

# CP Selection at the Syntax-Semantics Interface: A Case Study in Mandarin *think* “*xiang*”

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## The Problem

Zheng (2023) identifies a semantic shift in the Mandarin predicate *xiang* between two interpretations: *think* and *want*. The verb *xiang* also shows a very interesting complement selection pattern, which may interact with several factors (e.g., stativity). An illustration of the possible interactions is shown below (Figure 1). Hence, this work tries to mainly figure out the connections between the complements and the verb meaning. One factor I want to discuss particularly is finiteness, which I assume to be one of the factors influencing the interpretation of *xiang*.

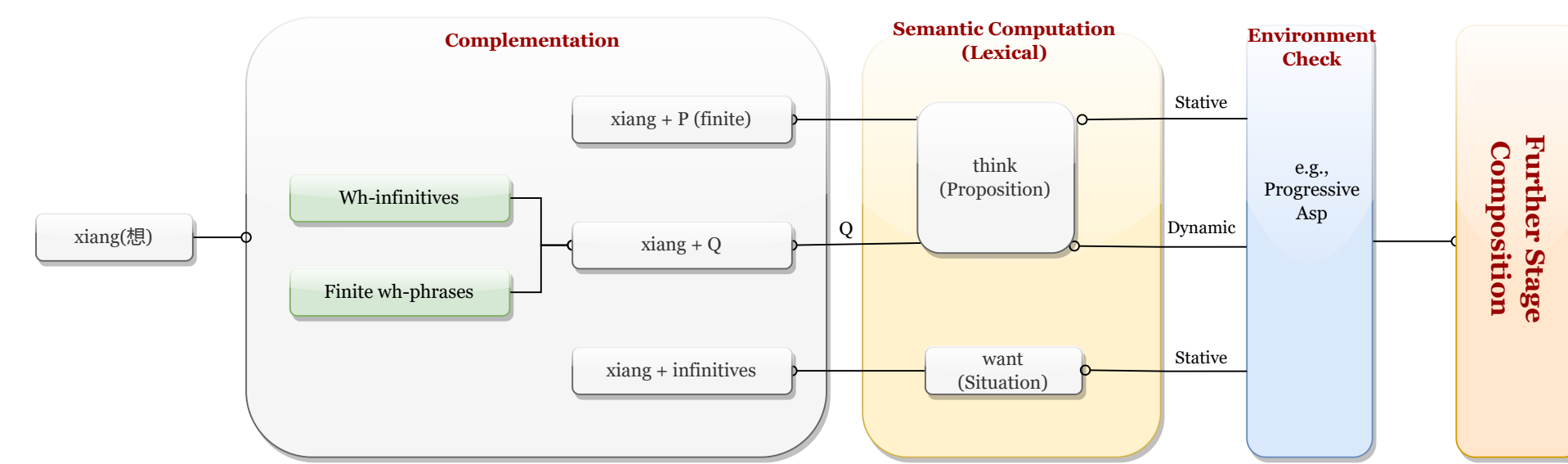


Figure 1. The empirical picture of *xiang*

Departing from a pure lexicalist view, I argue that the alternation and selection pattern we saw in *xiang* is a result of interactions at the syntax-semantics interface. The complements taken play a crucial role in the overall meaning computation (see also Moulton 2009 a.o.).

## From Aktionsart

*think* and *want* exhibit distinct Aktionsarten (lexical aspects). Progressives are known to be selecting the Aktionsart of the verb phrase (Dowty 1979, inter alios). “*xiang* (want)” does not harmonize with the progressive, but “*xiang* (think)” is compatible. This implies that only *think* is “chosen” in a dynamic environment (e.g., progressives, see 1a), excluding *want*. Additionally, a stative environment yields ambiguity for *xiang*, permitting both *think* and *want* interpretations (see 1b). Hence, a dynamic context rules out *want*. This divergence in Aktionsart holds true across languages (e.g., the ungrammatical \*be wanting in English). However, regarding the shift in *xiang*, it appears that stativity does not serve as the sole factor (I will discuss later; see ex.2).

