Complement control at syntax-semantics-discourse interfaces: An investigation of Mandarin Chinese
Chit-Fung LAM (Lawrence) – University of Manchester

Mandarin Chinese is a discourse pro-drop language, where subjects and objects can generally be unexpressed when they are contextually retrievable. Despite divergent theoretical implementations, several influential studies (e.g., Grano, 2015; Huang, 1984) similarly argue for a generalised framework of control for Chinese, where discourse pro-drop is integrated into some control mechanism. Taking on a similar position, my PhD project is an empirically oriented investigation, including detailed classifications of Chinese control predicates:

(i) Empirical-Tier classification:
For each control predicate, diagnostics are applied to detect the referential properties of its controllee. The predicates are divided into two broad types, depending on the interpretation of its controllee: obligatory control vs non-obligatory control. Under obligatory control there are three control sub-types: exhaustive control, partial control, and split control. Under non-obligatory control is arbitrary control (discourse pro-drop). Although these control types resemble those found in the cross-linguistic literature (Landau, 2000, 2013; Stiebels, 2007), my classification also takes into account language-specific properties of Chinese (e.g., discourse pro-drop).

(ii) LFG-Tier classification:
Building on the Empirical Tier, the LFG Tier formally model Chinese control relations. Following Dalrymple et al. (2019), it integrates LFG with Glue Semantics and Partial Compositional Discourse Representation Theory (PCDRT; Haug, 2014). Motivated by the detailed empirical properties of Chinese complement control, the investigation refines Dalrymple et al.’s (2019: 545-601) four-way model-theoretic typology of control:

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My talk will highlight a few findings arising from the LFG-Tier classification. The findings have implications for LFG’s general control mechanisms. Before then, note that my analysis assumes a grammar-wide optional constraint for all Chinese predicates to deal with subject pro-drop:

\[(\uparrow \text{SUB} \ PRED) = \text{’PRO’} Λ \ λP.[x] ; P(x) : ∀H.([\uparrow \text{SUB}]) ≅ H ≅ H\]

Finding 1: Copy Control and two classes of equi predicates
There has been a debate regarding whether equi predicates should be modelled as Functional Control (e.g., Asudeh, 2005; Bresnan, 1982) or (Obligatory) Anaphoric Control (e.g., Dalrymple et al., 2019). There is little discussion about the potential of a language to possess both classes of equi. I argue that Chinese is one such language having both classes of equi: one exhibiting Functional Control, while the other Obligatory Anaphoric Control. For languages with a rich case marking system, this distinction may be signalled by the case makers. Although Chinese lacks case marking, I argue that the two equi classes are differentiated by their ability of licensing “Copy Control”.

In Chinese Copy Control, as noticed by e.g., Hu et al. (2001) and Grano (2015), the controllee is replaced by an overt resumptive pronoun (as the embedded subject of the complement clause) sharing the same reference as the controller under the condition that there is an intervening adverbial between the predicate and the controllee (O):

(1) xiaoming shefa [jintian xiawu san-le hui yihou] {Ø/Ø} yigeren lai
Xiaoming try today afternoon be.over-PFV meeting after 3SG by.oneself come
’Xiaoming had better try to come by himself this afternoon after the meeting is over.’ (Grano, 2015: 145)

Given the general analysis that a functionally controlled embedded subject should not be expressed, I take this pattern as evidence that the control mechanism of these equi predicates is anaphoric in nature. In contrast, some equi predicates have been identified to resist Copy Control, e.g., daibiao ‘represent’, which is an equi verb in Chinese:

(2) xiaoming, daibiao xuexiaoxue, [zai mingtian fangxuehuo] {Ø/Ø} canjia bisai
Xiaoming represent school at tomorrow after school 3SG participate competition
lit: Xiaoming represents the school to participate in the competition tomorrow after school
For those equi predicates which resist Copy Control, I posit that their control mechanism is functional rather than anaphoric. (3) is an Obligatory-Anaphoric-Control equi, whereas (4) is a Functional-Control equi:

(3) *sb* "try" V
First line (↑ PRED) = "TRY<SUBJ, COMP, OBJ, XCOMP>"
Second line R (((COMP SUBJ)) intimate (↑ COMP SUBJ)) = (((SUBJ) intimate (↑ COMP SUBJ))
Third line λX:LP(x, P(x), [↑ (COMP SUBJ)] = XCOMP SUBJ)
Fourth line - [[↑ (COMP ADJ E)] intimate (↑ COMP SUBJ)] = (↑ COMP SUBJ) "PRO" ∧ ¬[[↑ (COMP ADJ E)]] ∧ P(x): ∀ H.(((↑ COMP SUBJ) ∧ H) → H

(4) *diabiao" 'represent' V
First line (↑ PRED) = "REPRESENT<OBJ, SUBJ, XCOMP>
Second line (↑ SUBJ) = (↑ XCOMP SUBJ)
Third line λP(x):λx:represent(x, P(x)):[↑ (SUBJ)] = (↑ XCOMP SUBJ) → [[↑ SBJ] → [[↑ OBJ] → [[↑ OBJ] → ↑]]

This 4th constraint in (3) is used to impose the condition for Copy Control. The constraint adopts the concept of "immediate f-precedence" defined in (5):

(5) the f-structure immediately f-precedes the f-structure g (↑ f <↑ g) if and only if the rightmost node in φ↑(f) immediately c-precedes the leftmost node in φ↑(g).

