulates that Sinitic languages fall into two groups based on the copulas being employed: Cantonese and Hakka use a *xi*-type copula, that is, a cognate of the Classical Chinese copula verb *xi* 係. In contrast, the other Sinitic languages employ a cognate of *shi*. This purported restricted distribution of the *xi*-copula led many authors to assume that *xi* did not develop fully in Classical Chinese, and its current productivity in Cantonese/Hakka is a case of language-specific innovation.

Some evidence has been proposed with regard to this observation. For instance, the Gan language, which has close affinity with Hakka, is argued to be a *shi*-type language (e.g. Li & Zhang 1992; Tang 2009). Tang (2009) draws upon Li & Zhang's (1992) fieldwork survey and claims that an opposition obtains between Hakka and Gan in negative copular clause constructions: *m-he* 'NEG-XI' constructions occurs exclusively in varieties of Hakka. By contrast, negative copular clauses with negative morpheme *bat* or *mao* are found in Gan varieties. The conclusion Tang draws is that the Hakka *xi*-copula is most likely a recent innovation that arises due to close contact with Cantonese. Combined with the fact that *xi* is close to defunct in modern colloquial Mandarin, Tang concludes that the Middle Chinese copula verb *xi* clearly lost out in a competition with the other copula verb *shi* in all descendant languages (i.e. Sinitic) but the Cantonese/Hakka group.

Zhang & Tang (2011) further argue that the copula *xi* is grammatically more impoverished. They claim that the syntactic distributional environment of Cantonese *hai* is more restricted than that of Mandarin *shi*. For one thing, *hai* may only be flanked by

two NP arguments, instead of other categories. Furthermore, the two flanking NP arguments tend to denote concrete (non-abstract) entities.

Partly due to these claims, the *xi*-copula has garnered very little attention, compared with the *shi*-copula. However, a truly watertight conclusion about the lack of *xi*-copula verb in Sinitic languages should await empirical investigations of Sinitic varieties with a large enough sample, or at least an exhaustive chronicling of all the major Sinitic languages, which to this date has not been done. In many field studies of Sinitic varieties, the copula verb is either ignored, or to the extent that it is reported at all, simply presumed to be of the *shi*-type. Thus, in Hui Chinese, the copula verb, phonemically transcribed as ɕi, is mentioned as the analog of Mandarin *shi*, even though it can be seen elsewhere that the Hui equivalent of *shi* has a distinct pronunciation (*si*).[1]

2. Toward a geography of copula types in Sinitic languages

This paper sets about testing previous claims about the *xi*-copula. As a pilot study, the task is established such that one representative dialectal spot is designated for each of ten Sinitic languages.[2] A minimum of three native speakers is consulted for each spot (local residence, no immigration history). The copula in question is further cross-checked with the phonetic realization of the etymologically related morpheme that forms part of the compound meaning 'connection, relation' (i.e. the morpheme *xi* in *lianxi* or *guanxi* in Mandarin). The consultants' self-reports are compared with recordings and online chat records to the extent available.[3]

The elicitation results constitute a first approximation towards a typology of Sinitic copula types, illustrated in Table 1. The place name given in the parenthesis stands for the representative dialectal spot of the relevant Sinitic language elicited. A practical transcription scheme is adopted in Table 1 and throughout this paper. The

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[1] Yue-Hashimoto feels necessary to qualify her claim by noting that the Jiahe dialect of the Xiang language uses both *shi* and *xi* for the copula. She believes that language contact may play a role, as this dialect might be influenced by the neighboring Hakka or Cantonese dialects. However, she still believes that there are differences of stratum, and the *shi*-copula forms the substrate for the Jiahe dialect. My general survey, on the other hand, suggests a much broader distribution of the *xi*-copula.

[2] Sinitic languages have been argued to number between ten to thirteen or fourteen (Norman 1988; Tang & van Heuven 2007; Handel 2015). My classification is based on the conservative view adopted in *The Chinese dialect atlas* (1987) and Ethnologue's *Languages in China* (18th edition).

[3] My data combine oral corpora of spontaneous speech (several hours of conversation and storytelling recordings during my fieldwork) with elicited native speaker reports. Such self-built corpus is then manually phonemically transcribed and parsed. In each corpus, I manually exclude non-syntactic tokens of the copula morpheme (in most cases, this means occurrences of the copula morpheme as a component of compound words, e.g., *dan-shi* 'however', *yu-shi* 'then'). The remaining occurrences are further categorized into several construction types analyzed below.

Mandarin data are transcribed using the standard pinyin system. The Cantonese data are transcribed using the Eitel Cantonese Romanization scheme, one of the official Romanization schemes used in Cantonese-speaking regions. Broad phonemic transcriptions are used for other Sinitic languages, given the lack of unanimous Romanization programs to follow.

Type of copula	Language (dialectal spot): copula form
shi-type	Jin (Pingyao): *shi*
	Mandarin (Beijing): *shi*
	Min (Southern Min: Quanzhou): *si*
	Wu (Shanghai): *si*
	Xiang (Xiangtan): *si*
xi-type	Cantonese (Hong Kong): *hai*
	Gan (Fuzhou): *ɕi*
	Hakka (Wuhua): *hɛ*
	Hui (Wuyuan): *ɕi* (*xi*-type)/*si* (*shi*-type)
	Ping (Binyang): *hai*

Table 1 *Grouping of Sinitic languages by copula type*

Apart from Cantonese and Hakka, Fuzhou Gan, Wuyuan Hui and Binyang Ping also use the *xi*-copula consistently.[4] Furthermore, the observation by Tang (2009) that languages such as Gan have no negative copular constructions is also not supported by my fieldwork findings, where all language varieties that bear a *xi*-copular clause allow modification of the *xi*-copula by a negation verbal modifier (e.g. Ping: *mou-xai*; Gan: *baʔ-ɕi*; Hui: *pu-ɕi*).

Figure 1 illustrates the geographical distribution of *shi*-type languages versus *xi*-type languages (gray: *shi*-languages, red: *xi*-languages).

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[4] For example, in Fuzhou Gan, only 2 tokens using *si* are identified in recorded speech, against an aggregate of 24 *xi*-tokens. Both tokens take the form of the phrase *zun si*, where the copula *si* is modified by a quantificational adverbial *zun*. Importantly, *zun* sounds archaic to the native Gan speakers I consulted. The more colloquial alternative adverbs are *toi* 'all'.

Type of copula verb languages within Chinese dialect groups:
Shi-type:
Mandarin (Beijing)   *SHI* (Li & Tompson 1981)
Jin (Pingyao)   *SHI* (Hou 1999)
Southern Min (Quanzhou) *SI* (Lin 1993)
Wu (Shanghai)   *SI* (Zee & Xu 2003)
Xiang (Xiangtan)   *SI* (Zeng 2001)

Hai-type:
Gan (Pingxiang)   *HE* (Wei 1990)
Hakka (Minxian)   *HE* (Hashimoto 1973)
Hui (Tunxi)   *HI* (Lu 2002)
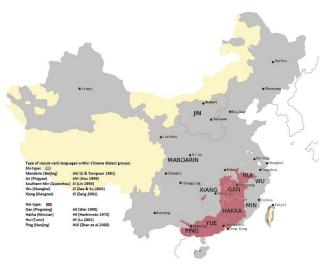Ping (Nanjing)   *HAI* (Zhan et al.2000)

Figure 1 *Geography of copulas*

The current pilot study thus suggests that while Sinitic languages indeed exhibit an opposition between a *shi*-type subgroup and a *xi*-type subgroup, the distribution of the *xi*-subgroup is not limited to Cantonese and Hakka, but is broader than previously assumed. The geographical distribution identified in this study, where all *xi*-languages are mutually adjoining, is indicative of an areal feature that results from language contact. While the identification of a linguistic area characterized by the use of the copula *xi* does not invalidate the postulation of *shi*-languages' predominance, it does lead us to modify the assumption that the Middle Chinese copula *xi* has all but disappeared from most Sinitic languages except for a residual use in Cantonese, or that the copula property of *xi* is a Cantonese-specific innovation. It seems more plausible to assume that the *xi*-copula was fully productive in Middle Chinese up to its split into its daughter languages. This productivity was retained in the South Sinitic languages that maintained close contact with one another, yet was gradually lost in the North Sinitic languages.[5] In short, it seems that modern daughter languages of Classical Chinese opt for one single copula morpheme, while the other copula morpheme inherited from the ancestor language tends to be demoted. At present, this finding highlights the need to put the *xi*-copula on an equal footing with the *shi*-copula in typologically-oriented studies on comparative dialectal grammar. Thus, the investigation below serves the empirical purpose of chronicling for the first time the syntactic distribution of the constructions where copula *xi* occurs from a comparative and typological perspective. Apart from empirical reasons to investigate the

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[5] Alternatively, it is also possible to think of the *xi*-copula as of indigenous origin in South China. That is, the *xi*-copula was initiated in South Sinitic languages and was subsequently spread to North China. The northbound *xi*-copula lost out in competition to the more prevalent *shi*-copula, but remained productive in regions of its origin. At present, I am aware of no good way to determine between these two scenarios. A concerted effort, combining textual/archival research and fieldwork at a micro-level, is needed to shed light upon this distribution pattern in the future.

xi-type languages, valuable insights can be drawn from a comparative perspective on the distributional environments of constructions bearing the copular morpheme *xi* vis-à-vis *shi*. As both copulas evolved independently, comparing their distribution in modern daughter languages enables us to tease apart etymological and historical coincidence, and explore to what extent variation exhibits itself within the two language groups. Consequently, it also enables us to formulate certain hypotheses regarding the structural relation between copula-like constructions.

