

I Like This Analysis, but I Don't Think Every Linguist Will: Syntactic NOT-Transportation, VP Ellipsis and VP Pronominalisation

DIEGO KRIVOCHEN
University of Oxford
diego.krivochen@ling-phil.ox.ac.uk

In this article I consider some recent objections raised against the syntactic treatment of negation in English multiclausal structures, in particular what has been called *NEG-raising*. I argue that the objections based on pronominalisation and ellipsis presented in the recent literature do pose a problem for syntactic accounts of the mechanisms of so-called *NOT-transportation* that rely on a rule of leftwards movement, as is customary in generative grammar. However, there is an alternative syntactic treatment that assumes that negation originates as a higher predicate and is subject to a rule of lowering. I show that a syntactic theory of NOT-transportation is tenable and accounts for the problematic data if NEG-raising is replaced, in the analysis of the cases considered here, by a rule of NEG-lowering.

Keywords: negation; NEG-raising; operator lowering; VP ellipsis; VP pronominalisation; rule ordering

...

Transporte de la negación, elipsis de SV y pronominalización de SV

En este artículo considero algunas objeciones recientes a un tratamiento sintáctico de la negación en estructuras multiclausaes en inglés, en particular el llamado *ascenso de la negación*. Propongo que las objeciones formuladas en la bibliografía reciente basadas en pronominalización y elipsis son en efecto problemáticas para los enfoques sintácticos al *transporte de la negación* que se basan en reglas de movimiento hacia la izquierda, como es usual en gramática generativa. No obstante, hay un enfoque alternativo que asume que la negación se origina como un predicado alto y se ve afectada por una regla de descenso.

Muestro que una teoría sintáctica del transporte de la negación es factible y puede dar cuenta de los datos problemáticos si el ascenso de la negación se reemplaza, en el análisis de los datos aquí considerados, por una regla de descenso.

Palabras clave: negación; ascenso de la negación; descenso de operador; elipsis de SV; pronominalización de SV; ordenamiento de reglas

I. INTRODUCTION

In her 2018 and 2020 articles, Pauline Jacobson put forth a number of arguments against a syntactic treatment of *NOT-transportation* (Fillmore 1963)—also known as *NEG-raising* (NR) (Horn 1971; Collins and Postal 2014; Crowley 2019)—based on the interactions of NR with VP ellipsis and VP pronominalisation. NR was originally formulated as a cyclic syntactic rule that yielded the overt reordering of a negative operator in multiclausal structures. This is exemplified in (1) and (2) (from Fillmore 1963, 220), where the (b) sentences are the output of NR applied to the structures underlying the (a) sentences:

- (1) a. I think that he will not come. → NR
 b. I don't think that he will ~~not~~ come.
- (2) a. I want him not to come. → NR
 b. I don't want him ~~not~~ to come.

In this article I focus on Jacobson's arguments against a syntactic approach to NR. While she claims that her arguments hold against NR as a syntactic rule “in any of its versions” (2018, 559), here I argue that there is at least one version of syntactic NOT-transportation that she does not consider, and that this version has independent empirical advantages and circumvents the problems that she—correctly in my opinion—identifies with the upwards movement approach to NOT-transportation (as assumed in Fillmore 1963; Lakoff 1969; Collins and Postal 2014, 2017). The scenarios that Jacobson considers in relation to NOT-transportation are the following: “[1] a rule raising NEG in the syntax and in which the semantics interprets a pre-NR level (as was the original idea). Or it could be [2] that NEG leaves a trace that is interpreted and the higher NEG is somehow invisible to the semantics. Or [3] there could be a rule lowering NEG at LF [Logical Form]” (2020, 5; numbers added). All these scenarios have one thing in common: in an NR sentence there is necessarily an occurrence of NEG—or an element bound by NEG, such as a trace or a copy—in the embedded clause. Scenarios [1] and [2] are two versions of what Chris Collins and Paul Postal refer to as *classical NR* (2014): in [1], semantic interpretation is pretransformational, whereas in [2] semantic interpretation accesses the trace or copy left by the upwards movement of NEG. Both scenarios assume that the base-generated position of NEG—or, in Minimalist terms, the position at which NEG is merged—is in the embedded clause. In [3], a rule of lowering is introduced, but only as an undoing mechanism for NR: NEG raises—and that is why it manifests morphosyntactically in the matrix clause—but there is a rule that lowers NEG at LF—after the so-called overt syntax—to yield an interpretation where it is the embedded predicate that is negated. In this case, NR effects are due to reconstruction, if NR is conceived of as a garden-variety upwards movement rule, be it syntactic or semantic, as proposed by Winifred Lechner (1998). This third scenario, which features a lowering operation, provides a segue to the core of this article.

