Restrictions on Rogative and Responsive Verb Complements in Uyghur

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1. Introduction

Linguists have noted semantic and syntactic differences between Rogative and Responsive (and Intensional and Extensional) predicates (Karttunen 1977; Groenendijk and Stokhof 1982; Suñer 1993; Lahiri 2002).

(1) a. **Rogative**: only take interrogative complements
b. **Resultative**: take interrogative and non-interrogative complements
c. **Intensional**: complement interpretation is index independent
d. **Extensional**: complement interpretation is index dependent

(2) Intensional Rogative: ask, wonder, depend on
Intensional Responsive: guess, estimate, matter, care
Extensional Responsive: know, tell

In Uyghur, the complementizer ***dep***, derived from *de* "say", can embed interrogative complements of intensional predicates.

(3) *Reyhan* [*kim tort-ni yé-d-i* ***dep***] *sori-d-i.*
Reyhan [who cake-ACC eat-PST-3 DEP] ask-PST-3
'Reyhan asked who ate the cake.'

dep is typically incapable of embedding interrogative complements of extensional predicates.

(4) **Reyhan* [*kim tort-ni yé-d-i* ***dep***] *bil-i-du.*
Reyhan [who cake-ACC eat-PST-3 DEP] know-NPST-3
Intended: 'Reyhan knows who ate the cake.'

An exception arises when the extensional predicate is itself in the complement of a modal verb.

(5) *Reyhan* [[*kim tort-ni yé-d-i* ***dep***] *bil-gü-si*] *kel-d-i.*
Reyhan [[who cake-ACC eat-PST-3 DEP] know-DES-POSS.3] want-PST-3
'Reyhan wondered/wanted to know who ate the cake.'

2. Proposal

Intensional predicates are complex predicates composed of an extensional predicate embedded under a modal predicate.

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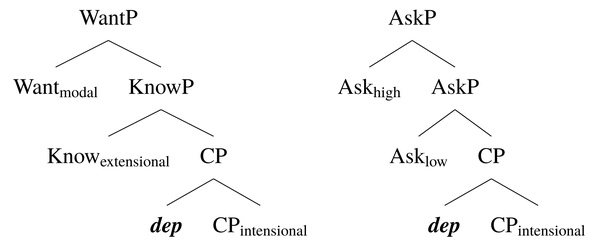


The facts can be explained thus:

(7) a. ***dep*** attaches to intensional complements.
b. Intensional complements are more complex than previously thought: three world arguments rather than two.
c. Extensional predicates can take intensional complements, but cannot close all of their world arguments: need additional modal to help.

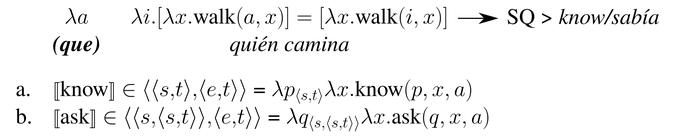
3. Ontological and Syntactic Justifications

Differences between complementation strategies of intensional and extensional predicates is not uncommon. e.g. Spanish ***que***.

(8) a. *Sue pregunto* ***que*** *cuántas charlas planeaban los estudiantes.*
Sue asked QUE how.many talks plan.3PL.IPF the students
'Sue asked how many talks the students were planning'
b. *Sue sabía cuántas charlas planeaban los estudiantes.*
Sue asked how.many talks plan.3PL.IPF the students
'Sue knew how many talks the students were planning'
[Spanish; Suñer 1993, p. 53]

Partee and Rooth (1983); Suñer (1993): extensional complements may be Semi Questions (SQ). Intensional complements are Indirect Questions (IQ); additional world abstraction.

(9) Where a and i represent indices/worlds of type s:



(10) a. $[\![\text{know}]\!] \in \langle\langle s,t\rangle,\langle e,t\rangle\rangle = \lambda p_{\langle s,t\rangle}\lambda x.\text{know}(p,x,a)$
b. $[\![\text{ask}]\!] \in \langle\langle s,\langle s,t\rangle\rangle,\langle e,t\rangle\rangle = \lambda q_{\langle s,\langle s,t\rangle\rangle}\lambda x.\text{ask}(q,x,a)$

(11) a. **Problem:** Application to ***dep***, S-selection mismatch in (5).
b. **Solution:** Same type, different number of world arguments.

(12) a. Indirect Question Old Definition: $\lambda w \lambda w'.\phi(w) = \phi(w')$
b. **Indirect Question Proposed Definition**: $\lambda w.\phi(w) = \phi(w') = \phi(w'')$

Kratzer (2006); Moulton (2009): complementizers are type shifters, $\langle\langle s,t\rangle,\langle e,t\rangle\rangle$.

(13) a. $[\![\text{COMP}]\!] = \lambda p \lambda x.\forall w[\textsc{comp}(x,w) \rightarrow p(w)]$
b. $[\![\text{Semi-Question } \phi]\!] = \lambda w.\phi(w) = \phi(w')$
c. $[\![\text{COMP(SQ)}]\!] = \lambda x.\forall w[\textsc{comp}(x,w) \rightarrow \phi(w) = \phi(w')]$

Once SQ undergoes type shifting, world argument w' can be abstracted and undergo RESTRICT (Chung and Ladusaw 2004) with the world argument of the verb.