3. Toward a first approach to the distribution of the copula-class constructions

In this section, I investigate the syntactic distribution environment of Mandarin and four *xi*-type Sinitic languages (Hakka is left out due to lack of access to data). The first construction type involves the copular clause construction exemplified by copulative sentences such as the following.[6]

(1)　　a.　*Cantonese predicational copular clause*
　　kui hai　　kingkek　　　ke yattoi　　　tsungsi.
　　he COP　　Peking.Opera REL a.generation giant
　　　　　　'She said: He is a giant in his generation of Peking Opera.'
　　　b.　*Cantonese specificational copular clause*
　　　　　Nei　yeungyeung tau　　ho: patkwo ngo tsungyi ke　　hai　　Tongtong.
　　You everything PRT　　good yet　　I　　love　REL COP　　Tongtong
　'Everything about you's good, but the girl I am in love with is Tongtong.'

A more accurate characterization would be to treat copular clauses as a family of mutually related constructions. Thus, (1a) illustrates a predicational copular clause, in which the pre-copula subject is entity-denoting, and the post-copula predicational complement denotes a property that is applied to the subject (Higgins 1979; Mikkelsen 2005). In (1b), the pre-copula subject is property-denoting, predicated of the post-copula referential complement.

The homogeneity exhibited between the *shi*-type and the *xi*-type Sinitic languages is unsurprising, given that the family of copular clause constructions is generally analyzed to be, in Construction Grammar terms, underlied by a single overarching copular clause construction type, and, in generative terms, a family of transformationally derived structures.

Aside from copular clauses, the second syntactic distributional environment of the *xi*-copula involves the (term) cleft construction. In keeping with much previous syntactic

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[6] Glossing in this paper follows the Leipzig Glossing Rules, including the following abbreviations:
ADV: adverbial, COP: copula, FOC: focalizing particle, CLF: classifier, DECL. PRT: declarative particle, DIST: distributive operator, EMP: emphatic morpheme, NEG: negation morpheme, NOM: nominalizer, PASS: passive morpheme, POSS: possessive, PRT: particle, REL: relativizer.

literature on clefting in Chinese syntax, a cleft construction in Sinitic languages is identified as a structure that includes a linear sequence of two post-copula parts (Shyu 1995; Simpson & Wu 2002; Cheng 2008; Paul & Whitman 2008; Hole 2011). The immediately post-copula clefted phrasal constituent (an argument or adjunct) encoding information-new sentential focus is followed by an open sentence (predicate) that encodes information-old backgrounded content. Cantonese example is provided below.[7]

(2) a. *Cantonese argument-cleft*
      Zhe-jian shiqing [shi   Zhangsan] fuze.
  This-CLF affair   COP   Zhangsan in.charge,
      'It is Zhangsan who is in charge of this matter.'
  b. *Cantonese adjunct-cleft*
      Zhangsan   [shi   zuotian]   lai   de.
  Zhangsan   COP   yesterday come DE
  'It is yesterday that Zhangsan came.'

A further characteristic of the cleft construction is the optional presence of a pre-copula constituent that functions as frame-setters or discourse topics (Hole 2011). The topical status can be demonstrated via the attachment of a discourse-level suffixal particle to the pre-copula constituent, which is independently shown to be unacceptable when the host constituent is non-topical (Xu 2000; Xu & Liu 2007; Constant 2014). A final diagnostic of clefts has to do with the exhaustive nature of focus semantics, illustrated among other things by the incompatibility with an additive reading. In (3), a continuation involving an additive adverb *jitdou* 'also' leads to unacceptability, which can be accounted for if the cleft sentence requires an exhaustiveness interpretation.

(3) *Cantonese*
    #Keoidei hai   camjat   tai   dinjing, gamjat keoidei jitdou tai   dinjing.
     They   COP   yesterday watch movie, today they   also watch movie
    #'It was yesterday that they watched a movie. They also watched a movie today.'

In Mandarin, clefting strategy may be achieved with what is termed a bare *shi*-cleft, schematized as [(*topic*)+*shi*+*clefted constituent*+*open sentence*] without any overt particle attached to the open sentence. Alternatively, the clefting strategy in Mandarin

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[7] Unlike English or other Sino-Tibetan languages such as Burmese, cleft constructions in Chinese do not involve overt cleaving, in that the copula morpheme does not overtly partition the focused constituents (e.g., *Zhangsan* in 2a) from the backgrounded materials (e.g., *fuze* 'to take charge' in 2a) (cf. Erlewine 2016). However, I follow Hole (2011) and Hole & Zimmermann (2013) in assuming that languages vary in whether the partitioning between focused and backgrounded materials is achieved in overt or covert syntax, with Sinitic languages falling into the latter category.

may be achieved by a periphrastic [*shi* V O *de*] construction. Furthermore, in Northern varieties of Mandarin, a periphrastic construction is often used in parallel with the above-mentioned [*shi* V O *de*] construction (that is, the particle *de* is placed in between the verb and its object NP).

(4) a. Mandarin [*shi* V O *de*] construction
         Zhangsan   shi   zuotian   lai   **de**.
     Zhangsan   COP   yesterday come DE
     'It is yesterday that Zhangsan came.'
     b. Mandarin [*shi* V de O] construction
         Wo shi   xie-**de**   shi.
         I   COP   write-DE poems
         'It is poems that I wrote.'

In Mandarin clefts, the presence of the *de*-particle has been argued to be the locus of exhaustivity. A characteristic of Sinitic languages of the *xi*-type is that analogs of the Mandarin *de*-particle is omissible where *de* is obligatory in Mandarin. First, an intervening of the *de*-like particle in between a predicate and its object is disallowed in these Sinitic languages. [*hai* V *ge* O] is not possible, where *ge* functions similarly with Mandarin *de*-particle (Tang 1998; Cheung 2007; Tang 2005; Wakefield 2010; Matthews and Yip 2013). Compare the Cantonese data in (5a) with the Mandarin data in (5b):

(5)   a.   Cantonese
             *Keoidei hai   cammann tai   **ge** bo.
             They   COP   last.night watch   GE ball.game
             'It was last night that they watched the game.'
         b. *Mandarin*
             Tamen shi zuowan   kan   **de** qiu.
             They   COP last.night watch   DE ball.game
             'It was last night that they watched the game.'

Second, sentence-final *ge* or *gaa* (a fused morpheme of *ge* and *aa*) is witnessed, but unlike Mandarin their appearance is optional, and omission of particles still maintains acceptability of the cleft sentence, illustrated by the following contrasts.

(6)   a. *Cantonese*
             Keoidei hai   camjat   tai   dinjing {ge/gaa}.
             They   COP   last.night watch   movie {GE/GAA}
             'It was last night that they watched movies.'
         b. *Mandarin*
             Tamen shi   zuowan   kan   dianying *(de).

    They COP   last.night watch movie   *DE
    'It was last night that they watched movies.'

(7)   a. *Cantonese*
        Toifung fungkau hai   jau tinmantoi   fatfung {ge/gaa}.
        Typhoon wind.ball COP   by Observatory   release {GE/GAA}
        'It was by the Observatory that the typhoon wind ball was released.'
    b. *Mandarin*
        Taifeng   fengqiu   shi you   tianwentai   fafang *(de).
        Typhoon   wind.ball COP by   Observatory   release *DE
        'It was by the Observatory that the typhoon wind ball was released.'

Examples in (8) involve a different type of construction containing the copula morpheme *xi*. Instead of a partition between informationally prominent (focused) and backgrounded components, an entire clausal argument, which follows the copula morpheme, is conveyed as new information.

(8)   a. *Mandarin*
      Ta mei   gen wo dazhaohu, wo juede shi ta mei   renchu   wo lai.
      He NEG-PRF   with me greet,   I   think COP he NEG-PRF recognize me out
      'He didn't greet me, do you think it's that he failed to recognize me?'
    b. *Ping*
      na mou-jou hat-løk   hak tankun,   kø ŋø tsaktak ɕi na mou touŋø   kua
    He NEG-PRF eat-finish box egg.roll, then I think COP he NEG hungry MOD-PRT
      'He didn't finish that box of egg roll, and so I think it might be that he wasn't hungry.'

Statements such as (8) function as a propositional assertion (Hole 2011), in which the copula marks the entire proposition denoted by the clausal argument as focused material. Several diagnostics can be drawn upon to motivate the case that in (8), the entire post-copula clause represents a new propositional assertion. For instance, (8a) is felicitously uttered as an answer to the QUD: *why didn't he greet you*? The post-copula clause is construed as a propositional answer to the *why*-question (i.e. construed as an implicit *because*-clause as explanation).[8] Next, if A's answer is negated by another speaker, as in B's answer. The negation has to be construed as negating the asserted content, which provides another way to diagnose what is asserted. As we can see, B's continuation is felicitous if the negation is followed by an alternative explanation of the QUD, demonstrating that what is asserted in A's answer is the entire propositional

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[8] I assume Belnap's (1969) view that the answer of a *why*-question relates a proposition to another proposition that serves as the former's explanation. That is, it encodes a binary causal relation between propositions (see also Scheffler 2005).

content as an explanatory because-clause. If B's negation is followed by replacing him with another individual (9), the continuation becomes infelicitous.

(9) *Mandarin*
    QUD: Weishenme ta mei gen ni dazhaohu?
    A: Xiao Zhang mei   gen   wo dazhaohu, wo juede shi ta   mei   renchu
       Xiao Zhang NEG-PRF with me   greet,   I think COP he NEG-PRF recognize
       wo lai.
       me out
       'Xiao Zhang didn't greet me, I think it's that he failed to recognize me.'
    B: Ni cuo-le.   Ta tai congmang-le.
       You be.wrong-PRF.   He too be.hurry-PRF
       'You are wrong. (It's that) he has been too much in a hurry.'
    B: #Ni   cuo-le.   Xiao Wang   mei renchu   ni lai.
        You be.wrong-PRF. Xiao Wang NEG recognize you out
        'You are wrong. (It's that) Xiao Wang didn't recognize you.'