If an adverbial does not immediately f-precede an embedded subject, then Copy Control is not viable, which means that the matrix predicate contributes an f-structural pronounal (together with its meaning constructor). The negative constraint can be satisfied when there is no such an adverbial. On the other hand, the f-structure sharing constraint in (4) rules out any possibility of the embedded SUBJ being realised as an overt resumptive pronoun, which would contribute a superfluous PRED value to the embedded SUBJ attribute, violating the Uniqueness condition.

Finding 2: Functional Control for partial control with athematic controller

Since Haug (2013), there is a tendency to model partial control with Quasi-obligatory Anaphoric Control, which is intended to supersede an earlier Functional-Control proposal by Asudeh (2005). Nevertheless, I have identified a group of Chinese predicates (e.g., *xiangao" want*, *rang" let*), which license partial control with an athematic object controller. Standard theta-role tests have been employed to ascertain their athematic properties. (6) is a corpus example of *rang" let* in a partial-control context enforced by the collective word *yiqi" together*:

(6) muqin aitong-de ku-zhe, [zheng xiaoren], meiyou rang ta, wu yi-qi zuo
mother sadly-DE cry-DUR Zheng Xiaoren not let 3SG together go
"The mother was crying. Zheng Xiaoren didn’t let her go together."

(6) shows the lexical entry of *rang" let*. In the meaning constructor, there is a subsumption operator, specifying that the controller is either semantically the same as or part of the controllee (see also Asudeh, 2005: 504). Since the controller is athematic, it would not appear as an argument of the let function on the meaning side.

Finding 3: Implicit control and object drop

For those Chinese complementation verbs which select for an OBJ, some (but not all) allow their OBJ to be unexpressed. When this occurs, there are two instances of unexpressed GFs. (9) is a *guli" encourage*-construction, which contains an optionally unexpressed OBJ and an obligatorily unexpressed SUBJ.
(9) xiaoming: guli {xiaomei, | ᵇn|} ᵇO, duo dushu
  Xiaoming encourage Xiao mei more read
  ‘Xiaoming encourages (Xiaomei) to read more.’

I focus on the optionally unexpressed OBJ, whose reference cannot be completely identical to the matrix SUBJ. Further empirical complexities arise from the fact that, when OBJ is unexpressed, (9) does not exclude the reading where the referents of the matrix SUBJ and the unexpressed OBJ are in an “inclusive” relation. (9) can be used to mean that Xiaoming encourages everyone (including himself) to read more, which is known as “non-specific” reading. I posit (10) to be the lexical entry of guli ‘encourage’, omitting the coreferential constraints for the unexpressed embedded SUBJ. For the use of P, see Dalrymple et al. (2018).

(10) guli
  ‘encourage’ V
1st line  (↑ PRED) = ‘ENCOURAGE <SUBJ, OBJ, COMP>’
2nd line  (↑ OBJ PRED) = ‘PRO’
  Λ \{ λP_{[x_1]} | \}; P(x_1) : ∀H.[(↑ OBJ)_{o} \rightarrow H] \rightarrow H
  \[ λP_{[y_1]} | \] \{ | {\text{perso}n(x_1)} ⇒ [x; ]; P(x_1) \} : ∀H.[(↑ OBJ)_{o} ⇒ H] \rightarrow H \}
3rd line  Λ \{↑ OBJ\}_{o} INDEX \not\rightarrow P(↑ OBJ)_{o} INDEX \}
  λxλyλP_{[x_{y}]}'[encourage(x_{y}, P)]: ↑ OBJ \rightarrow ([↑ OBJ]_{o} ⇒ (↑ OBJ)_{o} ⇒ [[↑ COMP]_{o} ⇒ ↑ y]]

The 2nd line contains two optional meaning constructors for the pronominal OBJ (when it is unexpressed). The second option has a quantifying scope to model the “non-specific” reading. (11) contains two DRSs arising from these two options, exemplifying two possible readings in the context of Zhangsan is happy, which supplies the contextual entity Zhangsan as a possible antecedent for one of the readings:

(11)

In both readings, the unexpressed OBJ must not be completely identical to the embedded unexpressed SUBJ, as required by the negative referential constraint.

Conclusion
The majority of past studies on Chinese control adopt a derivational framework. This talk will present the first study on Chinese complement control that utilises the framework of LFG+Glue+PCDRT to model coreference resolution pertaining to syntax-semantics-discourse interfaces. Through an in-depth empirical investigation, my talk will highlight intriguing patterns, which have not hitherto been reported in the existing LFG literature, and explore their respective formal solutions, which have implications for LFG’s general control mechanisms.

References: