NOT-transportation as downwards movement

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Roadmap

- NEG-raising
- Some basic assumptions about NEG
- The puzzle
- Three possible solutions
- NEG lowering
- Conclusions

For more details, see

Krivochen, D. G. (in press) I like this analysis, but I don't think every linguist will: syntactic NOT-transportation, VP ellipsis, and VP pronominalisation. To appear in *Atlantis* (2021).

Krivochen, D. G. (2020) On NEG lowering into quantifiers. *Acta Linguistica Hafniesia* 53 (1). 91-125. https://doi.org/10.1080/03740463.2020.1759347

NEG-raising

Transposition of NOT(EVER) to Main Verb (Partly obligatory)

Under certain conditions (e.g., after verbs like WANT or THINK which are themselves not negated), a NOT in the embedded sentence may be moved in front of the main verb. (Fillmore, 1963: 220)

1) a. I think that he will not come → NEG-raising
   b. I don't think that he will ~~not~~ come

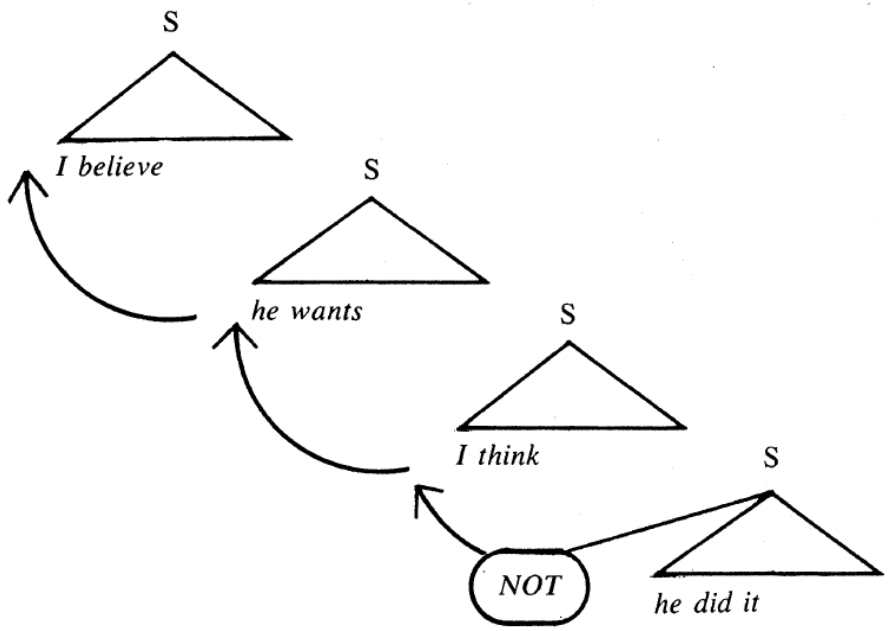
2) a. I want him not to come → NEG-raising
   b. I don't want him ~~not~~ to come

Furthermore…we have '*repeated applications of this rule* [NOT-transportation] *in successive embeddings*' (1963: 220)

In other words…

- NOT-transportation is a *cyclic rule*

3)



Horn (1978: 130)

Our assumptions

- Negation is a quantifier which can have scope over sortal or eventive entities (Keenan, 2011; Horn, 2001: Chapter 4; May, 1985: 15; Landman, 2000; Champollion, 2011; Herburger, 2011: 1646, ff., among many others)

- NEG-raising is a **syntactic** process *in the cases that we will analyse here* (but we leave open the question of whether all instances of NEG-raising should be indeed considered a unified phenomenon; see Collins & Postal, 2014, 2017)

- An immediate consequence of the second assumption is that NEG-raising should obey the *same constraints on displacement* that other instances of movement (the constraints proposed in Ross, 1967; particularly relevant here is the *Left Branch Condition*).
- This is explicitly assumed in Horn (1978: 153); Collins & Postal (2014: 103), among others.

The question, the data

- How does the interaction between NEG-raising and quantifiers in an embedded subject position work?

Consider the following examples:

4) I don't think/believe… every Japanese likes sushi → I think NEG every Japanese likes sushi

5) I don't think/believe… most Japanese like sushi → Classical NEG raising

6) I don't think/believe… some Japanese like sushi → ambiguous

   a. I think/believe… NEG some Japanese like sushi

   b. I think/believe… some Japanese NEG like sushi

7) I don't think/believe… a Japanese likes sushi → ambiguous

   a. I think/believe… a Japanese NEG likes sushi (i.e., I think that for some *x*, *x* a Japanese, *x* does *not* like sushi)

   b. I think/believe… NEG a Japanese likes sushi (i.e., I think that for *no x*, *x* a Japanese, *x* likes sushi)

8) I don't think/believe… Bill likes sushi → Classical NEG raising

9) I don't think/believe… he likes sushi → Classical NEG raising

‘Cute examples, but where’s the puzzle?’

