

## ‘Think’ or ‘want’: look-ahead problems in semantics

The Mandarin Chinese verb *xiang* allows for sentences like (1) with a ‘think’/‘want’ ambiguity. This talk will demonstrate that not only elements in the complement clause (CC), but also factors in the matrix clause (MC) can affect the interpretation, with the latter sometimes even playing a more significant role than the former. The previous analysis, which assumes that the interpretation is determined by a covert modal operator in the left periphery of the CC (Kratzer 2006, Bogal-Allbritten 2016, Grano & Lu 2021), may therefore cause look-ahead problems. To avoid this, I propose a later reading specification at the conceptual level according to the two-level-semantics (Lang & Maienborn 2011).

- (1) Zhangsan *xiang* Lisi *renshi* Wangwu.  
 Zhangsan XIANG Lisi know Wangwu.  
 ‘Zhangsan **thinks** Lisi knows Wangwu.’ or ‘Zhangsan **wants** Lisi to know Wangwu.’

**Previous analysis** Grano & Lu (2021) argue with the zeugma test (cf. Zwicky & Sadock 1975) in (2) that the meaning of *xiang* is underspecified. They assume that *xiang* denotes an underspecified attitude whose modal interpretation does not come from the semantics of its own, but from the covert belief or desire modal operator in the left periphery of the CC (cf. Kratzer 2006, Bogal-Allbritten 2016), s.(3). Based on evidences like (4), they also propose that the modal choice is determined by the syntactic structure of the CC, i.e., CP complements lead to the ‘think’ reading, whereas ‘want’ is only compatible with vPs and its CC cannot contain vP-external elements like aspect markers.

- (2) Wo he ta *xiang* de bu *yi*yang, wo *xiang* likai, ta *xiang* wo bu *ying*gai  
 1SG and 3SG XIANG PRT NEG same 1SG XIANG leave 1SG XIANG 1SG NEG should  
 likai.  
 leave.  
 ‘He and I have different ideas: I want to leave, but he thinks I shouldn’t leave.’

- (3) a.  $[[\text{xiang}]] = \lambda e. \text{ATTITUDE}(e)$   
 b.  $[[[{}_{vP} \emptyset \text{Modal}_{Desire} \text{Wangwu hen Lisi}]]]$   
 $= \lambda e. \forall w \in \text{DESIRE}(e): \text{Wangwu hates Lisi in } w$   
 c.  $[[[{}_{CP} \emptyset \text{Modal}_{Belief} \text{Wangwu hen Lisi}]]]$   
 $= \lambda e. \forall w \in \text{BELIEF}(e): \text{Wangwu hates Lisi in } w$

- (4) Zhangsan *xiang* Lisi *yijing* likai **le**.  
 Zhangsan XIANG Lisi already leave PFV.  
 ‘Zhangsan **thinks** Lisi has already left.’  
 Not: ‘Zhangsan wants it to be the case that Lisi has already left.’

This analysis has several problems. First of all, it neglects cases like (5), where the degree modification or negation of *xiang* blocks the reading ‘think’ and shifts the meaning to ‘want’. On the one hand, such cases suggest that the reading ‘want’ is also compatible with clauses bigger than vP and that the interpretation of *xiang* is not solely determined by syntax. On the other hand, it raises the look-ahead problems: if the modal meaning is determined by the operator in the CC, it would be problematic if an element that is built in the later derivation, i.e. in the MC, forces a meaning shift and requires a change of the operator.

- (5) Zhangsan **duo/bu** xiang Lisi yijing likai **le**.  
 Zhangsan much/NEG XIANG Lisi already leave PFV.  
 ‘Zhangsan much **wants**/does not want it to be the case that Lisi has already left.’

**My analysis** I adopt the assumption of underspecification, but propose that *xiang* denotes an underspecified modal taking the CC as its direct argument, see the semantic form (SF) in (6). The attitude holder and the attitude event to which the modal is anchored (Hacquard 2006) are introduced externally via the experiencer operator (cf. Kratzer 2006), s.(7). To incorporate the question-embedding property of ‘think’, I adopt the inquisitive semantics (Ciardelli, Groenendijk & Roelofsen 2013), treating both interrogative and declarative clauses as sets of propositions P. And to restrict the possible interpretations, I stipulate that the meaning of the modal expressed by *xiang* should be compatible with what its lexicon allows for, i.e.,  $MOD \in XIANG$ . I follow the two-level-semantics (Lang & Maienborn 2011) by assuming that the fine-grained meanings of a lexical item as well as the specific context-dependent reading of an underspecified expression are instantiated in the conceptual structure (CS). Accordingly, the specific readings of ‘think’ and ‘want’ are given in the CS of *xiang* in (8). This analysis solves the problems of looking ahead: In the first steps, all meaning components of a sentence are composed to a complete SF as in (9), whose meaning still needs to be specified in the CS as in (10). If there is no element in the sentence contradicting the two readings, then both interpretations are acceptable. If there are one or more than one factors influencing the interpretation, as in (4)/(5), their effects are taken into account at the last step, i.e., at the conceptual level. Since no specification is made until the whole sentence meaning is composed, the look-ahead problems are avoided.

- (6) SF:  $[[xiang]]^w = \lambda P \lambda e. MOD(P)(e) \wedge MOD \in XIANG$
- (7)  $[[EXP]] = \lambda x \lambda e. ATTITUDE(e) \wedge EXP(x)(e)$
- (8) CS:  $XIANG = \{[[xiang_{think}], [xiang_{desire}], \dots]\}$
- a.  $[[xiang_{think}]]^w = \lambda P \lambda e. \forall w' \in THINK(e) [\exists p. p \in P \wedge p(w') = 1]$
- b.  $[[xiang_{desire}]]^w = \lambda P \lambda e. \exists p: P = \{p\}. p > DES(e)_w \neg p$  (cf. Anand & Hacquard 2013)
- (9) SF:  $[[Zhangsan\ xiang\ [Lisi\ knows\ Wangwu]]]^w$   
 $= \exists e. ATTITUDE(e) \wedge EXP(z, e) \wedge MOD(\exists e'. KNOW(l, w)(e'))(e) \wedge MOD \in XIANG$
- (10) CS:  $[[Zhangsan\ xiang\ [Lisi\ knows\ Wangwu]]]^w$
- a.  $= \exists e. THINK(e) \wedge EXP(z, e) \wedge \forall w' \in THINK(e): [\exists e'. KNOW(l, w)(e') \text{ in } w']$
- b.  $= \exists e. DESIRE(e) \wedge EXP(z, e) \wedge [\exists e'. KNOW(l, w)(e')] > DES_w [\neg \exists e'. KNOW(l, w)(e')]$

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