- (1) a. Wo zai-xiang Lisi weishenme xihuan Wangwu  
I think-PROG Lisi why like Wangwu  
'I'm thinking why Lisi likes Wangwu.' (not want)
- b. Wo xiang Lisi xihuan Wangwu  
I want Lisi like Wangwu  
'I think Lisi likes Wangwu.'  
'I want Lisi to like Wangwu.'

## Finiteness in the Doxastic and Bouletic Alternation

Nevertheless, I noticed that even in a stative environment, it is interpreted doxastically as *think* within a finite clause and bouletically as *want* within a non-finite clause (see ex.2). In terms of the dynamic environment, where *xiang* usually combines with questions, *xiang* is interpreted exclusively as *think*, embedding both finite and non-finite clauses. However, I noticed that it cannot embed non-finite IntP (see ex.3<sup>a</sup>), and I leave this to further investigation. Due to the patterns we saw in the stative environment, at least another factor—finiteness—comes into play.

<sup>a</sup>Note that by saying a clause is finite, I mean the clause passes at least one diagnostic among many (e.g., indefinite time reference, compatible with epistemic modals like *keneng* (probably) and *hui* (will)).

- (2) a. Xiang P (Finite)  
Wo xiang Lisi hui canjia na-chang huiyi  
I think Lisi will attend that-cl conference  
'I think Lisi will attend that conference tonight.'
- b. Xiang P (Non-finite)  
Wo xiang Lisi canjia na-chang huiyi  
I want Lisi attend that-cl conference  
'I want Lisi to attend that conference.'

<sup>a</sup>Diagnostic: *congqian* cannot occur inside a non-finite clause but can occur inside its matrix (finite) clause.

- (3) \*Xiang non-finite IntP

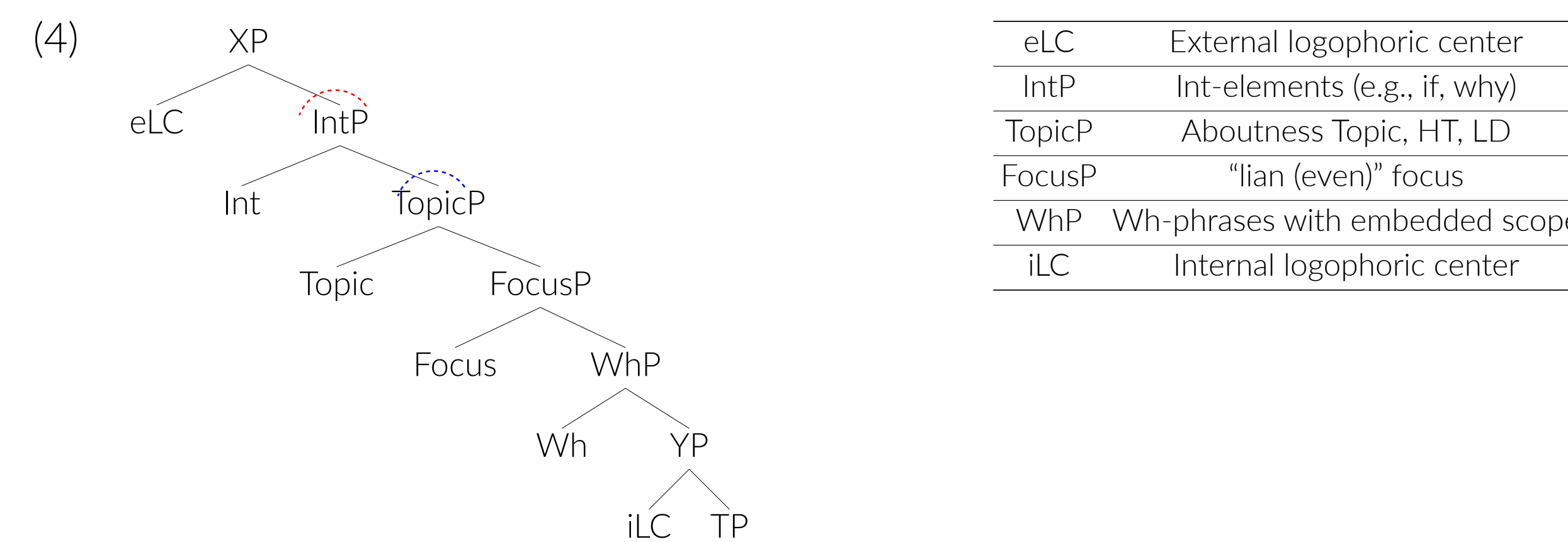
Wo (\*congqian) zai xiang Lisi ?weishenme/shifou (congqian) canjia-guo na-chang  
I before -PROG think Lisi why/whether before attend-EXP that-cl  
huiyi  
conference