- The puzzle is the following: some quantified NPs in subject position seem to ‘absorb’ NEG, such that a classical NEG-raising interpretation (in which NEG has raised cyclically from the embedded V predicate to the matrix V predicate) is *not available*
  - This is the case of *every N* in (4) and *some N* and *a N* in one of their interpretations.
- This is unexpected on two accounts:

(a) because subject positions should be internally opaque to syntactic rules (the so-called *Subject Condition*), and

(b) because in the cases in which NEG has scope over subjects, *it does not seem to affect the embedded predicate*. This is particularly surprising if we assume that NEG originates in the most embedded predicate

- The puzzle has two parts:

I. If NEG originated in the embedded predicate and moved cyclically towards the matrix one; how can it ever stop at the embedded subject position?, and

II. When NEG has scope over the subject, it does not appear to reconstruct at the embedded predicate at all; how is this possible under a traditional formulation of NEG-raising?

NEG > Q vs. NEG > V vs. Q > NEG vs…

This has been observed as long ago as Carden (1967, 1970)

- NEG > V corresponds to *classical NEG-raising* (Collins & Postal, 2014 et seq.)
- NEG > Q corresponds to the cases we're interested in:

10) I don't think *some/most* Japanese like sushi → *some* / *most* > NEG *or* NEG > like

- *Q > NEG cases:

11) I don't think *all* the boys left → **all* > NEG (Carden, 1970: 282)

12) I don't believe that *several* senators are communists → **several* > NEG (Epstein, 1976: 174)

- What determines whether the NEG-Q reading is *obligatory*, *optional* (such that it alternates with NEG-V), or *banned* (such that the only possible reading is NEG-V) in each case?
- What is the difference between *several* and *most* / *some* such that the latter, but not the former, allow for a NEG-raising reading?

Three possible derivations

- Scenario 1: NEG generates in the embedded predicate and moves up to the matrix predicate (*classical NEG-raising*; Collins & Postal, 2014)

a. [$_{S1}$ …think… [$_{S2}$ [QP] …NEG like sushi]] →

b. [$_{S1}$ …NEG think… [$_{S2}$ [QP] …like sushi]]

- Scenario 2: NEG generates in QP in S2 and raises to V in S1

a. [$_{S1}$ …think… [$_{S2}$ [$_{QP}$ NEG Q] … like sushi]] →

b. [$_{S1}$ …NEG think… [$_{S2}$ [$_{QP}$ Q] …like sushi]]

- Scenario 3: NEG generates as a higher predicate and lowers via Q-lowering (Carden, 1967) to the structurally closest object that can close the scope of NEG:

[$_{S1}$ …NEG think… [$_{S2}$ [$_{QP}$ Q] …like sushi]] →

a. [$_{S1}$ …think… [$_{S2}$ [$_{QP}$ NEG Q] …like sushi]] ***or***

b. [$_{S1}$ …think… [$_{S2}$ [$_{QP}$ Q] … NEG like sushi]]

Problems

- Under Scenario 1, we would expect the NEG-V reading to be always available, since NEG moves from the most embedded predicate.
  - Thus, the cases where there is no NEG-V reading but only NEG-Q remain unaccounted for
- Under Scenario 2, problems multiply:
  - On the one hand, we have a violation of the LBC. This is problematic if NEG-raising is a garden-variety movement operation and as such is constrained by familiar restrictions on movement
  - On the other hand, in this case it is the NEG-V only cases that are unaccounted for
- These two scenarios have in common the assumption that syntactic movement is always *upwards*
- *Here we will explore a third scenario: NEG-lowering*

‘Next stop’s underground’ (Page & Plant, 1975)

- The grammar contains a ‘lowering’ rule (Carden, 1967; McCawley, 1970a, b)

- NEG is base-generated at the highest position (Klima, 1964; McCawley, 1973; Akmajian & Heny, 1975; Rivero, 1994; Vicente, 2010; Martins, 2014 for metalinguistic negation), we assume *sister-adjoined to the root* (S, IP, …)

- NEG-lowering is a lexically governed, cyclic rule (just like NEG-raising)

13) I don’t think every Japanese likes sushi

a. NEG I think every Japanese likes sushi

b. I NEG think every Japanese likes sushi

c. I think NEG every Japanese likes sushi → *NEG lowering* stops here

- *Why* should it happen?

