Negative Raising and Focus-Sensitivity: Evidence from Mandarin

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It is pointed out by Rooth (1996) that treating negation as a focus-sensitive (FS) operator (Jackendoff 1975) is insufficient in dealing with statements only hinting at partial answers. Beaver & Clark (2008) classify negation as a Quasi-associated operator, which evokes alternatives congruent with the Current Question and differs from conventional FS operators (e.g. *only*) w.r.t. the defeasibility of existential inference. However, how the quasi-FS reading on negation is gathered or eliminated is a mystery. In this project, I build up a bridge between the analyses of FS and Negative Raising (NR) based on Mandarin data, and argue that quasi-FS reading of contrary negation is influenced by the excluded middle (EM) presupposition and the scope interaction with the *Flouting **A*** (Beaver & Krahmer 2001).

Basic derivation of (non-)FS Rooth (1996) indicates that there are two possible structures related with focus interpretation, (1): given that *C* is an alternative set (*ALT*) with a structure identical to the sister of ~ *C*, the *ALT* constituent in (1a) contains negation while the one in (1b) doesn't.

(1) a. Free reading with narrow negation scope: [[NEG […[…]$_F$…]] ~ *C*]
b. Bound reading with wide negation scope: [NEG [[…[…]$_F$…] ~ *C*]] (Cf. Herburger 2000)

Gajewski (2007) assumes that **(i)** NR reading arises if there exists an EM, i.e., assertion (with non-NR form) and EM together entail NR reading; and **(ii)** non-NR reading is generated when EM is canceled by $\boldsymbol{A}_{<t,\,t>}$. I adopt this theory and apply it to the analysis of focus. In **Scenario 1**, I assume that a negative sentence whose NR form conveys contrary opposition presupposes EM, and that quasi-FS reading arises when EM is canceled by ***A*** (indicated by the strike), (2).

(2) a. *John doesn't like Mary*. (Unmarked reading: 'J dislikes M')
Assertion: $m \notin \lambda x.\, L\,(j, x)$
Presupposition: $m \in \lambda x.\, L\,(j, x) \vee m \in \lambda x.\, \neg\, L\,(j, x)$
$\Rightarrow m \in \lambda x.\, \neg\, L\,(j, x)$
b. *John doesn't like Mary*$_F$. (FS reading: 'It isn't M whom J likes')
Assertion: $m \notin \lambda x.\, L\,(j, x)$
~~Presupposition: $m \in \lambda x.\, L\,(j, x) \vee m \in \lambda x.\, \neg\, L\,(j, x)$~~

In **Scenario 2**, for a sentence whose NR form conveys contradictory opposition (viz. NR and non-NR readings are logically equivalent), quasi-FS reading is excluded if the existential inference "someone is going" has been suspected in the common ground, (3), or otherwise quasi-FS reading arises, (4).

(3) Q: "*Who is going to have dinner with the speaker*?" Rooth (1996)
A: "*I don't know, I_F am not going*." (Non-FS reading preferred)
(4) *John didn't invite Sue*$_F$. (Quasi-FS reading preferred)

Scope interaction of contrary negation and *A* It isn't easy to work the derivation out merely based on English data since negation can only be realized as *not* (or *n't*). Fortunately, Mandarin negative adverbials *bu* and *mei* provide us with a clear contrast: *mei* has a wider scope than *bu* (as illustrated by their distributions w.r.t. aspectual markers: *mei* can co-occur with all aspectual markers except the higher perfective *–le*, while *bu* cannot co-occur with any (5).) Hence, adopting the Neo-Davisonian Event Semantics (Kratzer 1996) and placing ***A*** in the aspectual system, I conjecture that ***mei* can scope over *A* while *bu* must be embedded inside it.**

(5) a.	*Wo*	*mei*	*dai-zhe*/	*dai-guo*/	*dai-*(**le*)/	*zai*	*dai*	*maozi*.
	1sg	NEG	wear-DUR /	wear-EXP/	wear-PERF/	DUR	wear	hat
b.	**Wo*	*bu*	*dai-zhe*/	*dai-guo*/	*dai-le*/	*zai*	*dai*	*maozi*.
	1sg	NEG	wear-DUR /	wear-EXP/	wear-PERF/	DUR	wear	hat

This hypothesis is supported by four facts. **(i)** Obligatory (Non-)NR readings: *mei* receives non-NR reading while *bu* must be locally interpreted as NR, (6). **(ii)** Generic reading: negative sentences with *bu* can have generic reading, while those with *mei* cannot. (Note that the generic operator **GEN** also belongs to the aspectual system (Chierchia 1995), (7/8)). **(iii)** Presupposition defeasibility: the soft presupposition of the sentence embedded under *mei* is defeasible, while the one under *bu* is not, (9).