In addition, a copula may mark a predicate denoted by an open sentence as newly asserted material. In this construction, a topic-suffixed constituent precedes the copula, and unlike proposition assertion this constituent serves a frame-setting function and is informationally separated from the rest of the proposition (the open sentence) by encoding information already familiar to the interlocutors.

(10)   *Gan*
      ŋo [ɕi   tʰiŋ pʰjɛʔɲinka wasɨ], ŋo tsɨkan puʔ ɕjɛwtɛʔ   laŋ pan.
     I   COP follow others   decide, I self NEG know   how act
    'What I do is listen to others giving orders. I have no idea how to do this.'

The frame-setting function of the pre-copula constituent is made clear in a typical context where its referent is already salient in immediately prior discourse. Similar to propositional assertion, we can diagnose that the post-copula predicative part represents what is asserted, as it is the content that negation targets.

(11)   *Mandarin*
    A: Benlai-ne   Xiao Zhang shi   dasuan liu zaijia.
       Initially-TOP Xiao Zhang COP plan   stay at.home
       'Initially, Xiao Zhang was planning to stay at home.'
    B: Ni cuo-le.   Ta dasuan qu KTV wan.
       You be.wrong-PRF.   He plan   go KTV play
       'You are wrong. He was planning to go to a KTV.'
    B: #Ni cuo-le.   Xiao Wang   dasuan liu zaijia.
       You be.wrong-PRF. Xiao Wang   plan   stay at.home

'You are wrong. Xiao Wang was planning to stay at home.'

Another environment a copula may appear in involves what is termed by the literature as the A-not-A question: the copula occurs in a reduplicative form, with a negative morpheme inserted in between two identical copies of the copula. In resemblance to a term cleft construction, an A-not-A question may similarly mark a term focus that appears immediately after the reduplicative copula-negation-copula form, shown in (12).

(12)   a. *Cantonese*
          Toifung fungkau hai-m-hai jau tinmantoi fatfong?
          Typhoon wind.ball COP-NEG-COP by Observatory release?
          'Is it the case that the typhoon wind ball is released by the Observatory?'
       b. *Mandarin*
          Zuowan   neixie dianhua   xi-mao-xi   ni da gei wo de?
          Last.night those   phone.calls COP-NEG-COP you call to me DE?
          'Those phone calls last night, is it the case that you made them to me?'

What is more, both predicate-level assertion and proposition-level assertion find corresponding reduplicative A-not-A questions, demonstrated as follows.[9]

(13)   **Proposition assertion**

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[9] The question of whether the A-not-A question where the copula is reduplicated is syntactically derived from a declarative assertion sentence is subject to controversy, as A-not-A questions do not always converge with assertion sentences. For example, positive assertion is not felicitous where a reduplicative question is felicitous.
(i) a. ?Shi ta genben   jiu   bu   xiang bang ni.
       COP he definitely PRT   NEG   want.to help you
       'It's that he definitely doesn't want to help you.'
    b. Shi-bu-shi   ta genben jiu   bu xiang bang ni?
       COP-NEG-COP he definitely PRT NEG want.to help you
       'Is it that he definitely doesn't want to help you?'
Secondly, reduplicative question infelicitous when a sentence-final particle is attached:
(ii) a. Ta shi xiang bang ni de.
        He COP want.to help you DE
        'It is the case that he wants to help you.'
     b. ?Ta shi-bu-shi   xiang   bang ni de?
        He COP-NEG-COP   want.to help you DE
        'Is it the case that he wants to help you or not?'
Moreover, reduplicative question allows for multiple occurrence of *shi*:
(iii) Shi-bu-shi   ta shi zhunbei liu xialai de?
      COP-NEG-COP   he COP plan.to stay down DE
      "Is it the case that he planned to stay?'

Cantonese

Keoi mou tung ngo daziufu, nei lam hai-m-hai   keoi mei jingceut ngo lai?

He NEG with me greet, you think COP-NEG-COP he NEG-PRF recognize me out

'He didn't greet me, do you think it's that he didn't recognize me?'

(14) **Predicate assertion**

Gan

Nei ɕi-puʔ-ɕi   moŋ   paŋ   ŋo pan tan koi-tɕʰjɛn sɨ   koʔ

You COP-NEG-COP hope.to help me achieve DEM-CLF matter PRT?

'Is it the case that you are willing to help me accomplish this matter?'

The rest of this section deals with copula-class constructions that exhibit variation among Sinitic languages. In Mandarin, Hui and Gan, the copula allows for what is termed by Li & Thompson (1989: 151-154) as the emphatic construction. In this use, the copula precedes a predicate and the predicate must encode a piece of familiar information that appears in prior discourse. Thus, sentence (15) must be uttered in a context that affirms what has been said earlier or what has been suspected or inferred by the interlocutors (example provided in Li & Thompson 1989).

(15) *Mandarin*

A: Wo xiang ta hen   qiong,   suoyi bu ken   shang guanzi.

   I think he intensifier be.poor, so   not willing.to go.to restaurants.

B: Ta   shi   mei   qian,   keshi you   zhiqi.

    He   EMP   not.have money, but   have   principles

'A: I thought he got no money, so he wouldn't dine out.

 B: It's true that he got no money, but he got his pride.'

The surface distribution of the emphatic construction resembles a *shi*-introduced predicate assertion, however several behavioral characteristics serve to distinguish between these two distinct uses. First of all, emphatic *shi*-construction carries a special prosodic pattern, with a primary stress associated with the morpheme *shi*. In contrast, *shi* in predicate assertion is never stressed, whereas prosodic prominence is spread across the post-copula predicate (open sentence) (Wang 2011).

Secondly, prior familiarity is explicit or presumed. As (16) indicates, when the prior content under discussion cannot be ascertained, a *shi*-construction only receives a predicate assertion reading, and cannot be construed with an emphatic reading.

(16) *Mandarin*

A: Bu zhidao xingqitian tushuguan kaimen bu.

   NEG know Sunday   library   open   NEG.

B: Yinggai shi kaimen.   Ni keyi wangzhan shang cha.

   Should COP open.   You can website   LOC   look.up

'A: Not sure if the library opens on Sunday or not.

B: Should open. You can look it up on the library website.'

Thirdly, emphatic *shi* fits in with the behaviors associated with supplemental materials (Potts 2005), by exhibiting what is termed 'scopelessness', such that it fails to be interpreted within the scope of another scope-taking operator. For instance, it is not possible for an emphatic *shi* to be embedded under negation.

(17) *Mandarin*
#Bu   shi   hen   taoyan.
NEG   COP   intensifier be.annoying
Intended: 'It is not the case that indeed/truly she is annoying. /It is not indeed the case that she is annoying (It's complicated./We cannot be positive yet).'

Note that the above sentence would become felicitous when interpreted as a simple assertion, in which it is denied that the annoying property is plainly predicated of said referent. In other words, while an assertive *shi* clearly allows itself to be embedded under negation, something special about an emphatic *shi* is blocking this scoping-under reading. Similarly, emphatic *shi* cannot be embedded under a modal operator. The following sentence only receives a predicate assertion reading, not an emphatic reading.

(18) *Mandarin*
Yinggai shi hen taoyan.
Possible reading: 'It is possible that (she) is annoying.'
Impossible: 'It is possible that it is indeed the case (truly) that (she) is annoying.'

In Hui, which employs both a *shi*-copula and a *xi*-copula. Importantly, *shi* occurs for an emphatic construction, whereas it is unacceptable to replace *shi* with *xi*, exemplified in the following contrast:

(19) *Hui*
A: i-phu   tɕiɐthɔtɕhie, n̩ pu ɕiɔtɔ ɵ iɐm tsi tɕikɔ   kɵtsĩ mɔ   ke.
   DEM-CLF   bicycle,   you NEG know I use PRF how.many price buy   PRT
B: ɕi ɕiɐpan   tsi itɔnĩ.
   COP unworthy PRF a.bit
'A: This bike, you wouldn't guess how much I paid to get it!
 B: True the price is a bit not worth it.'

Another construction, witnessed in Cantonese and Ping, expresses universal quantification. The copula morpheme, when followed by the maximality operator *dou*, yields a universal, 'no matter what' reading. As (20) demonstrates, the combination of the

copula morpheme and the *dou*-operator signals that the act or state denoted by the following predicate holds regardless of circumstances.

(20)   a.   *Ping*

        mat   na ɕi   tʰoŋ   mou sək   tsou?

        how.come you COP PRT   NEG know fault

        'How come he wouldn't admit it is his fault no matter what!?'

      b.   *Cantonese*

        Nei   hai   dou jiu   gik   haa ngo sin   hoisam!

        You   COP   PRT will   irritate a.bit me then   be.delighted

        'You would make me angry no matter what, and take delight in that!'

Finally, in Gan and Hui, *shi* appears as a conditional marker that is suffixed to an antecedent clause and connects it with the following consequent clause, as illustrated in the following Gan example.

(21)   *Gan*

        kɛ puʔ tʰʊŋji ɕi,   koi-tɕʰjɛn sɨ   tɕʰju pan   puʔ   tan tɛ.

        He NEG agree COP,   DEM-CLF affair then achieve   NEG   RES PRT

        'If he does not agree (to that), we won't be able to achieve that.'

Table 2 summarizes the distributional environments in Sinitic copula-class constructions.

	Mandarin	Cantonese	Gan	Hui	Ping
Copular clause	+	+	+	+	+
Term cleft	+	+	+	+	+
Propositional cleft	+	+	+	+	+
Predicate cleft	+	+	+	+	+
A-not-A question	+	+	+	+	+
Topic marker	-	-	+	+	-
Emphatic construction	+	-	+	+	-
Universal reading	-	+	-	-	+
Conditional marker	-	-	+	+	-

Table 2 *A taxonomy of copula distribution in Sinitic languages*

In sum, all Sinitic languages under survey converge in the pattern of copula distribution, in that they simultaneously occur in a family of (canonical) copular clause constructions, as well as focus-marking constructions such as term clefts (where the immediately post-copula term is focused) and broad assertions (where the entire post-copula clause or open clause is focused). Variation within these construction types lies in how liberal *de* and its analogs are licensed. A *shi*-type language (i.e. Mandarin) requires the presence of *de*-like particles for the exhaustivity reading to be available, whereas *xi*-type languages allow the absence of *de*-like particles while still retaining the exhaustivity reading. On the other hand, Sinitic languages diverge on a variety of constructions, i.e. constructions where the copula serves an emphatic, universal, conditional and topic-marking function.