- The underlying motivation for English NEG-lowering that we propose here is *minimize NEG scope*.

- Narrow scope is preferred because as NEG goes down, it yields unambiguous structures in the sense that there are less elements it can be interpreted '*in construction with*' (Klima, 1964)

  - This view echoes remarks in Huddleston & Pullum (2002, §9.5) and Jespersen (1917) pertaining to the *preference* for more specific interpretations of negative sentences.

Let *Op* be a logical operator and X, Y, Z be expressions of whichever category can close the scope of *Op*:

a. *Op*…X…Y…Z

b. X…*Op*…Y…Z

c. X…Y…*Op*…Z

In (a), *Op* has scope over X, Y, and Z, since it should c-command all three (May, 1985; Ladusaw, 1980); this should result in three distinct semantic representations. As *Op* lowers, the possibilities narrow down, such that in (c) there is only one: *Op* has scope over Z, but not over X or Y.

A sample derivation

Structural description:

$[_S$ NEG $[_S$ NP $[_{VP}$ V $[_S$ QP $[_{VP}$ V…]]]]] →

NEG I think many Japanese like sushi ('it is not the case that I think many Japanese like sushi')

Structural change 1: $[_S$ ~~NEG~~ $[_S$ NP $[_{VP}$ NEG-V $[_S$ QP $[_{VP}$ V…]]]]] ('weak' NEG-V reading)

~~NEG~~ I NEG think many Japanese like sushi (but what do I know, right? / I am *sure* of it! -only arises if *think* bears heavy stress-)

Structural change 2: $[_S$ ~~NEG~~ $[_S$ NP $[_{VP}$ V $[_S$ $[_{QP}$ NEG [QP] $[_{VP}$ V…]]]]] (NEG-Q reading)

~~NEG~~ I think NEG-many Japanese like sushi (only a few like sushi / *many dislike sushi)

Structural change 3: $[_S$ ~~NEG~~ $[_S$ NP $[_{VP}$ V $[_S$ QP $[_{VP}$ NEG $[_{VP}$ V…]]]]] ('strong' NEG-V reading)

~~NEG~~ I think many Japanese NEG-like sushi (*only a few like sushi / many dislike sushi)

A note on the LBC

- You may wonder whether NL also violates the LBC, by virtue of adjoining NEG to an embedded subject QP
- However, in the NL framework, NEG would adjoin to the QP—thus having scope over Q and NP, by virtue of c-commanding them—without modifying the QP internally:

$[_S$ NEG $[_S [_{QP}$ Q [NP]] $[_{VP}$ V…]]]

$[_S$ ~~NEG~~ $[_S [_{QP}$ NEG $[_{QP}$ Q [NP]]] $[_{VP}$ V…]]]

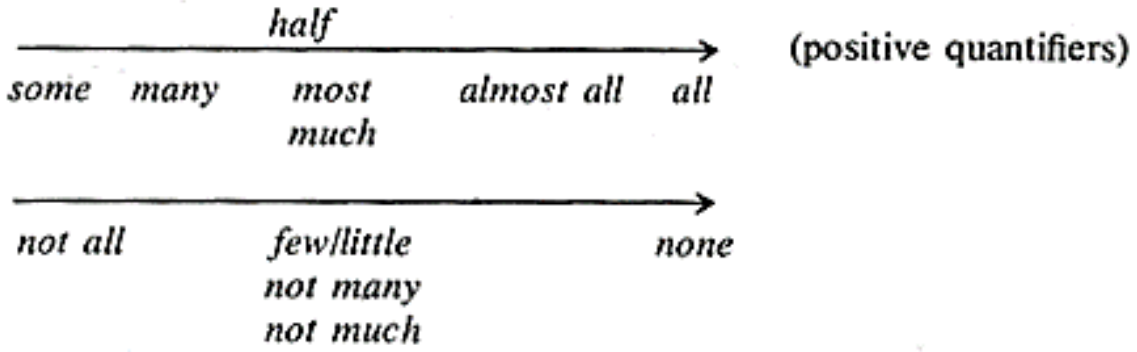
- Because there is no variable within the Specifier bound by a reordered syntactic term, the LBC is, therefore, not violated.