'I'm thinking why/whether Lisi has attend that conference before.'

## Finiteness as Clause Size

Finiteness, a morphosyntactic feature, is defined differently in the literature (e.g., relevant to tense, agreement, and illocutionary force). The clause size view of finiteness (Pesetsky 2019 a.o.) is widely discussed in Mandarin (Grano 2015, 2017). Moreover, the clause size view seems to provide a way to give a structural analysis of the alternation in question.

Following the typology work on left peripheries of non-finite clauses by Satk (2021), I examined the fine-grained left-peripheries of Mandarin (non-)finite clauses. Given this (i.e., the cartography) is not the main focus of my study, the detailed discussion is omitted in the poster version.



The maximal left peripheries of non-finite clauses can be illustrated as in (4). The boundary between non-finite and finite clauses is indicated by the red dashed line (N.B. for the specific case of *xiang*, the boundary is indicated by the blue dashed line). Although there are many issues under debate in this cartographic approach (i.e., eLC/iCL cf. the ForceP/FinP), the structure above should suffice to show a difference in clause size between (non-)finite clauses.

## From Complementation: Implicational Complementation Hierarchy

We have seen a structural difference in the alternation, but how do we map the difference onto semantics? Wurmbbrand & Lohninger (2023)'s implicational hierarchy provides one way. Within the hierarchy are three types of complements (i.e., PROPOSITION, SITUATION and EVENT), which form an implicational relationship and respectively require a *minimal* structure (see figure 2).

Given that a certain semantic domain can take a larger structure than the minimal one proposed, in order to address this syntax-semantics mismatch, they proposed a *synthesis model*. In this model, complements are not syntactically chosen but rather possess freedom in their forms. The sole constraint arises at the interface, where the goal is to align with the semantic requirements of the predicates.

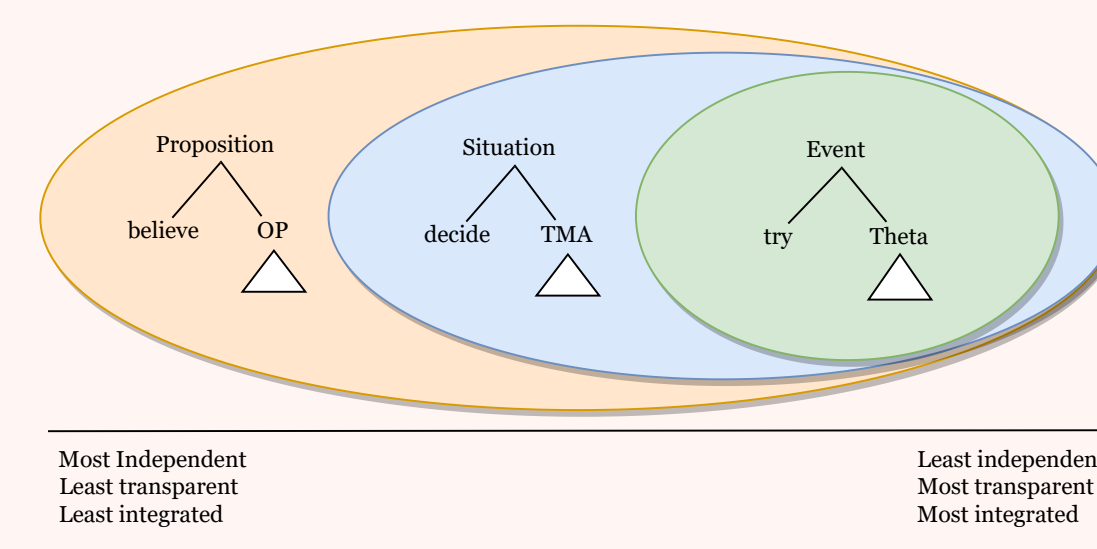


Figure 2. ICH with the minimal structure of each domain adapted from Wurmbbrand & Lohninger (2023)