4. Making sense

The different functions that the copula assumes in Sinitic languages have been independently observed to be crosslinguistically robust. Copulas tend to grammaticalize into dedicated topic markers, and vice versa (what is termed the 'Copula Cycle' by Lohndal 2009). Similarly, a robust bi-directional pathway obtains between a copula verb and a conditional clause marker, and speech act-level operators such as assertion particles tend to change into markers of affirmation and emphasizing (Heine & Kuteva 2002). It is thus plausible to assume that the different uses observed in this study are all to some extent related, and the multifunctionality of the copula is possibly developed from historical processes (e.g. reanalysis).

Importantly, though, it would be less than desirable to posit that the copular clause use and the emphatic use, which exhibits variation across the Sinitic languages, fall under a single, overarching lexical entry. Given that Mandarin and some *xi*-type Sinitic languages that do not feature an emphatic use of the *xi*-copula descend from the same common ancestor language, positing a single entry would commit us to theorizing that an innovation that takes place in Mandarin after the split has changed its parameter setting in a way that structurally unifies copular clause construction and emphatic construction. Since we have seen that in addition the topic marker construction, the conditional construction and the universal construction are witnessed in a subset of Sinitic languages, respectively, we would have to further posit that each Sinitic language may undergo its individual innovation so as to accommodate the variation. However, it would be unclear what independent evidence exists to justify these innovations. A more plausible solution would involve treating all these uses as distinct lexical entries. Given the semantic relatedness, the change from copular clauses to emphatic clauses represent a tendency that target certain Sinitic languages following the split, but not all the Sinitic varieties.

In contrast to this, things would be different given that the distribution of the following constructions exhibit no inter-language variation (regardless of *xi*-type and *shi*-type):

(22)   [copular clauses < --- > clefts < --- > broad < --- > A-not-A] (here < --- > is taken
        to mean that where the left side of the arrow is witnessed, the right side is also
        witnessed and vice versa)

The robustness of this pattern lends preliminary support for some structural homogeneity among said constructions. That is, clefts, broad clefts and A-not-A questions are underlyingly a copular structure. An alternative scenario, in which some neat reanalysis process applies indiscriminately to all these languages, is, albeit clearly possible, quite marked given the variation shown elsewhere.

Let us explore with some detail what a homogeneity analysis amounts to. In the Mandarin literature, propositional and predicate assertion have been treated as closely related to the informationally partitioned term cleft (referred to as 'broad clefts') (Cheng 2008; Paul & Whitman 2008; Hole 2011). Information-structurally, the bracketed CP brings discourse salience to a newly asserted proposition. Derivationally, Moro (1997) argues that *that John left* in (23a) resides in the same structural position within the copula *be*'s argument as a clefted phrase such as *John* in the *it*-cleft (23b).

(23)   a. (Speaker A realizes that Speaker B is upset and asks what is bothering him)
            B: It's not that John and I argued, it's [that John left].
        b. It's [John] that left.

In this sense, the example in (23a) may be viewed as having a clefted CP. Huber (2006) further observes that Swedish and French allow more liberal uses of maximally focused clefts than English, expressing propositions in contexts not limited to discourse starters/framers. It thereby raises the possibility that Chinese proposition assertion sentences (broad clefts) form part of a continuum of maximally focalizable clefts.

Despite the lack of partition, previous authors have proposed that the copula in both constructions perform a uniform discourse strategy of asserting the immediately post-copular element as discourse-new focus information, with free focus assignment of variable scope. When an entire proposition falls within the scope of focus assignment, the relevant *shi*-clause expresses a propositional (or predicate) assertion, stated as an update against a background of non-stated prior knowledge. This differs from the strategy of term clefts, where only part of the proposition carries focus information, leaving the rest of the proposition overtly expressed as backgrounded. The uniform approach to both constructions is further assumed under an overarching structural treatment, according to which the propositional argument in broad clefts occupies the same structural correlate as the focused constituent of a smaller unit (an NP argument or an adjunct) in term clefts.[10]

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[10] For instance, Cheng (2008) proposes that a clefted CP patterns together with a regular cleft phrase (NP/adjunct), both merging at the subject position of the small clause argument of the copula. See also Paul & Whitman (2008) for arguments against a uniform analysis of both types of clefts.

Another piece of evidence comes from diachronic pattern. Based on diachronic studies on Early Mandarin corpora (16th century to 19th century), it has been shown that the use of the copula morpheme *xi* in copular clauses, clefts and broad clefts have vanished side by side during the transition from Early Mandarin to Modern Mandarin (Jin 2016; Chen 2017). The coordinated decline pattern would be unsurprising if these construction types share the same copular structure. For a focus-based analysis of clefts, nevertheless, the pattern would be mysterious, as the copula morpheme is treated as homophonous lexical entries distinct from one another, and a direct consequence is the lack of convincing reason to account for why the loss of distinct lexical entries should be closely correlated.

Let us briefly spell out what an alternative syntactic theory works like. The focus movement approach adopts a monoclausal analysis, in which a Chinese cleft is not headed by a copula verb. Rather, the copula moves with the focused phrase to the left periphery to check the [exhaustive] feature (Teng 1979; Zhu 1996; Erlewine 2016). Assuming a Rizzi-style articulated CP, it is argued that the focused phrase undergoes focus movement to [Spec, FocP] from its base position at FinP. One characterization of the copula morpheme's role during focus movement is that *shi* is syntactically an adverb analogous to the English adverb *only*. An adverb-like focus marker resides in the left periphery but simultaneously stays as closely to the focus it associates with as possible. Another possibility is that the copula morpheme initially merges at the head of the focus projection (Rizzi's FocP) and subsequently undergoes remnant movement to a projection structurally higher than FocP (e.g. TopP, cf. Frascarelli and Ramaglia 2009).

Apart from the empirical issue with the mutually entailing nature of copular clauses, term clefts and propositional assertions (as well as the coordinated decline pattern in Mandarin), an adverb-based approach shown above also faces the additional burden of accounting for the reduplicative A-not-A questions. To posit a bifurcation between a *bona fide* copula verb category in the case of copular clauses, and a focus-marking adverbial category in the case of clefts, such an account would seem to be committed to positing two types of reduplicative processes when both copular clauses and clefts appear in A-not-A questions.[11] Such assumption, however, does not seem to find any independent empirically-grounded motivations. A further issue is the plausibility of positing a reduplicative process that targets an adverbial element, as elsewhere only predicative elements (verbal and adjectival) are known to allow for reduplication. Note that this does not pose a problem if clefts feature a copula verb in Chinese.

Finally, the observation that Sinitic languages exhibit variation in terms of the obligatoriness of the *de*-like particle in clefts factors into the locus of exhaustivity reading

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[11] As far as I know, focus-based approaches have not explicitly addressed how to incorporate propositional/predicate assertion into the division between copular clauses and clefts. One would assume that either these assertions are subsumed by a copular clause, or by a term cleft, or they project their own construction types. This problem (and whether an attempt to resolve it raises new theoretical challenges) will not be touched upon here.

in clefts. That is, it disfavors proposals (Hole 2011; Hole & Zimmermann 2013) in which exhaustivity is derived from the *de*-particle, which lexically encodes a meaning component of maximality. It seems more compatible with theories such as Cheng (2008), in which the particle modulates speech act (e.g. assertion) and expresses sentence mood. Exhaustivity is derived elsewhere, for example, by means of a maximal presupposition triggered from within the open sentence.

5. Conclusion

Studies on copulas and copular constructions from a cross-Sinitic perspective are still in an inception stage. As a result, the type of copula verb that each individual Sinitic language employs, as well as the extent to which Sinitic languages vary in the syntactic constructions a copula might appear in, remains a desideratum.

This paper thus fills in a noticeable lacuna, by mapping Sinitic languages to their respective copula types, and establishing that a group of four South Sinitic languages employ reflexes of *xi* in their copular constructions. This investigation is then followed by a pilot survey of the syntactic frames each *xi*-type language licenses, in comparison with the case of the *shi*-copula in Mandarin. The comparative syntactic work reaffirms the need to posit multifunctionality of the copula morpheme in the Sinitic language area. That is, it is plausible to assume that the copula morpheme represents homophonous (and historically/pragmatically interrelated) yet distinct lexical items. What's more, the comparative survey lends first support toward unifying several copular constructions as a family of assertion sentences with structural homogeneity. I have shown that the empirical picture is harder to accommodate given an approach that draws a distinction between a *bona fide* copula verb category and an adverbial category that occurs in clefts and cleft-like sentences. Finally, the comparison disfavors certain proposals that derive the focus exhaustivity reading of clefts from overt materials (i.e. sentence-final particles), by demonstrating that the presence of particles are fluid across languages.

While the present study looks into a variety of *xi*-type languages, it equates *shi*-type languages with Mandarin, thus a more comprehensive typological survey is needed in future research. It is hoped that this paper opens up a new line of research, and the syntactic variation unveiled enables more empirically grounded and more testable discussions over theoretical issues of the nature of copular-like constructions in Chinese syntax.

REFERENCES

CHENG, LISA LAI-SHEN, 2008. Deconstructing the shi… de construction. *The Linguistic Review* 25 (3-4): 235-266.
CHEUNG, HUNG-NIN. 2007. *Cantonese Grammar.* Hong Kong: The Commercial Press.