What do Qs allow?

Quantifier	NEG-Q	NEG-V	Example
a	✓	✓	I don't think a Japanese likes sushi.
all	✓	?	I don't think all the boys left. (not all of the boys left) However: All the men didn't leave (all stayed / not all left) (Horn, 1987)
each	*	✓	I don't think each of my friends like sushi. (*I think NEG each of my friends like sushi)
even	*	✓	I don't think even John will pass the test. (*I think not even John will pass the test)
every	✓	*	I don't think every Japanese likes sushi. (NEG-every / *NEG likes)
few	✓	✓	I don't think few linguists read Montague. (a) I think NEG few linguists read Montague. (lots of linguists did) (b) I think few linguists NEG read Montague. (few linguists did not read Montague; de re)
many	✓	✓	I don't think many linguists read Montague. (a) I think NEG many linguists read Montague. (few linguists did) (b) I think many linguists NEG read Montague. (many linguists did not read Montague; de re)
most	✓	✓	I don't think most Japanese like sushi. (a) I think NEG most Japanese like sushi. (b) I think most Japanese NEG like sushi.
only	✓	*	I don't think only John will fail the test. (*I think only John will not fail the test)
several	✓	*	I don't believe that several senators are communists. (NEG-several; see Epstein, 1976)
some	✓	✓	I don't think some Japanese like sushi. (a) I think NEG some Japanese like sushi. (b) I think some Japanese NEG like sushi.
the	*	✓	I don't think the President likes sushi. (*I think [NEG the President] likes sushi)

Some Q's do, some Q's don't

- A legitimate question is why a quantifier would allow or require a NEG-Q / NEG-V reading. Horn (1972, 1978) proposes that we need to consider the *scalarity* of quantifiers:



- *most*, *much*, and *many* are predicted to allow NEG-raising, while *all* and *some* (which are not half-points in the scale) are not (Horn, 1978: 203)
  - In other words: *all* and *some* must appear under the scope of NEG, thus giving rise to NEG-Q readings (absorbing NEG and preventing it from reaching V), not the other way around.
- However, the judgments we have obtained conflict with this generalisation: the speakers we have consulted allow for both NEG-V and NEG-Q readings with *some*.
- The question is not easier to answer than what makes a V a NEG-raiser…

Some other relevant factors

- Unsurprisingly if it is a syntactic rule, NL interacts with other aspects of syntactic construal

A. *Raising-to-object vs. S' complementation*

14) I don't want many people to come to the party (NEG > Q / NEG > V)

15) I don't think many people will come to the party (NEG > Q / *NEG > V)

- In raising-to-object the post-verbal NP is not a subject (Postal, 1971; Bruening, 2001). Subject-object asymmetries come into play

B. *Raising-to-subject + raising-to-object vs. S' complementation*

16) I don't want an Austrian t_i to be likely t_i to win the medal (adapted from Sauerland & Elbourne, 2002)

- Raising-to-subject > raising-to-object: NEG cannot be interpreted as having scope over embedded nonfinite predicates

17) I don't think an Austrian is likely t_i to win the medal

- Only raising-to-subject (+ S' complementation): NEG may be interpreted as having scope over embedded *be likely*

C. *De re* vs. *de dicto*

Distinct structural descriptions are assigned to *de re* and *de dicto* readings (Montague, 1973)

18) NEG I think [$_S$ [a Japanese$_i$] [he$_i$ likes sushi]]

Conclusions

- NEG-raising, NEG-lowering, and pragma-semantic approaches can co-exist as in the grammar of English if empirically required
  - NEG-raising and NEG-lowering say nothing about *cloud-of-the-unknown* cases (Horn, 2014; see Collins & Postal, 2017 for discussion)
  - Having NEG go down solves the problem of the cases in which the embedded V is not within the scope of NEG but its subject is. Importantly, the usual cases of NEG-raising are captured: the embedded V predicate is the narrowest scope.

The *semantic* view (e.g., Hintikka, 2002) is necessary insofar as the rule seems to be sensitive to things finer-graded than phrasal labels (not all QPs are equal)

NEG-lowering is *not* to be generalized as 'lower-α' or anything of the sort

Lasnik (2010, 2012) shows that a lowering account of NP *raising-to-subject* yields inadequate semantic representations

However, there seem to be other instances of operator lowering in the theory of grammar…

- Spanish 'raised passives' (Krivochen & Bravo, 2019)
- Interaction between Tense and modal auxiliaries in Spanish

Thank you