2. ON NEG-LOWERING: EMPIRICAL MOTIVATIONS

The rule of lowering used in this article finds its empirical justification in the analysis of the interaction of NEG in biclausal structures with quantified NPs in embedded subject position as exemplified in (3) to (5), where \rightarrow indicates “is interpreted as”:

- (3) I don't think every Japanese likes sushi. \rightarrow I think NEG every Japanese likes sushi (i.e., “some do, some don't” and not “I think every Japanese NEG likes sushi”)
- (4) I don't think most Japanese like sushi. \rightarrow
- a. I think NEG most Japanese like sushi
 - b. I think most Japanese NEG like sushi
- (5) I don't think a Japanese likes sushi.¹
- a. I think a Japanese NEG likes sushi (i.e., I think that for some x , x a Japanese, x does *not* like sushi)
 - b. I think NEG a Japanese likes sushi (i.e., I think that for *no* x , x a Japanese, x likes sushi)

The issue is that in (3) to (5) NEG is not always interpreted in the embedded VP predicate—a so-called NEG-V reading, following Guy Carden (1967, 1970, 1976). Rather, what it affects sometimes is the embedded subject quantified NP—a NEG-Q reading—and only that. In (3) NEG can only affect the embedded subject, and in (4) and (5) it is possible for NEG to be interpreted as either an NP modifier or a VP modifier—thus, (4) and (5) are ambiguous. This is unexpected under a view of NR in which there is always an occurrence of NEG that has scope over the embedded predicate—overtly or at LF. For the interpretations in (3), (4a) and (5b) to arise, NEG cannot have scope over the embedded VP but only over the embedded NP subject. In other words, classical NR has problems accounting for cases where only a NEG-Q interpretation is available.

Sentences like (3) to (5) have received relatively little attention in the syntactic NOT-transportation literature, but they do pose an interesting problem to classical NR. I do not, however, see them as sufficient reason to reject a syntactic treatment altogether. In a previous article I argued that a syntactic rule of NEG-lowering (NL)—analogous to Carden's quantifier lowering (1967, 1970)—can provide an adequate account of this interaction (Krivochen 2020). From this perspective, NEG originates as a higher predicate—as proposed by James McCawley (1973a)—adjoined to the S node immediately dominating the matrix clause and optionally lowers to adjoin QPs or VPs—that is, constituents that NEG can be interpreted as having scope over—along the way.

¹ Example (5) is in principle ambiguous between a *de re* reading and a *de dicto* reading. We can see this more clearly if we consider the following tests, which disambiguate either (a) towards *de re* or (b) towards *de dicto*: (a) I think a specific Japanese doesn't like sushi / I think a Japanese, namely, Masahiro Sakurai, doesn't like sushi; (b) I think a Japanese doesn't like sushi, but I don't know exactly who.


Let us restate the problem. Suppose that NR is construed as a cyclic rule that is lexically restricted—since its structural description is met only if the matrix predicate is a NEG-raiser (Collins and Postal 2014, 10)—and applies in biclausal structures—it has access to two clauses per cycle, regardless of the number of clauses in the final string. If this rule cyclically raises NEG from a position in the embedded clause to a position in the matrix clause (Fillmore 1963, 220; Lakoff 1969; Horn 1971), then it is indeed puzzling that some quantifiers in embedded subject position incorporate NEG in such a way that it is not the embedded predicate that is negated—a NEG-V reading—but the quantifier in the subject of this predicate—a NEG-Q reading. Note, for instance, that (3) does not mean “I think every Japanese does not like sushi,” as would be predicted under classical NR assumptions in which NEG raises from the embedded predicate to the matrix predicate—what is negated is not the embedded V but only the quantifier in the subject NP, *every Japanese*. There are two important points to consider here. First, NEG does not seem to be interpreted as having scope over the embedded predicate at all in cases like (3), which means that NEG cannot have originated in the embedded clause, against what classical NR predicts. In other words, a structural description along the lines of (6) for (3) would be inadequate, since it yields an incorrect semantic interpretation—NEG-V instead of NEG-Q:

- (6) I NEG think [[every Japanese] NEG likes sushi]
- 

In sentences like (4) and (5), both NEG-V and NEG-Q readings are available: we take this to mean that NEG forms, respectively, a constituent with the embedded VP and with the embedded subject NP. This is independent of whether NEG can trigger a morphological rule affecting the quantifier, like NEG + *somebody* = *nobody* or the *some* → *any* rule. Arguably, however, that is not an issue pertaining to syntax—i.e., to configuration.