DEN DIKKEN, MARCEL. 2006. *Relators and linkers: The syntax of predication, predicate inversion, and copulas.* Cambridge, Mass.: MIT Press.

ERLEWINE, MICHAEL. 2016. The semantics of the Mandarin focus marker shi. Talk presented at the European Association for Chinese Linguistics 9, Stuttgart.

FRASCARELLI, MARA, AND FRANCESCA RAMAGLIA. 2014. (Pseudo)clefts at the syntax prosody-discourse interfaces. *Cleft structures*, edited by Hartmann Katharina, and Veenstra Tonjes, 97–138. Amsterdam: John Benjamins Publishing Company.

HANDEL, ZEV. 2015. The Classification of Chinese: Sinitic (The Chinese Language Family). In Wang, William & Sun, Chaofen (eds.). *The Oxford Handbook of Chinese Linguistics*, 34–44. Oxford: Oxford University Press.

HIGGINS, RICHARD. 1979. *The pseudo-cleft construction in English*. New York: Garland.

HIRAIWA, KEN, and SHINICHIRO ISHIHARA. 2002. Missing links: cleft, sluicing and 'no da' construction in Japanese. *MIT Working Papers in Linguistics* 43: 35-54.

HOLE, DANIEL. 2011. The deconstruction of Chinese shi… de clefts revisited. *Lingua* 121.11: 1707-1733.

HOLE, DANIEL, and MALTE ZIMMERMANN. 2013. Cleft partitionings in Japanese, Burmese and Chinese. *Cleft structures*, edited by Katharina Hartmann, and Tonjes Veenstra, 285-317. Amsterdam: John Benjamins.

JIN, DAWEI. 2017. Toward a copular syntax of clefts: evidence from Chinese. Talk presented at the 2017 LAGB (Linguistic Association of Great Britain) annual Meeting.

LI, CHARLES, and SANDRA THOMPSON. 1989. *Mandarin Chinese: A functional reference grammar*. Berkeley: University of California Press.

LI, RULONG, and SHUANGQING ZHANG. 1992. *Kegan fangyan diaocha baogao* [*A fieldwork report of the Hakka and the Gan dialects*]. Amoy: Xiamen University Press.

LOHNDAL, TERJE. 2009. The Copula Cycle. *Cyclical Change.*

MATTHEWS, STEPHEN, and VIRGINIA YIP. 2013. *Cantonese*. London: Routledge.

MIKKELSEN, LINE. 2005. *Copular clauses.* Amsterdam: John Benjamins.

MIKKELSEN, LINE. 2011. Copular clauses. In Maienborn, Claudia, Klaus von Heusinger & Paul Portner (eds.), Semantics: An international handbook of natural language meaning, 1805-1829. Berlin: Mouton de Gruyter.

NORMAN, JERRY. 1988. *Chinese*. Cambridge, UK: Cambridge University Press.

PAUL, WALTRAUD, and JOHN WHITMAN. 2008. Shi… de focus clefts in Mandarin Chinese. *The Linguistic Review* 25(3-4): 413-451.

SHYU, SHU-ING. 1995. The syntax of topic and focus in Mandarin Chinese. Los Angeles, California: University of Southern California Dissertation.

SIMMONS, RICHARD VANNESS. 1999. *Chinese Dialect Classification.* Amsterdam: John Benjamins.

TANG, SZE-WING. 1998. Parametrization of features in syntax. University of California at Irvine dissertation.

TANG, SZE-WING. 2005. *Cantonese Grammar*. Hong Kong: The Commercial press.

TANG, YUMING. 2009. Jindai Hanyu de Panduan Dongci Xi jiqi Liubian [The copula verb xi in Early Modern Chinese and its development]. *Zhongshan Daxue Xuebao* [*Bulletins of Sun Yat-sen University*] 6.3: 55-59.

TANG, CHAOJU, and VAN HEUVEN, VINCENT. 2007. Predicting mutual intelligibility in Chinese dialects from subjective and objective linguistic similarity. *Interlingüística* 17: 1019–1028.

TENG, SHOU-HSIN. 1979. Remarks on cleft sentences in Chinese. *Journal of Chinese Linguistics* 7: 101-112.

WAKEFIELD, JOHN. 2010. The English Equivalents of Cantonese Sentence-final Particles. Hong Kong Polytechnic University Dissertation.

WANG, LI. 1940. *Hanyushi Lunwenji* [*Papers on the History of the Chinese Language*]. Beijing: Beijing Press.

XU, LIEJIONG, and LIU, DANQING. 2007. *Huati de jiegou yu gongneng* [*The structure and function of topic*]. Shanghai: Shanghai Education Publishing House.

YUE-HASHIMOTO, ANNE. 1969. The verb 'to be' in Modern Chinese. The verb 'be' and its synonyms, edited by John Verhaar, 72-111. Dordrecht: Reidel.

ZHAN, FANGQIONG, and CHAOFEN SUN. 2013. A copular analysis of shi in the Chinese cleft construction. *Language and Linguistics* 14.4: 755-789.

ZHANG, HEYOU, and TANG, SZE-WING. 2011. On the syntax and semantics of the idiosyncratic copular sentences and empty categories. *Contemporary Linguistics* 12.1: 14-23.

ZHANG, ZHENXING. 1987. *Language Atlas of China*: *Volume of Chinese Dialects*. Beijing: The Commercial Press.

ZHU, YAO. 1996. The focus-marking function of shi in Mandarin Chinese. PhD dissertation, University of Minnesota.

The BEI Era and the Double Object Construction in Mandarin Chinese[*]

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In this paper I discuss the double object construction with the ditransitive verb *song* ('give') in Mandarin Chinese. In Liu (2006), the IO in the *song* double object construction without an additional *gei* ('GEI') following the verb has been shown to be unable to undergo passivization, which is achieved via the BEI construction in Mandarin Chinese. However, in the Google search, we can find examples showing possible IO movement. Consultants with native speakers also confirm this finding. I therefore discuss the possible factors for this new judgment from two different perspectives. The discussion shows that the possible/impossible IO movement in the *song* DOC should result from syntactic derivations, rather than a semantic requirement in the BEI construction.

1. Introduction

In this paper, I would like to discuss a very common double object construction in Mandarin Chinese. The double object construction contains the main verb *song* ('give'), which is highly used in our daily life and is usually considered a typical example to illustrate double object construction in Mandarin Chinese.

(1) Zhangsan song-le   Lisi   yi-ben   shu.
    Zhangsan give-ASP   Lisi   one-CL   book
    'Zhangsan gave Lisi a book.'

In Li and Thompson (1981), they categorize ditransitive verbs into three subclasses. And their categorizing standard is to check whether an additional *gei* ('GEI') can follow the ditransitive verb in the construction. The verb *song* in (1) belong to their subclass in which the main verb can take an optional GEI in the construction, as illustrated in (2).

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(2) Zhangsan song-(GEI)-le   Lisi   yi-ben   shu.
    Zhangsan give-(GEI)-ASP   Lisi   one-CL   book
    'Zhangsan gave Lisi a book.'

Since the additional GEI is optional in (2), intuitively the example in (2) can be paraphrased in (3) and (4) respectively. Example (3) is the *song* DOC without an additional GEI, while example (4) is the one with an additional GEI.

(3) Zhangsan song-le   Lisi   yi-ben   shu.
    Zhangsan give-ASP   Lisi   one-CL   book
    'Zhangsan gave Lisi a book.'

(4) Zhangsan song-GEI-le Lisi   yi-ben   shu.
    Zhangsan give-GEI-ASP Lisi   one-CL   book
    'Zhangsan gave Lisi a book.'

In the following discussion, I would like to focus on example (3) where the ditransitive verb *song* ('give') is not followed by an additional GEI. For the ease of discussion, I will call examples like (3) as the *song* DOC without GEI. Essentially, I will show that there are interesting judgment differences of the *song* DOC without GEI and I try to explore the possible causes for this new phenomenon.

This paper is organized as follows: In Section 2, I will briefly review the IO and DO movement patterns of the *song* DOC without GEI in the literature. I then present a recent search result of the *song* DOC without GEI by Google in Section 3. In Section 4, I discuss the possible intervening factors which may influence the speakers' judgments. I conclude the paper in the last section.

2. One Judgment

In this section I first present some investigation of the argument movement in the literature for the *song* DOC. Cross-linguistically, the A-movement patterns of the IO and the DO in the DOC have received great attentions. And it has been observed that language may differ in the movement patterns of the IO and the DO. For example, in English, the IO can be passivized, but the DO cannot, as shown in (5).

(5) English
    a. John gave Mary a book.
    b. Mary was given the book.   (IO)
    c. *The book was given Mary.   (DO)

However, there are also languages which show the opposite movement pattern. In German, for instance, only the DO can move, but not the IO.

(6) German

    a. Das   Mädchen   schenkte dem   Jungen   ein Buch.

       The   girl.NOM gave   the   boy.DAT a book.ACC

       'The girl gave the boy a book.'

    b. Ein Buch$_i$ wurde dem Jungen   von dem Mädchen t_i geschenkt.

       a   book.NOM was   the boy.DAT by the girl   given

       'A book was given to the boy by the girl.'

    c. *Der Junge$_i$ wurde t_i von dem Mädchen ein Buch geschenkt.

       the boy.NOM was   by the   girl   a   book given

       'The boy was given a book by the girl.'

                                                  (Woolford 1993: 688)

There are also languages which show symmetric movement patterns. That is, both the IO and the DO can undergo passivization. This is illustrated via the examples from Kinyarwanda in (7).

(7) Kinyarwanda

    a. Igitabo   cy-a-haa-w-e   umugore   (n'umugabo).

       book   SP-PAST-give-PASS-ASP   woman   (by-man)

       'The book was given to the woman by the man.'

    b. Umugore   y-a-haa-w-e   igitabo (n'umugabo).

       woman   SP-PAST-give-PASS-ASP   book (by-man)

       'The woman was given the book by the man.'

