Restricting ignorance

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Introduction

Mandarin existential *wh*-indefinites like *shénme* carry an obligatory ignorance inference. This inference supports the presence of a covert epistemic necessity modal K in the grammar (e.g., Meyer, 2013, 2014).

- This project will demonstrate the following:
- **(A) Problems:** Positing K without constraints would lead to unattested parses. Two cases: NPIs and scope interactions.
- **(B) Proposal:** K occurs only when forced syntactically by certain operators (e.g., *shénme*).

Ignorance in *wh*-indefinites

Observe: Mandarin *shénme* gives rise to ignorance inferences.

(1) Zhāngsān zài kàn *shénme* diànshìjù
ZS ASP watch what TV program
'What TV program is ZS watching?' **[Q]**
'ZS is watching some TV program, **(and that is all I know)**.' **[A]**

- **(a) Obligatory inference in non-DE contexts**

(2) ***Namely*-continuation**
... (1) ..., míngzì #(kěnéng) jiào Fánhuā
... (1) ..., name possibly call *Blossoms Shanghai*
'... (1) ... whose name is #(possibly) *Blossoms Shanghai*.'

- **(b) Not obligatory in DE contexts**

(3) Lǐ Jiàoshòu méi mǎi *shénme* cài.
Prof. Li NEG buy what dish
'Prof. Li didn't buy any dish.'

⇝ Ignorance is not lexically encoded in *shénme* alone.

Deriving ignorance via K

- Liu and Yang (2021): Ignorance is derived from exhaustification Exh (Chierchia, 2006, 2013) scoping over an epistemic modal, covert (i.e., K) when not overt (Kratzer & Shimoyama, 2002).

(4) **LF of (1):** $[Exh\ [\ K\ [$ ZS is watching ***shénme*** TV program$]]]$

- Mandarin *wh*-indefinites are existential quantifiers and trigger singleton (sub)domain alternatives (Chierchia & Liao, 2015; Liu & Yang, 2021).

Schematizing (1):

I know [ZS is watching some TV program] and [that is all] [I know].
— **prejacent** — — Exh — — K —

= **I know** ZS is watching some TV program,
and **I don't know** whether ZS is watching *Blossoms Shanghai*,
and **I don't know** whether ZS is watching *The Office*,
etc. (= I don't know which TV program exactly.)

Problem 1: NPIs

Freely using K would permit NPIs (e.g., English *any*) in non-DE contexts.

(5) * Zoe is watching **any** movie.
(6) ✓ Zoe is watching **shénme** movie. ≈(1)

- Chierchia (2006, 2013) proposes that ungrammaticality in (5) is a result of logical contradiction, induced by Exhaustifying **(sub)domain** alternatives:

(7) **LF of (5):** $[Exh\ [$ Zoe is watching **any** movie$]]$
= Zoe is watching some movie,
and **she is not** watching *Jaws*,
and **she is not** watching *Oppenheimer*,
etc. (= she is watching none of the movies).

- However, with K being present, we may see an unattested parse as shown in (8), where *any* is no longer an NPI (Zeijlstra, p.c.).

(8) **LF of (5) with K:** $[Exh\ [\ K\ [$ Zoe is watching **any** movie$]]]$

(9) a. $[Exh\ [\ldots\ any\ \ldots]] = \bot$; b. $*[Exh\ [K\ [\ldots\ any\ \ldots]]]$

- **My take:** K is not freely insertable to ***any*** environment.

Any and *shénme* share many similarities, except under non-DE contexts ⇝ **the presence of K is restricted by certain syntactic objects.**

	ALT	Exh	DE	Non-DE
Shénme	D	+	+	+
Any	D	+	+	−

Solution: Restricting K

Desideratum: The distribution of K is restrictive enough to **(a)** maintain its co-occurrence with *shénme* and **(b)** be blocked with NPIs like *any*.

- **Claim 1:** K is syntactically required by certain expressions.
While *shénme* requires K, *any* does not. Concretely, I propose that *shénme* enters into an Agree relation with K.

(10) ZS is watching *shenme* TV program.

LF: [Exh [K [... *shénme* ...]]].
$[iExh]$ $[iK]$ $[uExh;\ uK]$

- **Claim 2:** K is **only** inserted when syntactically forced by a licensing expression.