The second point to be considered is that, if in the NEG-Q cases NEG had raised from a position within the embedded subject to the matrix clause—that is, if we have classical NR but varying the position where NEG originates—in a case where NEG does not have scope over the embedded V but only over the embedded subject QP, then there is a violation of John Robert Ross’s Left Branch Condition (LBC) (1967, 207), since NEG would be moving out of a [_{QP} NEG [_{NP} every Japanese]] structure towards the matrix predicate.² This is obviously problematic if NR is a movement rule that abides by island constraints, as is assumed by Laurence Horn (1978, 153) and Collins and Postal (2014, 103), among others. Thus, a structural description like (7) must also be excluded for (3), as it violates independently motivated locality conditions:

² LBC effects have been generalised since Ross’s pioneering work (1967; see also Gazdar 1981). In some cases, they have been subsumed under a number of filters, including the Subject Condition, the Condition on Extraction Domains (Huang 1982) and conditions emerging from Multiple Spell-Out (Uriagereka 2002, 45-65).

- (7) I NEG think [[NEG [every Japanese]] likes sushi]
- 

In both upwards movement possibilities—from a position above VP but excluding the subject QP and from a position in which NEG has scope over QP but not VP—a not insubstantial subset of the examples remains unaccounted for. The NL analysis I propose elsewhere offers a solution to this puzzle by postulating that:

- NEG originates as a higher predicate, as a sister of the S node exhaustively dominating the matrix clause.
- It lowers cyclically, optionally adjoining an embedded VP or QPs along the way and yielding different interpretations, a process illustrated in (8). (Krivochen 2020)³

The stepwise cyclic application of NL can be schematically represented as follows, with the structural description (8) and its possible structural changes (8a) to (8c):

- (8) I [_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”)
- a. [_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)
- b. [_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)
- c. [_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)

In (8b), NEG adjoins QP via NL; in (8c) NEG lowers all the way to the embedded VP, adjoining it. A crucial aspect of the proposal is that NEG originates as a higher operator, a position that has a long pedigree since the first antecedent of this idea can be found in Otto Jespersen (1917, 5) and, within the generative tradition, crucial works include those by Jerrold Katz and Postal (1964), Edward Klima (1964), McCawley

³ A reviewer posed the question of whether NEG adjunction to a QP in subject position—which in X-bar theoretic terms would be the Specifier of TP/IP—would not violate the LBC as well. LBC effects—including the extensions of the LBC mentioned in the previous footnote—apply as restrictions to displacement of a syntactic object embedded in a Specifier. 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:

- i) [_S NEG [_S [_{QP} Q [NP]] [_{VP} V...]]]
 ii) [_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 not violated.

(1973a), Adrian Akmajian and Frank Heny (1975), María Luisa Rivero (1994) and Luis Vicente (2010). However, exactly how high NEG originates is not easy to specify, particularly since there are multiple levels of granularity that the clausal structure can be looked at from—from a single COMP position to a sequence of functional heads. We can determine, however, the positioning of NEG as a higher predicate with respect to displaced constituents in specific configurations, as in (9):

- (9) Every Japanese, I don't think (he) likes sushi.

To the extent that (9) is acceptable, a number of native informants I consulted have reported that the only available interpretation is NEG-V. This suggests that NEG is below the target of QP topicalisation, since otherwise the fronted QP could be a target for NL and both NEG-Q and NEG-V readings should be available. Under relatively standard generative assumptions pertaining to clause structure—a coarse-grained CP-TP-*v*P hierarchy—this would mean that NEG as a higher predicate is adjoined above the position of the subject, but below CP—if CP is the target for topicalisation. A finer-grained approach to the left periphery could propose a specific functional head to host negation—a polarity phrase. Nevertheless, given the potential issues of overgeneration related to the lack of restrictions over possible features or functional heads, in the remainder of this article I continue to use the traditional nomenclature S, which corresponds to a strictly immediate-constituent type context-free grammar.