                                                    (Kimenyi 1980: 127)

      Since there are such varieties across languages, one may wonder if Mandarin Chinese shows one of the movement patterns similar to any of the languages presented above. Indeed, in Liu (2006), she has investigated several constructions of DOC in Chinese, including the DOC without GEI. The verbs used in some of her examples include the verb *song* ('give'), which happens to be our discussion focus here. The DOC without GEI in Liu (2006) shows the A'-movement patterns of the IO and the DO as cited in (8).[1]

(8) a. *Lisi   bei   ta   song-le   yi-ben shu.   (IO)

       Lisi   bei   he   give-ASP   one-CL book

       'Lisi was given a book by him.'

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[1] Note that the indefinite object NP has to become a definite one when becoming the subject. There is a definiteness/specificity requirement of subjects and topics in Mandarin Chinese (see Tsai 2001 and Hsin 2002). Hence the indefinite object NP is changed automatically into a definite/specific one when moving to the subject or topic position throughout this paper.

b. Nei-ben shu   bei   ta   song-le   Lisi.   (DO)
   that-CL book   bei   he   give-give   Lisi
   'That book was given to Lisi by him.'

(Liu (2006): 896, (80b,c))

As one can see, although the movement test done in (8) is A'-movement, it is also a kind of passivization, as shown in the English translation. In Mandarin Chinese, passivization is achieved via the BEI construction. Typical active examples and their passive counterparts are shown in (9). In the literature, the BEI construction has been argued to illustrate A- or A'-movement. According to Huang (1999), the BEI construction which involves A-movement is the one without the emergence of the Agent (the short passive) as in (9b), while the BEI construction involves A'-movement is the one with the emergence of the Agent (the long passive) as in (9c).

(9) a. Zhangsan   mai-zou-le   yi-ben shu.
       Zhangsan   buy-away-ASP   one-CLbook
       'Zhangsan bought a book.'
    b. Zhe-ben   shu   bei   mai-zou-le.
       This-CL   book   BEI   buy-away-ASP
       'This book was bought.'
    c. Zhe-ben shu   bei   Zhangsan   mai-zou-le.
       This-CLbook   BEI   Zhangsan   buy-away-ASP
       'This book was bought by Zhangsan.'

In example (8) we have seen the presence of the Agent, hence this kind of passivization is considered an A'-movement test.

The A-movement pattern of the IO and the DO arguments is not discussed in Liu (2006). Therefore I tried to ask some native speakers who share the same A'-movement judgment as in Liu (2006). For the A-movement pattern, these speakers show exactly the same pattern as the A'-movement passive. That is, only the DO can undergo passivization, while the IO is immobile.

(10)   a. *Lisi   bei   song-le   yi-ben shu.   (IO)
            Lisi   bei   give-ASP   one-CL book
           'Lisi was given a book by him.'
        b. Nei-ben   shu   bei   ta   song-le   Lisi.   (DO)
           that-CL   book   bei   he   give-give   Lisi
          'That book was given to Lisi by him.'

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Hence we may conclude that the argument movement pattern in the *song* DOC is similar to the one observed in English, in which there is movement asymmetry. And the asymmetry is that the IO is immobile, while the DO is movable.

3. Another Judgment

Recently, I have encountered some new judgments regarding the *song* DOC in Mandarin Chinese. While examining Liu (2006), one of the consultants told me that he can accept the ungrammatical (8a). After asking several other speakers, some of them also share the same judgment as this consultant. In other words, there are some people who can accept IO passivization as well as DO passivization, as shown in (11).

(11) a. Lisi bei   ta   song-le   yi-ben shu.   (IO)
          Lisi bei   he   give-ASP   one-CL book
          'Lisi was given a book by him.'
     b. Nei-ben   shu   bei   ta   song-le   Lisi.   (DO)
          that-CL   book bei   he   give-give   Lisi
          'That book was given to Lisi by him.'

Note that the passivization in (11) is A'-movement since there are Agents in the sentences. For the A-movement pattern, these speakers who can have IO A'-movement also can accept IO A-movement. This is shown in (12).

(12) a. Lisi bei   song-le   yi-ben shu.   (IO)
          Lisi bei   give-ASP   one-CL book
          'Lisi was given a book by him.'
     b. Nei-ben   shu   bei   ta   song-le   Lisi. (DO)
          that-CL   book bei   he   give-give   Lisi
          'That book was given to Lisi by him.'

In addition to the consultations with native speakers, I have also done a Google search. Due to the search limitation, I tried to find the possible A-movement cases for the IO of the *song* DOC without GEI. Interestingly, I did find some examples which illustrate IO passivization, as shown in (13) and (14).[2]

(13)   Weilian   wangzi   zai   dao-guo   bei   song-le
          William   prince   at   island-country BEI   give-ASP
          sheme qipa   dongxi?
          what   unusual   thing
          'What unusual thing was given to Prince William in this island country?

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[2] The two Google examples were retrieved from Google search in August, 2017.

(14)   Mai-fang   ni   bei   song   mianji   le   ma?
       buy-house   you   BEI   give   floor-space   ASP   Q
       'When buying the house, were you given some floor space?'

In (13), we can see that the IO *Prince William* was given something as a gift when he visited a certain island country, and the passive sentence is used to show ask what he was given in that event. Example (14) also shows a similar situation, in which the IO *you* undergoes passivization in the *song* DOC without GEI. Note that there is a topic VP preceding the passivized IO.

Therefore, we do see that there are some speakers who can accept IO movement in the *song* DOC without GEI. This is quite an interesting contrast when we compare the current findings to the speakers who share the same judgment as Liu (2006). That is, there are also speakers who do not allow IO movement in the *song* DOC without GEI.

4. The Cause

Since there are two different judgments, one may be curious to see what the causes are beyond. The first possible cause that came to my mind is the semantic influence of passivization.

Recall that the passivization employed in Chinese is the BEI construction. The BEI construction, as well-known in the literature, has a semantic requirement on its subject. That is, something bad has to happen on the subjects of the passives. In other words, there has to be some adversative reading imposed on the subjects. As shown in (15), the passive counterpart of (15a) in (15b) is well-perceived since Lisi was a victim being beaten by Zhangsan.

(15)   a. Zhangsan   da-le   Lisi.
          Zhangsan   beat-ASP   Lisi
          'Zhangsan beat Lisi.'
       b. Lisi bei   Zhangsan   da-le.
          Lisi BEI   Zhangsan   beat-ASP
          'Lisi was beaten by Zhangsan.'

However, once the verb is changed into a positive one like the one in (16a), its passive counterpart is unacceptable. *Lisi* functions as a beneficiary in (16b), which does not fulfill the requirement of the passives. Compared (16b) to (15b), the only difference lies in the meaning of the verb. Since there is no structural difference, the adversity requirement is the cause of the ungrammaticality of sentence (16b).

(16)   a. Zhangsan ai-guo   Lisi.
          Zhangsan love-ASP   Lisi
          'Zhangsan used to love Lisi.'

b. *Lisi bei   Lisi   ai-guo.
   Lisi BEI   Lisi   love-ASP
'Lisi used to be loved by Zhangsan.'

In addition, the adversity requirement recently plays an important role in forming a new type of Mandarin passive. This is known as the rise of the BEI Era. For passive constructions, it is required that the verb in its active counterpart is transitive or ditransitive so that the internal argument can be passivized and becomes the subject of the passive construction. However, this requirement has been violated recently. In Mainland China, starting around 2008, examples like (17a) or (17b) began to emerge in the internet texts. One salient characteristic of these examples is that the verbs of the relevant examples are intransitive.

(17)   a. Zhangsan   zuotian   bei   zisha-le.
           Zhangsan   yesterday   bei   suicide-ASP
           'Zhangsan was forced to commit suicide yesterday.'
        b. Zhangsan   bei   shizong-le.
           Zhangsan   bei   missing-ASP
           'Zhangsan was forced to be missing.'

As observed in Xie (2016), these kinds of passives in (17) both impose a heavy adversative reading on the subject. Moreover, the subject has to perform the actions denoted by the verb unwillingly. For instance, in (17a), the reading is that *Zhangsan* was forced to commit suicide and this was against his will. Compared to typical passives, although adversative subject is not an absolute requirement, it becomes an essential component in this newly-formed passive construction.

However, it has been reported that the adversity reading on the subject is not an absolute semantic requirement for passives. According to the survey in the corpora, the adversity requirement on the subject is around 50% to 70% (i.e. McEnery *et al.* 2003 & Xiao *et al.* 2006). And Chao (1968) has proposed that the requirement declines a lot because of the influence of western languages such as English. As shown in (18), the passive English sentence in (18a) was translated into a BEI construction counterpart in (18b) directly. However, a better translation should be the one in (18c) which employs the *shi…de* construction.

(18)   a. This novel was written by my mother.
        b. *Zhe-ben   xiaoshuo   bei   wo   muqin xie-le.
            this-CL   novel   BEI   I   mother write-ASP
        c. Zhe-ben   xiaoshuo   shi   wo   muqin xie-de.
            this-CL   novel   be   I   mother write-DE

If we view the adversity requirement as a scale, it seems that there are speakers who move to one end of the scale, in which the intransitive passives of the BEI Era are formed because of the heavy adversative reading on the subjects. On the opposite end of the scale, there are also speakers who have lessened their adversity requirement on the passive subjects. Hence one possible reason why there are speakers who can accept IO passivization in the *song* DOC is that these speakers do not have strong adversity requirement on the passive subjects as other speakers.

If we examine the sentence in question again, repeated here in (19), it is quite possible that the sentence will be judged ungrammatical under the adversity requirement on the subject. The verb *song* ('give') usually denotes something good given as a present from the sender to the receiver. As a result, the object NP *Lisi* is interpreted as a beneficiary in (19). When the object NP becomes the subject NP in (19), there will be a semantic conflict consequently. However, if some speakers have a looser adversity requirement, these speakers may not have this kind of semantic conflict and judge the sentence as grammatical.