(10) illustrates that even with a false presupposition, a sentence is utterable when there is a negative scoping over ***A***. In addition, *bu* behaves the same way as *mei* iff it gets a wide scope by attaching to a functional element such as the focus operator *shi* 'be' or the outer modal *hui* 'will'. This accords with **(iv)** the distribution of (non-)FS readings: *mei* (*bu-you* 'not-have'), *bu-shi* 'not-be' and *bu-hui* 'not-will' are quasi-FS, while the bare *bu* must be non-FS, (11). Hence it is plausible to assume that quasi-FS readings on *bu* in (11) should be attributed to ***A*** (encoded in the lexicon of *you*/*shi*/*hui*) rather than *bu* itself, and that **negation** (whose NR form conveys contrary opposition) **gets quasi-FS reading iff it scopes over *A* at LF**. This is because ***A*** prevents negation from lowering to the VP tier so that negation cannot appear inside the *ALT* structure.

(6) *Wo mei*/ #bu *xiang likai zheli*, but I don't feel bad if you ask me to leave.
1sg NEG/ NEG want leave here
'I don't have the desire of leaving here, but I don't feel bad if you ask me to leave.'
'I have the desire of not-leaving here, but I don't feel bad if you ask me to leave.'

(7) *Yuehan bu chi niurou*
John NEG eat beef
'J has the habit of not-eating beef.'
#'J doesn't have the habit of eating beef.'

(8) a. [$_{IP}$ *John* [**GEN** [*bu* [$_{VP}$ t_i *eat beef*]]]
b. **GEN** s [$_{Restriction}$ beef' (*x*) $\wedge C$ (*j*, *x*, *s*)] [$_{Scope}$ NEG [eat' (*j*, *x*, *s*)]]

(9) *Yuehan mei*/ *#bu xihuan Mali*, and he even doesn't know Mary.
John NEG/ NEG like Mary,
'John doesn't like, and even he doesn't know Mary.'
#'John dislikes Mary, and even he doesn't know Mary.'

(10) a. $\neg$ ***A*** (*p*) (T)
$\neg$ ***A*** (*p*) (F)
A *p* (N)

b. $\neg$ *p* (N)
$\neg$ *p* (N)

(11) a. *Yuehan mei xihuan Mali*$_F$.
John NEG like Mary
Intended: 'M isn't the person who J likes.'

b. *Yuehan bu xihuan Mali*$_F$.
John NEG like Mary
Intended: 'M is the person who J dislikes.'

c. *Yuehan bu -shi xihuan Mali*$_F$.
John NEG -FOC like Mary
Intended: 'It isn't the case that J likes M$_F$.'

d. *Yuehan bu -hui xihuan Mali*$_F$.
John NEG -MOD like Mary
Intended: 'It isn't possible that J likes M$_F$.'

What's more, given that the interpretational difference in Scenario 1 results from scope interaction between contrary negation and ***A***, I assume that the Tripartite Structure (TS) can have multiple tiers, (12/13). This analysis presumably applies to other operators as well.

(12) FS LF: [NEG [***A*** [$_{ALT}$ …[…]$_F$…]]] TS: NEG ⟨λ*OP* [*OP* ⟨λ*x*.*P*(*x*), *a*⟩], ***A***⟩

(13) Non-FS LF: [***A*** [$_{ALT}$ NEG[…[…]$_F$…]]] TS: ***A***⟨λ*OP* [*OP* ⟨λ*x*.*P*(*x*), *a*⟩], NEG⟩

Conclusions **First**, I show that contradictory negation is interpreted as non-FS iff the existential inference has been suspected and as quasi-FS otherwise. **Second**, I argue that (non-)FS readings on negation can be analyzed along the same line as (non-)NR: negation whose NR form conveys contrary opposition presupposes EM; quasi-FS arises iff negation scopes over the *Flouting **A*** (which cancels the EM presupposition), and non-FS otherwise.

Selected Reference Beaver, D., and Emiel **Krahmer.** 2001, Presupposition and partiality: Back to the future. *Journal of Logic, Language and Information*, 10: 147-182; **Beaver**, D. and Brady **Clark**. 2008, *Sense and Sensitivity: How Focus Determines Meaning*, Wiley-Blackwell; **Chierchia**, G. 1995, Individual-level Predicates as Inherent Generics, in G.N. Carlson & F.J. Pelletier eds., *The Generic Book*, 125-175, Chicago: University of Chicago Press. **Gajewski**, J. 2007, Neg-Raising and Polarity, *Linguistics and Philosophy* 30:289-328; **Herburger,** E. 2000, *What counts: Focus and Quantification*, Cambridge: MIT Press; **Rooth**, M. 1996, Focus, In *The Handbook of Contemporary Semantic Theory*, ed. By Shalom Lappin, 271-296, London: Blackwell.