Under NL assumptions, NEG may adjoin quantified NPs or VPs giving rise to NEG-Q and NEG-V readings, respectively. However, why would NL apply in the first place? The motivation for NL that I presented in 2020, in short, is to minimise NEG scope: the narrower the scope of NEG—and thus, the fewer interpretative options made available by the structure—the better. As NEG lowers cyclically, it yields unambiguous structures in the sense that there are fewer elements it can be interpreted “in construction with” (Klima 1964, 218), a view that echoes remarks by Jespersen (1917) and Geoffrey Pullum and Rodney Huddleston (2002, §9.5) pertaining to the preference for more specific interpretations of negative sentences. Because NEG can lower from its position as a higher operator to adjoin an embedded VP, NL can account for classical cases of NR—i.e., NEG-V only readings in biclausal structures. In addition to this, two other positions are, in principle, available in a biclausal structure: the matrix VP (8a) and the embedded subject position (8b). In addition to these two positions, as discussed below, VP adjuncts may also be targets for NL. Its application to more complex cases, beyond the classical examples of NR, are currently under research. Given the focus of the present article, the question of whether NL, as formulated I formulated it in 2020, may coexist with classical NR and even with semantic-pragmatic accounts (Gajewski 2005; Zeijlstra 2018) is left open. It is possible that each of these accounts—raising, lowering and semantic-pragmatic—may be appropriate for a specific subset of phenomena involving the position and interpretation

of NEG in multiclausal structures. Paul Crowley also acknowledges the necessity of combining syntactic processes with an Excluded Middle pragmatic account (2019). His conclusions are very different from mine, however, since the kind of syntactic process he assumes is upwards NEG movement—i.e., classical NR. A definitive answer to the question of whether a unique treatment of the dynamics of NEG placement is possible, or even desirable, would require a careful comparison between all phenomena analysed under NR assumptions from an NL perspective, which exceeds the scope of this article. However, it is possible to make some preliminary observations about particularly interesting structures. Whether NL makes any difference in the analysis of Horn clauses (Collins and Postal 2014, 34) is currently open to debate, but I do not see a problem in the derivation of, for example, (10) and (11) using NL:

(10) I do not think that ever before have so many space aliens visited Earth. (Collins and Postal 2018, 55)

(11) I don't think that ever before have the media played such a major role in a kidnapping. (Collins and Postal 2018, 54)

Collins and Postal's derivation for (11) involves two steps: from the base-generated structure (12a) below, there is fronting of the adjunct as well as subject-Aux inversion (12b) and NR (12c) (2018, 57-58). The problem with this approach is that the step in (12c) violates an island condition, since adjuncts are usually considered opaque domains—the notation $\langle X \rangle$ indicates a covert occurrence of X, that is, a trace or a copy:

- (12) a. I think that the media have [NEG₁ SOME ever before] played such a major role in a kidnapping.
 b. I think that [NEG₁ SOME ever before] have the media played such a major role in a kidnapping.
 c. I do NEG₁ think that [\langle NEG₁ \rangle SOME ever before] have the media played such a major role in a kidnapping.

In order to move from its position in the adjunct to a position in the matrix clause—under the assumption that NR is a garden-variety movement operation—NEG has to be extracted from the adjunct [(SOME) ever before], which as highlighted above would result in an island violation, since adjuncts are opaque for purposes of extraction rules. Under NR tenets, if the adjunct is not an island in this particular case, that is a fact—indeed, an exception—that needs to be explained and whose explanation requires additional assumptions. However, there is no additional machinery needed to account for (11) if NL is used, since there is no syntactic constraint that prevents adjunction to an adjunct. Therefore, a structural description like (13b) is legitimate as a subsequent derivational step from (13a) via NL:

- (13) a. NEG I think that the media have [_{XP} ever before] played such a major role in a kidnapping.
 b. NEG I think that the media have [_{XP} NEG [_{XP} ever before]] played such a major role in a kidnapping.

Because the adjunct contains an NPI, NEG cannot go any lower than adjoined to the adjunct XP. If it did, it would not have scope over the NPI and the result would be an unlicensed NPI, an ill-formed representation—note that an output constraint works as well as a derivational account based on rule ordering. An NL account correctly predicts a NEG-V reading to be excluded—**I think that the media have ever before NEG played such a major role*—whereas it is difficult to see how NR could filter it out.

I do not, of course, intend this very brief discussion to amount to a rejection of NR as a rule of the grammar. The exact division of labour between NL and NR is a question that, at this point, remains open. The availability of NEG-V and NEG-Q for different quantifiers can be summarised as may be seen in Table 1, which is slightly modified from my earlier proposal (2020, 26) and intends to be descriptive and is, of course, tentative.