(19)　　(*)Lisi bei　　song-le　　　yi-ben shu.　　　　　　　(IO)
　　　　　 Lisi bei　　give-ASP　　one-CL book
　　　　　 'Lisi was given a book by him.'

To test this possible cause for different judgment, one way is to eliminate the semantic influence and retest the movement results for these two groups of speakers. There are A'-movement and A-movement patterns which need to be reexamined. For the A-movement, a well-known construction is the BA construction. However, this construction is probably not a good candidate to test the A-movement pattern of the IO in the *song* DOC without GEI since the BA construction also imposes some affective or disposal reading on the moved object. For example, it is possible to prepose the object from (20b) to (20a), but the preposing of the object NP is not allowed from (21b) to (21a). This is because the stative verb *xihuan* ('like') does not denote an affective or disposal on the object NP. Hence its BA counterpart is not acceptable by native speakers.

(20)　　a. Wo ba　　juzi　　bo-le.
　　　　　　 I　　 BA　　orange peel-ASP
　　　　　　 'I peeled the orange.'
　　　　　b. Wo　bo-le　　　　juzi.
　　　　　　 I　　peel-ASP　　　orange
　　　　　　 'I peeled the orange.'

(21)　　a. *Wo ba　　ta　　xihuan-le.
　　　　　　 I　　BA　　him　　like-ASP
　　　　　　 'I liked him (now, became fond of him).'

b. Wo xihuan ta-le.

 I like him-ASP

 'I like him (now, became fond of him).'

<div align="right">(Li 2006: (100) and (101))</div>

For this reason, I will focus on the topic construction, which can illustrate the A'-movement without a severe semantic interference. For topicalization, the object NP is moved to a position preceding the subject, and the object NP will receive stressed or contrastive reading. The topicalization test result is shown in (22). In (22a) the IO is topicalized, while the DO is toplicalized instead in (22b).

(22) a. (*)Lisi, Zhangsan song-le yi-ben shu. (IO)

    Lisi, Zhangsan give-ASP one-CL book

   'Lisi, Zhangsan gave him a book.'

  b. Zhe-ben shu, Zhangsan song-le Lisi. (DO)

    This-CL book Zhangsan give-ASP Lisi

   'This book, Zhangsan gave it to Lisi.'

Interestingly, there are also different results of (22a), in which the IO is topicalized. There are speakers who do not accept example (22a), but there are also speakers who accepts (22a). At this point we seem to encounter a dilemma here since there are also no consistent grammatical judgment. However, there is in fact a certain pattern which is worth paying attention to. The speakers who cannot accept IO passivization cannot accept IO topicalization, either. On the other hand, the speakers who can have IO passivization can have IO topicalization as well. This finding thus shows a consistency among different speakers. In addition, this constancy implies that the prohibition of IO passivization is not caused by the semantic adversity requirement. If the ungrammaticality of IO passivization is determined by the semantic adversity requirement, the IO topicalization should be acceptable for those speakers since there is no semantic interference in the later movement. However, we do not find such cases among those native speakers. This result therefore indicates that the cause of IO movement ungrammaticality is not a pure semantic factor. The grammaticality or ungrammaticality of IO movement, no matter it is passivization or topicalization, should be caused by syntactic derivations instead.

To summarize, in this section I have tried to investigate the causes of different judgments of IO passivization. Although there are new types of passives emerged in this so-called BEI Era, the adversity requirement on the passive subjects should not be a core factor to determine the grammaticality or ungrammaticality of IO passivization in the song DOC without GEI.

5. Conclusion

In this paper, I have investigated the double object construction with the main verb *song* ('give'), without a following GEI. I show that there are different grammatical judgments regarding the IO passivization of the *song* DOC without GEI. This can be found from different speakers and the Google search. Although a possible cause of this judgment difference may be caused by the adversative reading on the subject of the BEI construction, I have argued that this is not attested since we do not find such evidence after the adversity requirement interference has been removed. This preliminary discussion therefore leads the exploration to different syntactic derivations which may cause the differences in the future.

REFERENCES

CHAO, YUEN-REN. 1968. *A grammar of spoken Chinese*. Berkeley: University of California Press.

HUANG, C.-T. JAMES. 1999. Chinese passives in comparative perspective. *Tsing Hua Journal of Chinese Studies* 29(4). 423-509.

HSIN, AI-LI C. 2002. On indefinite subject NPs in Chinese. *Chinese Studies* 20(2). 353-376.

KIMENYI, ALEXANDRE. 1980. *A relational grammar of Kinyarwanda*. Berkeley: University of California Press.

LI, Y.-H. AUDREY. 2006. Chinese *ba*. In Martin Everaert and Henk van Riemsdijk (eds.) *The Blackwell companion to syntax, vol. 1*, 374-468. Malden, MA: Blackwell.

LI, CHARLES N. & SANDRA A. THOMPSON. 1981. *Mandarin Chinese: A Functional Reference Grammar*. Berkeley and Los Angeles: University of California Press.

LIU, FENG-HIS. 2006. Dative constructions in Chinese. *Language and Linguistics* 7.4. 863-904.

MCENERY, TONY & RICHARD XIAO. 2005. Passive constructions in English and Chinese: A corpus-based contrastive study. *Proceedings from the Corpus Linguistics Conference Series* 1(1).

TSAI, WEI-TIEN DYLAN. 2001. On subject specificity and theory of syntax-semantics interface. *Journal of East Asian Linguistics* 10. 129-168.

WOOLFORD, ELLEN. 1993. Symmetric and asymmetric passives. Natural Language & Linguistic Theory 11. 679–728.

XIAO, RICHARD, TONY MCENERY & YUFAGN QIAN. 2006. Passive constructions in English and Chinese: A corpus-based contrastive study. *Languages in Contrast* 6. 109-149.

Prosody and *Wh*-scope Interpretation in Chinese

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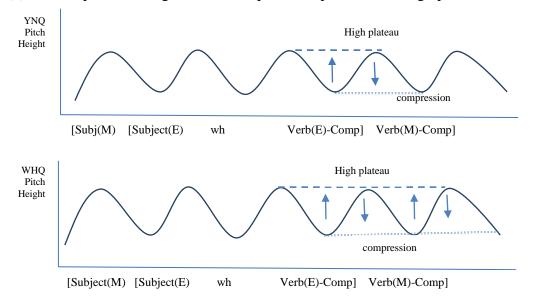*Stony Brook University*

This study shows that in Mandarin Chinese, there exits *wh*-scope ambiguity in the construction, which has been widely claimed as a typical example of *wh*-island effect in *wh*-in-situ languages. In addition, this study confirms that the *wh*-scope ambiguity can be prosodically disambiguated in people's speech. In general, the big pitch excursion on *wh*-phrases is found for matrix scope reading of *wh*-phrases. The specific phonological strategies on an embedded verb and a matrix verb are different depending on the embedded clause type and *wh*-phrase type.

1. Introduction

The *wh*-island effect at LF in *wh*-in-situ languages has drawn a lot attention in many studies. Recent studies including Ishihara (2002) and Hwang (2011) claim that the interpretation of the *wh*-phrases in (1) is ambiguous between an embedded scope (YNQ) (1a) and a matrix scope (WHQ) (1b) in Japanese and Korean.

(1) John-un   [Mary-ka   nwukwu-lul   mannassnun-ci]   mwuless-eo?[Korean]
    John-Top [Mary-Nom   who-Acc   met-Q]   asked-Q?
    a. 'Did John ask who Mary met t?'   Embedded scope
    b. 'Who did John ask whether Mary met t?'   Matrix scope

According to them, the semantic scope ambiguity of the *wh*-phrases in (1) can be disambiguated by prosody. The F0 pitch compression or high plateau appears between a *wh*-phrase and an associated complementizer as in (2). In other words, *wh*-scope is indicated by the span of F0 pitch compression or high plateau in Japanese and Korean.

(2) The simplified configuration of F0 pitch compression and high plateau

Then, similar to Japanese and Korean, will sentences like (3) in Chinese also allow both scope readings listed?

(3) Zhengzhi   wen-guo   Lisi   jian-guo   shui?
    Zhengzhi   ask-Perf   Lisi   meet-Perf   who
    a. 'Did Zhengzhi ask who Lisi met?'   Embedded scope
    b. 'Who did Zhengzhi ask whether Lisi met?'   Matrix scope

If so, will prosody disambiguate *wh*-scope interpretation? And what kind of prosodic strategy will be used? In order to investigate the relation between *wh*-scope and prosody in Chinese, we conducted two experiments.

2. Experiment 1

We examined the existence of the scope ambiguity of *wh*-phrases in an embedded clause as in (3) by conducting experiment 1. This experiment consisted of a forced choice task and an acceptability judgment task. In our stimuli, we controlled three factors. They are the position of *wh*-phrases (subject vs. object in an embedded clause), the type of *wh*-phrases regular (*wh*-phrases vs. D-linked *wh*-phrases), and the embedded sentence types (default vs. A-not-A). We created four sets of eight target sentences (= 2×2×2). Total 32 target sentences intermingled with 192 fillers were distributed across four sets in a Latin Square Design in the experiment.

71 native Chinese speakers participated in this experiment. For the forced choice task, participants were asked to choose one of the two given answers as in (4) after reading the question.

(4) Question: Zhengzhi wen-guo Lisi jian-guo shui?
    Answer: a. Shide('Yes')   b. Liujun('Liujun')

In order to avoid being misinterpreted as declaratives, the question marker always appeared at the end of sentence. After the forced choice task, we examined the acceptability of matrix scope reading which violates a *wh*-island constraint. In the acceptability judgment task, the participants rated the naturalness of a question and answer pair on a 7-point scale; 0 means the least natural and 6 means the most natural. In a question and answer pair, the possible answer to only *wh*-question as in (4b) was provided as in (5).