(11) ***Any* and *shénme* in Non-DE environment**
a. $[Exh\ [\ldots any_{[uExh]}\ldots]] = \bot$; b. $[Exh\ [K\ [\ldots shénme_{[uExh,uK]}\ldots]]]$

- **Is Exh subject to Claim 2?** It remains unclear why the distribution of Exh in the literature seems not to be as restricted as K.

Bibliography: Alonso-Ovalle, L., & Shimoyama, J. (2014). In *WCCFL*. **Chen, Z.** (2018). In *WCCFL*. **Chen, Z.** (2021). CUNY Ph.D. Thesis. **Chierchia, G.** (2006). *Ling Inq*. **Chierchia, G.** (2013). *Logic in Grammar*. **Chierchia, G., Fox, D., & Spector, B.** (2012). In *Semantics*. **Chierchia, G., & Liao, H.-C. D.** (2015). In *Epistemic Indefinites*. **Kratzer, A., & Shimoyama, J.** (2002). In *3rd Tokyo Conf on Psycholing*. **Liu, M., & Yang, Y.** (2021). In *SuB25*. **Magri, G.,** (2009). *Nat Lang Sem*. **Meyer, M.-C.** (2013). MIT Ph.D. Thesis. **Meyer, M.-C.** (2014). In *SALT*. **Zeijlstra, H.** (2012). *Ling Review*.

Problem 2: Scope of K

Meyer (2013) restricts K to be in matrix clauses. Otherwise, we would get:

(12) * John doubts that K Mary is at home.
Unattested reading: 'John doubts that **I know** that Mary is at home.'

- I argue further that K is only present when syntactically forced.
- This is supported by the following unattested but plausible reading.

(13) ***Only*** $>$ K **in the matrix clause**
* Carol saw only Amy$_F$. And possibly, she saw Bani$_F$.
Intended LF: * [[[Only Amy]$_1$ $\boxed{K\ [$ Carol saw $t_1]}$] & ◇[Carol saw Bani]]
(I only know Carol saw Amy, and it is possible that Carol saw Bani.)

- One might stipulate that *only* is more scopally rigid and cannot scope over K.
- With K restricted, the LF is just **unavailable**: K is not required in (13), so would not be inserted in the first place. ⇝ No stipulation on scope.

Bleeding ignorance

Obligatory ignorance of Mandarin *wh*-indefinites results from scope interaction between Exh and K. In simple positive sentence (1), scoping K over Exh results in contradiction, similar to the NPI example shown in (7).

- This contradiction may be obviated if interpolated by other operators.

A. Negation

- $Exh(ALT)(p)$ asserts the prejacent p and negates non-weaker alternatives.
- Exh negates no alternatives in ALT because of the entailment relation:
Prof. Li didn't buy *shénme* dish → Prof. Li didn't buy pasta.

(14) **LF of (3):** $[\ K\ [Exh\ [$ Prof. Li didn't buy ***shénme*** dish$]]$
= I know that Prof. Li didn't buy any dish ... and that's it.

- Under DE environment, exhaustification is vacuous.

B: *Fewer than 5*

- Similarly, the **LF1** below does not lead to contradiction—Exh is vacuous.

(15) Bùdào wǔ-gè rén mǎi-le diǎn shénme (dōngxi) sòng gěi Lisi
fewer than five-CL person buy-ASP CL what (thing) give to LS
'Fewer than five people bought something for LS.'
LF1: $[K\ [\ Exh\ [\ < 5\ [$ *wh* $]]]]$
= I know that fewer than 5 people bought something for LS.

- **LF1** is compatible with that 'I know that among them, John bought a coat.'
- There are more parses (e.g, $Exh > K$). Crucially, ignorance is not obligatory.

C: Universal quantification

- Under ∀ (e.g., deontic necessity modals, *everyone*), $K > Exh$ does not lead to contradiction, ignorance becoming non-obligatory (cf. Japanese *wh-ka*, Alonso-Ovalle & Shimoyama, 2014)

(16) Lǐsì bìxū zhù zài zhè-zuò fángzi de *nǎ-jiān* wūzi lǐ.
LS must$_{\text{Deontic}}$ stay LOC this-CL house DE which-CL room in
'LS must stay in some room or other in this house.'

(17) **LF:** $[K\ [\ Exh\ [\ \Box_{\text{Deontic}}\ [wh]]]]$ (I know LS has to stay in some room in the house, and she doesn't have to stay in **Room A**, **Room B**, or **Room C**.)
⇝ I know there is no more requirement on room assignment.