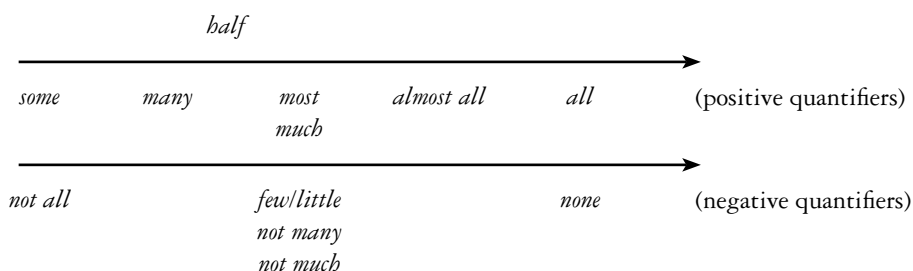
TABLE 1. Availability of NEG-I and NEG-V readings

Quantifier	NEG-Q	NEG-V	Example
<i>a</i>	✓	✓	I don't think a Japanese likes sushi.
<i>all</i>	✓	?	I don't think all the boys left. (not all of the boys left) (but see (16)-(17) below)
<i>each</i>	*	✓	I don't think each of my friends like sushi. (*I think NEG each of my friends like sushi)
<i>even</i>	*	✓	I don't think even John will pass the test. (*I think NEG even John will pass the test)
<i>every</i>	✓	*	I don't think every Japanese likes sushi. (NEG-every / *NEG likes)
<i>few</i>	✓	✓	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; <i>de re</i>)
<i>many</i>	✓	✓	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; <i>de re</i>)

<i>most</i>	✓	✓	I don't think most Japanese like sushi. (a) I think NEG most Japanese like sushi (b) I think most Japanese NEG like sushi
<i>only</i>	✓	*	I don't think only John will fail the test. (*I think only John will not fail the test)
<i>several</i>	✓	*	I don't believe that several senators are communists. (NEG-several; Epstein 1976, 174)
<i>some</i>	✓	✓	I don't think some Japanese like sushi. (a) I think NEG some Japanese like sushi (b) I think some Japanese NEG like sushi
<i>the</i>	*	✓	I don't think the President likes sushi. (*I think [NEG the President] likes sushi)

A legitimate question is why a quantifier would allow or require a NEG-Q or NEG-V reading. Horn proposes that we need to consider the scalarity of quantifiers when attempting to provide an answer to this conundrum. Figure 1 shows his quantificational scale (1972, 75; slightly revised in 1978, 203): *most*, *much* and *many* are predicted to allow NR, while *all* and *some*—which are not half-points in the scale—are not (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—and not the other way around. However, the judgments obtained conflict with this generalisation, since the speakers I have consulted allow for both NEG-V and NEG-Q readings with *some*. At this point, the data does not seem clear enough to provide a definitive answer. It does suggest, however, that a purely syntactic approach cannot provide a complete picture of the dynamics of negation in multiclausal structures and that semantic-pragmatic issues need to be taken into consideration in a unified theory of negation.

FIGURE 1. Quantificational scales



As pointed out above, the novel feature of the analysis I proposed in 2020 is not so much NEG as a higher predicate, but an optional operation of NL to account for NEG-Q and NEG-V effects in embedded clauses. The syntactic rule of NL moves NEG down the

structure and is sensitive to the elements that NEG can have scope over, adjoining NEG to quantified NPs or to VPs.⁴ But not all NPs can be interpreted under the scope of negation: descriptively, proper nouns and pronouns force a NEG-V interpretation; in NL terms, this means that NEG must lower directly to VP. Thus, (14a) and (15a) below necessarily constitute instances of classical NR—in the sense put forward by Collins and Postal (2014)—at least insofar as the readings that ensue:

- (14) a. Peter doesn't think that John is a genius.
 b. *Peter thinks that not John is a genius.
 c. Peter thinks that John is not a genius.

Note that (14a) does not ascribe to Peter a belief with respect to any person other than John; this is what makes (14b) unsuitable as a possible derivational step generated by means of NR from the embedded VP.

- (15) a. Peter_i doesn't believe that he_{ij} is a genius.
 b. *Peter_i believes that not he_{ij} is a genius.
 c. Peter_i believes that he_{ij} is not a genius.

This contrast between quantified NPs on the one hand, and proper nouns and pronouns on the other, is possibly due to the fact that neither proper nouns nor pronouns can be decomposed into logical structures involving a quantified variable and a property—a *linguist* can be decomposed as $\exists(x)$ [linguist(x)] and *every linguist* as $\forall(x)$ [linguist(x)], but proper nouns and pronouns cannot be decomposed in this way. There seems to be no quantifier in proper nouns that NEG can have scope over and therefore NEG-Q readings are not available. This forces a NEG-V interpretation for biclausal sentences containing proper nouns or pronouns in embedded subject position.