(5) Question: Zhengzhi wen-guo Lisi jian-guo shui?
    Answer: Liujun('Liujun')

    0 (The least natural)   1   2   3   4   5   6 (The most natural)

The results of a forced choice task and an acceptability are as follows.

(6)

	The type of *wh*-phrases	Position	A-not-A	Forced Choice result (Matrix scope answer)	Acceptability judgment result (Max: 6)
1	Regular wh	Subject	No	50 %	3.1
2	Regular wh	Subject	Yes	57%	2.9
3	Regular wh	Object	No	52%	3.2
4	Regular wh	Object	Yes	45%	2.9
5	D-linking wh	Subject	No	43%	3.1
6	D-linking wh	Subject	Yes	43%	3.1
7	D-linking wh	Object	No	42%	3.5
8	D-linking wh	Object	Yes	35%	2.7

The results of the forced choice task show that there exists scope ambiguity in Chinese as well. The overall result of matrix scope answers in the forced choice task reached to around 50%, which means half of participants interpreted the question as a *wh*-question but the others interpreted the questions as a Yes-No question. No significant difference depending on the position of *wh*-phrases (subject *vs*. object) was found

(logistic regression model: $p > .05$). The embedded sentence type (default *vs.* A-not-A) did not play a crucial role to decide the *wh*-scope either. However, as shown in (6), the results of type 5 to 8 are relatively lower than the ones of types 1 to 4. This shows that embedded scope reading for D-linked *wh*-phrases is preferred (logistic regression model: $p < .05$).

Now let us take a look at the result of the acceptability judgment task in (6). The results on the matrix scope reading reached around 3. The difference between the conditions is not significant (linear regression model: $p > .05$, $t < 2$). This suggests that the matrix scope reading of *wh*-phrases can be accepted as natural regardless of the conditions. One might wonder why 3 can be assumed to be natural one, even though it is the midpoint of the scale. According to Lee and Yun (2016), since the sentence structures are not common in the colloquial conversation, the result of acceptability judgment task with 7-point scale in their study also reached around 3 out of 6 even with proper prosodic cues and morphological cues leading to matrix scope reading. Based on this, we assumed that 3 means acceptable.

In sum, the results from both a forced choice task and an acceptability task show that there exists *wh*-scope ambiguity in Chinese. Considering that the tasks in our experiment did not provide any other linguistic cues such as intonations and morphological markers which presumably affect processing *wh*-scope, the results further suggests that there is no *wh*-island effect at LF in Chinese.

3. Experiment 2

In this section, we will discuss how prosody disambiguates the ambiguous sentences proved in Experiment 1. In order to investigate what kinds of prosodic strategies Chinese speakers use to distinguish different *wh*-scopes, we conducted the production test. The same target sentences in Experiment 1 were utilized. The specific contexts leading to the different *wh*-scopes (an embedded scope and a matrix scope) were given as in (7), so total 64 target sentences (= 32 sentences $\times$ 2 different scopes) were recorded.

(7) "Wang Qiang is a fashion leader and has influenced the fashion trend several times. Last night, your friend saw a TV interview of Wang Qiang by a journalist, Li Hua."

Embedded scope: Li Hua asked Wang Qiang many questions during the interview. Suppose that you are chatting with your friend now and you want to know which questions Li Hua asked Wang Qiang.

Matrix scope: By watching the interview, your friend learned some fashion trends that Wang Qiang has influenced. Suppose that you are chatting with your friend now and you want to know which fashion trends Wang Qiang has influenced.

Q: Lihua   wen-guo   Wangqiang   yingxiang-guo   shenme?
       Lihua   ask-Perf   Wangqiang   influence-Perf   what
       'Did Lihua ask what Wangqiang has influenced?'/
       'What did Lihua ask whether Wangqiang has influenced?'

15 native Chinese speakers participated in this experiment. They were asked to read each context silently. The proper answer to the target question was also given, in order to prime a specific scope reading. Then, they read the target sentence aloud. The target sentences were recorded twice. There was no restriction to record the target sentences more than twice if the participants asked to do it. The experiment was conducted in the phonetics lab in the department of Linguistics, Stony Brook University. Zoom H6 Handy recorder and Shure SM 48-LC Vocal Dynamic Microphone were used.

We analyzed the data from 14 participants excluding one participant because of the creaky voice. We measured the lowest and the highest pitch heights on the embedded verb, the matrix verb and the *wh*-phrase. All collected pitch heights were normalized with Z-score. The gap between the lowest and highest pitches was calculated. The overall average of the pitch excursion is as follows.

(8)

	Embedded scope	**Matrix scope**	*p*-value
Matrix Verb	1.232002	1.195059	> .05
Embedded Verb	1.733613	1.751208	> .05
Wh-phrase (subject or object)	1.447142	1.612952	< .05

In general, *wh*-phrases are prosodically more focused for the matrix scope reading than for the embedded scope reading. In addition, even though the differences between two scopes are not significant, there tends to be the bigger pitch excursion on an embedded verb for a matrix scope reading than for an embedded scope reading. These show that Chinese speakers give a focused intonation to *wh*-phrases and embedded verbs to hint the matrix scope reading. As for an embedded scope reading, the bigger pitch gap tends to be found on a matrix verb but it is not statistically significant. However, the tendency to put a focus on the matrix verb can be attributed to the effort to give a clear cue for Yes-No question.

Now let us take a look at each result of the measured points in detail. Note that either a significant difference or a pattern according to the syntactic position of *wh*-phrases (subject vs. object) was not found so its specific result will not be provided here. First, the average of the pitch excursion on *wh*-phrases is in (9).

(9)

Wh-type	A-not-A	Embedded Scope	Matrix scope	*p*-value
D-linked *wh*	No	1.918692	2.020285	
Regular *wh*	No	1.257796	1.400369	< .05
D-linked *wh*	Yes	1.604984	1.818547	
Regular *wh*	Yes	1.016003	1.222323	

As in (9), *wh*-phrases were prosodically focused for the matrix scope reading (linear regression: $p < .05$, $t = 5.03$, $df = 879.09$) regardless of syntactic conditions. It is conjectured that the speakers give the cues for the matrix scope reading to the hearers by making the *wh*-phrase acoustically salient. This tendency was also found in Japanese and Korean (Hwang 2011).

Next, the results on another measuring point, the matrix verbs, are in (10). In overall result, we found that the matrix verb is focused for an embedded scope reading shown in (8). However, two different patterns are observed on matrix verbs depending on the presence of A-not A construction.

(10)

Wh-type	A-not-A	Embedded Scope	Matrix scope	*p*-value
D-linked *wh*	No	1.270386	1.151225	< .05
Regular *wh*	No	1.338576	1.195081	
D-linked *wh*	Yes	1.231659	1.255531	> .05
Regular *wh*	Yes	1.204188	1.240146	

The matrix verbs were focused for embedded scope reading in default constructions, but they were focused for matrix scope reading in A-not-A constructions. The difference between for embedded scope reading and for matrix scope reading was significant when the embedded sentences were default constructions. This shows that when the embedded sentence is structurally marked as a question, the prosodic strategy can be optional. In other words, prosody plays a crucial role on deciding the *wh*-scope when the syntactic structure does not offer additional information.

At last, the pitch excursion on an embedded verb is as follows.

(11)

Wh-type	A-not-A	Embedded Scope	Matrix scope	*p*-value
D-linked *wh*	No	1.436072	1.369298	> .05
D-linked *wh*	Yes	2.027558	1.992079	
Regular *wh*	No	1.413712	1.611547	> .05
Regular *wh*	Yes	2.014911	2.023553	

Two different patterns were also found on embedded verbs depending on the type of *wh*-phrases, even though the difference between embedded scope reading and matrix scope reading was not significant. When the *wh*-phrases are D-linked *wh*-phrases such as "which book" or "which food", the bigger pitch excursion was found on embedded verbs for embedded scope reading. However, it was found for matrix scope reading when regular *wh*-phrases were included. This shows that the *wh*-type can potentially have an impact on processing *wh*-scope in Chinese.

4. Discussion

Prosodic effect on different semantic interpretations of *wh*-phrases, regarding interrogative *vs. wh*-indefinite in Chinese has been studied, as in Hu (2002). Few studies, however, have been done on the ambiguity of *wh*-phrases, regarding matrix scope *vs.* embedded scope in Chinese, when *wh*-phrases function simply as interrogative pronouns. In that sense, this study is meaningful to reveal the relation between prosody and *wh*-scope ambiguity.

Through two different experiments, this study confirms that there is *wh*-scope ambiguity in Chinese similar to Japanese and Korean. In addition, we found that the Chinese speakers use the specific prosodic strategy to disambiguate the semantic scope ambiguity of *wh*-phrases. However, the scope is not marked by the span of F0 pitch compression or high plateau, contrary to Japanese and Korean. Instead, the biggest pitch excursion was found always on the *wh*-phrase for the matrix scope reading, and found sometimes on matrix verbs and embedded verbs contingent upon syntactic structure and *wh*-phrase type.

REFERENCES

HU, F. 2002. A prosodic analysis of *wh*-words in Standard Chinese. *Proceedings of Speech Prosody* Aix-en-Provence, France. April 11-13, PP 403-406.

HWANG, H.K. 2011. Scope, Prosody, and Pitch Accent: the Prosodic Marking of *Wh*-scope in Two Varieties of Japanese and South Kyeongsang Korean. Doctoral dissertation, Cornell University.

ISHIHARA, S. 2005. Prosody-Scope Match and Mismatch in Tokyo Japanese *Wh* questions, *English Linguistics* 22.2, 347-379.

LEE, S., AND J. YUN. 2016. Influence of Intonation, Morphology and Syntax on the Semantic Scope of *wh*-phrases in Kyeongsang Korean. Presented at The 90th LSA Annual Meeting of the Linguistic Society of America, Washington, DC.