(14) a. $[\![\text{know}]\!] = \lambda x \lambda w.\text{know}(w,x)$
b. $[\![\lambda w' \text{ COMP(SQ)}]\!] = \lambda x \lambda w'.\forall w[\textsc{comp}(x,w) \rightarrow \phi(w) = \phi(w')]$
c. $[\![\text{know(14b)}]\!] = \lambda w'.\exists x[\text{know}(w',x) \wedge \forall w[\textsc{comp}(x,w) \rightarrow \phi(w) = \phi(w')]]$

Each attitude predicate quantifies over a worlds once. IQ complements have additional world argument to be abstracted; need two attitude predicates (e.g. *want to know*), or a complex predicate containing two smaller predicates (e.g. *ask*)

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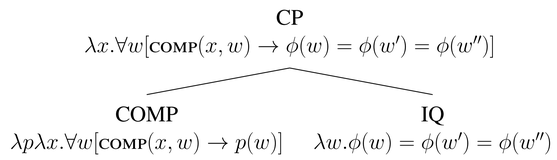

(16) a. First World: closed under "extensional" (portion of the) predicate.
b. Second World: closed under modal (portion of the) predicate.
c. Third World: combines under RESTRICT with matrix world.

4. Deriving (Un)grammaticality and Index Independence

Embedding an intensional complement under a single extensional verb is possible by s-selection, but leaves an additional world variable with no referent w'': the result is uninterpretable alone.

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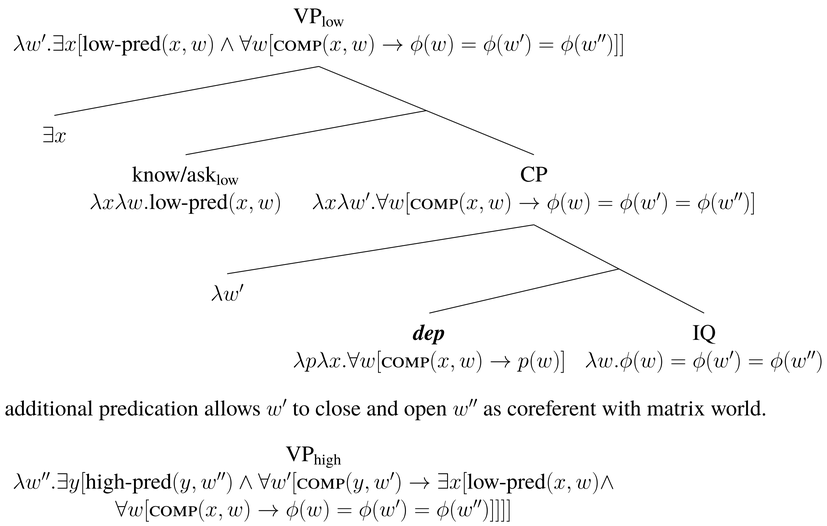

Adding additional predication allows w' to close and open w'' as coreferent with matrix world.

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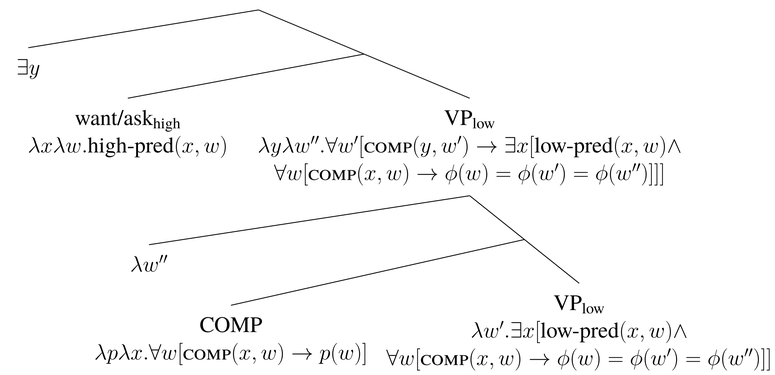

(19) a. w'' (Real World): ϕ is true, attitude holder wants worlds w' (and does not know ϕ).
b. w' (World of Want): ϕ is true, attitude holder knows an attitude compatible with w.
c. w (World of Knowledge): ϕ is true.

Index independence derived from disconnect between attitude holders knowledge in w'' vs w'.

(20) a. $[\![\text{ask}]\!](w'',w',w) \approx [\![\text{request}]\!](w'',w') + [\![\text{know}]\!](w',w)$
b. $[\![\text{guess}]\!](w'',w',w) \approx [\![\text{attempt}]\!](w'',w') + [\![\text{tell}]\!](w',w)$

5. Bibliography

Chung, Sandra, and William A Ladusaw. 2004. *Restriction and Saturation*. Cambridge, Mass.: MIT Press. ‖ Groenendijk, Jeroen, and Martin Stokhof. 1982. Semantic analysis of "wh"-complements. *Linguistics and philosophy* 175–233. ‖ Karttunen, Lauri. 1977. Syntax and semantics of questions. *Linguistics and philosophy* 1:3–44. ‖ Kratzer, Angelika. 2006. Decomposing Attitude Verbs. ‖ Lahiri, Utpal. 2002. *Questions and answers in embedded contexts.* Number 2 in Oxford studies in theoretical linguistics. Oxford ; New York: Oxford University Press. ‖ Moulton, Keir. 2009. Natural Selection and the Syntax of Clausal Complementation. Doctoral Dissertation, University of Massachusetts Amherst, Amherst. ‖ Partee, Barbara H., and Mats Rooth. 1983. Generalized conjunction and type ambiguity. In *Meaning, use, and interpretation of language*, ed. Rainer Bäuerle, Christoph Schwarze, and Arnim von Stechow, Foundation of Communication, 115–143. Berlin ; New York: W. de Gruyter. ‖ Suñer, Margarita. 1993. About Indirect Questions and Semi-Questions. *Linguistics and Philosophy* 16:45–77.