As mentioned before, the behaviour of quantified NPs is not uniform with respect to the interpretation of negation, as has been noted several times in the literature. NL is a lexically governed rule, just as classical NR (Horn 2014, xii; Collins and Postal 2014, 10): some quantifiers cannot appear under the scope of NEG (see table 1). This seems to be related to scalarity effects generated by different quantifiers, but the relation with scalarity appears to be more one of correlation than causation since *some* may appear under the scope of NEG—NEG > *some*—or be excluded from it—NEG-V. NL is an optional reordering operation involving Chomsky-adjunction of NEG to either QP or VP from a position that c-commands both—a higher position (Krivochen 2020). The optionality of NL is no different from that of NR (Fillmore 1963, 220) or *never*-raising (Collins and Postal 2014, 207), as in *You seem to never be happy nowadays* versus *You never seem to be happy nowadays*.

⁴ Elsewhere I propose a rule of SELF-lowering that applies to intensive SELF forms (Krivochen 2019). The analysis presented there provides further evidence for the existence of lowering rules in the grammar. If that is the case, then NL is not a syntactic hapax, but rather a member of a class of rules that are independently motivated.

The optionality, in traditional parlance, of a syntactic rule does not imply full equivalence between structures before and after it is applied or between derivations where the rule does and does not apply—thus, saying that NR is an optional rule is not incompatible with meaning differences (Horn 1978, 131-33; Horn 1989, §5.2). Rather, optionality in the application of a mapping rule indicates that both structures are equally well-formed. The meaning differences Horn refers to, and which are prominently featured in the pragmasemantic literature on NR, pertain to the fact that a clause with raised NEG makes a weaker statement than a clause with NEG in the embedded clause: *I don't think that p* versus *I think that NOT p*.

A combination between the proposal that NEG originates as a higher predicate and the optionality of NL may account for the fact noted by Carden (1970) and William Labov (quoted in Horn 1978, 135) in monoclausal structures that (16) is ambiguous between readings (a) and (b):

- (16) All the men didn't leave.
 a. All the men stayed. (i.e., NEG-V)
 b. Not all the men left. (i.e., NEG-Q)

If it is possible to interpret NEG in a higher position than it is pronounced, then either there is NR at LF or NEG originates as a higher predicate and lowers optionally to QPs or VPs along the way. However, since there is no embedded clause, there should be no NEG-raiser predicate to license the application of NR. If *all* is a potential host for NEG in its lowering path, then we can account for (16b) as well as (16a). However, there is more to this than that, since once we have a biclausal structure—such as *I don't think all the men left*—the NEG-V reading—*I think all the men didn't leave*—becomes much harder to obtain. This question remains open for further research.

3. THE DATA: GOING UP VERSUS GOING DOWN

3.1. NEG-Placement and VP Ellipsis

Consider first the pair in (17) (from Jacobson 2020, 6), which feature VP ellipsis in a coordinated structure where the antecedent for ellipsis and the elided structure have inverse polarity:

- (17) a. Judy didn't think that Donald would win, but Chris did.
 b. Chris thought that Donald would win, but Judy didn't.

In (17a), Chris thought that Donald would indeed win—unlike Judy—and in (17b) Judy did not think that Donald would win—unlike Chris. Crowley (2019, 19), like Jacobson (2018, 2020), also takes examples like (17) to “indicate that Neg-Raising

[*sic*] cannot be a purely syntactic phenomenon,” and his structural description for an analogous case shows NEG generated in the embedded predicate. The specific case that Crowley considers is (18a), which in his article receives the simplified analysis in (18b):

- (18) a. *John doesn't think that it will rain and Sue also does.
 b. *John doesn't think it will rain and Sue also does <think it will not rain>.

Note that NEG is contained within the domain of the most embedded predicate—*rain*. Indeed, classical NR is forced to assume that the deep structure—or pretransformational structure—of the sentences in (17) contains NEG in the embedded clause. If this is so, Jacobson argues, then the reverse-polarity phenomenon in (17a) and (17b) remains unexplained. The corresponding structures before NR and ellipsis would be (19):

- (19) a. Judy T think that Donald NEG would win, but Chris did <think that Donald NEG would win>
 b. Chris T think that Donald would win, but Judy T <think that Donald NEG would win>

Jacobson argues, correctly in my opinion, that assuming structures along the lines of (19) for (17) yields incorrect readings, since the semantics would be forced to read NEG in its supposed base-generated position; that is, in the embedded clauses (2018, 2020). If this is the case, then it is impossible to get the elided VP in (17a) to correspond to “Chris did think that Donald NEG would win”—which would be required if ellipsis is viewed as deletion-under-identity. Having ellipsis recover an antecedent and reverse its polarity is, Jacobson argues, unprecedented. Crowley similarly argues that it is not possible for NEG to be interpreted in the embedded clause and takes this to constitute evidence against a syntactic treatment of NR (2019). However, neither Jacobson nor Crowley considers a scenario where NEG originates as a higher predicate.