This synthesis model successfully accommodates the structural difference and the clause size-semantic domain mapping in the alternation. For example, a complement that is larger than a TP can be interpreted as a PROPOSITION (e.g., think) or a SITUATION (e.g., want). However, several questions remain (more on semantics than syntax), such as why *xiang* with a larger structure (i.e., the one taken by *think*) cannot be interpreted bouletically given a larger structure is permitted. Hence, how we derive the meaning (cf. a similar issue; see also Moulton 2009) to resolve the mismatch seems to be crucial.

## Proposals: C-selection vs. S-selection

Concerning this “overgeneralization” of structures, two possibilities come to light: either the structures are eliminated by the syntax of the two entries (i.e., a verb-driven view) or the additional structures are ruled out by the mismatch between semantics inherent in the structures themselves.

### c-selection involvement

This first possibility admits the existence of two homophonous attitude predicates, “*xiang* (think)” and “*xiang* (want)”, which share the same pronunciation but exhibit distinct semantics and syntax. However, this is unfavorable for many reasons: (1) It deviates from the synthesis model we want for its cross-linguistic significance; (2), according to Grano (2021), due to failure of a zeugma test, *xiang* is underspecified rather than polysemous.

### semantics-dominated

A s-selection view will cater for the synthesis model, and at the same time, an underspecified account will possibly yield more cross-linguistic influences. One such account is to follow, e.g., Moulton (2009) and Bogal-Allbritten (2017), to assume there is a modal in the complements, quantifying the possible worlds and contributing to different interpretations (see below). The doxastic modal is located higher than the bouletic modal. Consequently, the bouletic modal is superimposed in a larger structure, preventing bouletic interpretation from co-occurring with a larger structure in Mandarin.

- (5) [[*xiang*]] =  $\lambda e$ . ATTITUDE(*e*)

- (6) a. [[Wo  $\nu_{Exp}$  *xiang* [<sub>eLC</sub>  $\emptyset_{ModalBelief}$  Lisi xihuan Wangwu]]] =  $\exists e$  [experiencer(*e*) = Wo & attitude(*e*) &  $\forall w' \in belief(e)$ : Lisi xihuan Wangwu in *w'*]
- b. [[Wo  $\nu_{Exp}$  *xiang* [<sub>TopicP</sub>  $\emptyset_{ModalDesire}$  Lisi xihuan Wangwu]]] =  $\exists e$  [experiencer(*e*) = Wo & attitude(*e*) &  $\forall w' \in desire(e)$ : Lisi xihuan Wangwu in *w'*]

## Conclusions and Other Issues

This work has mainly revealed two factors that influence the doxastic-bouletic alternation in *xiang*. Firstly, the dynamicity (e.g., a forced dynamic environment from progressives) will tint the verb with a doxastic interpretation. Secondly, I show that finiteness plays a role in the alternation and provides a structural analysis based on the clause size view of finiteness. In addition, the syntax-semantics mapping can be successfully explained by Wurmbbrand's ICH and synthesis model but a “specific” semantic requirement is needed in order to exclude a larger structure taken by *want* that is permitted by the synthesis model.

However, there are still a number of inquiries that need further investigation. The first one is regarding the stativity pattern—how can we compositionally derive the stativity influence in the meaning alternation as we did in finiteness? For example, if we replace the verb in ex.6 with *hujiao* (call) or add an extra progressive marker, the bouletic interpretation is very weak or even eliminated. This cannot be explained by the “modal-in-complement” account we adopted above. Another issue I'd like to put forward is about interrogatives (e.g., “*xiang*” cannot take non-finite IntP cf. “think”). For example, does the synthesis model (structure-meaning mapping) also give an account for the interrogative selection pattern, which is usually considered a “pure” semantic problem?

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