Examples like (17) raise interesting issues as regards the ordering of the rules of NR and NL and ellipsis. For concreteness, a syntactic approach to ellipsis along the general lines of Jason Merchant (2001) is assumed here, the crucial point being that ellipsis is taken to be a syntactic operation that deletes otherwise audible material. Can we apply both rules in a derivation, and if so, in what order? Although considering problems of rule ordering may strike some readers as dated, as long as a grammar is conceived of as algorithmic and we aim for formal explicitness as well as descriptive adequacy, rules must be ordered in such a way that inputs and outputs are specified for all processes. This includes determining when and whether the output of a rule *r* may be the input of another rule *r'*. Thus, if a rule of NR or NL is proposed and its interaction with ellipsis is analysed, then the input and output of these rules must be specified so that we can determine whether the application of one of those bleeds or feeds—or does not interact with—the other in the sense put forward by Paul Kiparsky (1968, 197-98). The issue of ordering thus arises independently of the distinction between NR and NL.

If NEG is a higher predicate, there is no need to assume that there is an occurrence of NEG in the embedded clause in (17a). Therefore, what is elided is the VP, which excludes NEG—NEG was never in the embedded clause to begin with. If ellipsis targets a VP and NL is ordered *after* ellipsis, then there is no polarity reversal effect unless required for independent reasons—as in (17), where an adversative conjunction is involved—since there is no NEG within the embedded VP at any point in the derivation. The relevant structure is (20):

- (20) {[_S NEG [_S Judy [_{VP} think [_S that [_S Donald would win]]]]] but [_S Chris did [_{VP} <think that Donald would win>]]]}

The limitation of NEG to the first conjunct in (20) and the lack of NEG in the second—that is, the polarity reversal effect—is licensed by the use of the adversative conjunction *but*, which justifies the presence of NEG in only one of the clauses—although, as seen in (17), NEG can originate in either, yielding different outputs. When a counterexpectational *but* (Vicente 2010) conjoins two clauses, *ceteris paribus*, one of the clauses must be negated; identical polarity in both clauses yields ungrammaticality:

- (21) a. *Judy thought that Donald would win but Chris did.
 b. *Judy didn't think that Donald would win but Chris didn't.

This is not an otiose point, since it establishes a crucial distinction between examples with the conjunction *but* and examples with the conjunction *and*, the latter of which is dealt with below. Once a structure for (17) has been specified, the issue is how to ensure that the VPs will be identical in both conjuncts so that VP ellipsis can apply under identity and the right reading is captured. From a lowering perspective, NEG is a sister of the S node exhaustively dominating the matrix clause; thus, its base position is above VP and the head T in (19). Above I suggested that a higher-operator analysis could be translated into contemporary generative structure by having NEG adjoined at least as high as TP; we take S to correspond, roughly, to TP and S' to CP. Ellipsis targets the embedded VP, which can be deleted under identity, and then NL may target the matrix predicate *think*, thus yielding (17a).

For completeness, I now turn to the interaction of NOT-transportation and what Jacobson refers to as *pseudo-gapping*, which she also provides compelling examples of. Consider (22) and its context (taken from Jacobson 2020, 16):

Thelma and Louise are the only two members of the Linguistics Department qualified to be concentration advisors next year. The worrisome aspect is that they are both also eligible for a one-semester sabbatical sometime during that year. But this turns out not to be a problem because:

- (22) Thelma wants to take her sabbatical in the fall, but fortunately Louise doesn't until next spring.

Jacobson claims that “the ‘missing’ material in the Louise-clause is understood as ‘want to take her sabbatical’, not ‘want to not take her sabbatical’” (2020, 16). This is obviously true, but—I contend—only counts as an argument against syntactic NOT-transportation if two additional assumptions are made: that (pseudo-)gapping, as well as VP ellipsis, is formulated as deletion under identity, and that syntactic NOT-transportation is a rule of upwards movement (NR).

I do not contest the first assumption here, although it is not uncontroversial, but note that Jacobson's example is in fact not a problem for an NL account provided that the rules of NL and pseudo-gapping/VP ellipsis in counterexpectational *but* sentences are appropriately ordered, as argued above—the order should be ellipsis/pseudo-gapping >> NL. As for licensing of *until*, and almost as a side comment, it is not clear why Jacobson claims that the relation between NEG and *until* is “not local” (2020, 17), since the structure would be as in (23), with *until next spring* adjoined to VP:

- (23) ...Louise NEG does [_{VP} [<VP>] [*until next spring*]]

Here, NEG c-commands the adjunct PP *until next spring* without there being any barrier or potential antecedent preventing syntactic licensing of *until* as an NPI from taking place. While it is true that non-NR predicates like *know* and *regret* do not allow for this licensing unless themselves negated—e.g., negated *know/regret* can license *any/ever* in an embedded clause such as *John didn't regret that Mary had {ever talked to him/ written anything to him}* (Gajewski 2005, 25-74)—it is also true that these predicates are involved in weak islandhood effects (Kiparsky and Kiparsky 1971; Rizzi 1990; Ormazábal 2005). Therefore, there is a bounding node/phase head between NEG and the item it is to license—here, *until*—and the effects are the same with NPIs like *in years*. If NEG-raisers do not give rise to factive island effects—and, as noted in Kiparsky and Carol Kiparsky (1971, 358-59), factive predicates are never NEG-raisers—then the licensing of NPIs of the *until/in years* type in the embedded clause is not surprising. The question that remains, of course, is what exactly makes a verb a NEG-raiser. To our knowledge, there is no full explanation of *why* a verb is or is not a NEG-raiser—Horn (1978) and Jon Gajewski (2005) discuss of some of the defining characteristics of the class of NR predicates—but this complex issue is beyond the scope of this article.

A further example featuring an NPI may help illustrate the point (from Jacobson 2020, 17):

- (24) Michael doesn't think we've had this much snow in ages. But I do—just two years ago we had even more.

Jacobson—correctly, in my opinion—notes that if the first clause were “think [Neg [there was this much snow (in ages)]]”, then it would not be clear how or why the ellipsis clause could be interpreted the way it is (2020, 17). But, as noted above, this only counts as an argument against classical NR, not against all forms of syntactic NEG transportation—in fact, in Jacobson’s structure NEG is introduced below the matrix predicate *think*. Once again, there is an interaction between a property of counterexpectational *but* and a higher-predicate analysis for NEG. In terms of an NL analysis, the structure of the first clause would be (25):

(25) [_S NEG [_S Michael [_{VP} [_{VP} think there was so much snow] [in ages]]]

From an NL perspective, where NEG originates as a higher predicate adjoined to the matrix S, the problematic structural description specified by Jacobson is not the base-generated structure. If VP ellipsis/pseudo-gapping takes place before NL, then the interpretation of the elided clause—if elided syntactic material is reconstructed under identity with an antecedent—is precisely what is needed: ...*but I do <think there was this much snow>*.⁵

3.2. NEG-Placement and Pronominalisation

As regards the interaction between NL and pronominalisation, another challenging example for NR examined by Jacobson (2020, 7) is presented here as (26):

- (26) a. *Judy didn’t think that Donald would win, and Chris did too/also did. (VP ellipsis)
 b. *Judy didn’t think that Donald would win, and so did Chris. (VP pronominalisation)

In pronominalisation, the VP is replaced by the pro-form *do so*; in VP ellipsis, it is replaced by \emptyset . The issue here is that the low reading for NEG is simply not available; there is no way to interpret the pro-form *do so* in (26b) as standing for “Chris also thought that Donald would not win,” which is the predicted reading under classical NR, since NEG would be introduced in the embedded clause and would affect the predicate *win*. However, again, the interpretation of NEG as a higher predicate precludes the possibility of having VP pronominalisation, since this rule requires identity of polarity. If the first conjunct is negative and the second positive, then the structural description for a rule that requires identity, be it VP pronominalisation or VP ellipsis, is not met, and thus the rule cannot apply. This accounts for the ungrammaticality of both cases in (26). This argument—the unavailability of VP pronominalisation under polarity mismatch—is independent of NR since (27) is ungrammatical (my example):

⁵ See Raquel González Rodríguez (2009) for a detailed discussion of Spanish PPIs.

(27) *John didn't swim {and/but} so did Mary.

In (27) there is no NR, which means that there is a factor in the ungrammaticality of (26) that is independent of NR—and thus, that the status of examples like (26) as empirical arguments against syntactic NR is weakened. (27) shows that VP pronominalisation in coordinated structures seems to require polarity identity, regardless of NR.

The following example (Jacobson 2020, 7) provides an interesting contrast to (26):

(28) Judy thought that Donald wouldn't win, and Chris did too/so did Chris/Chris also did
<think that Donald wouldn't win>

The interpretation that is not available for (26) is obtained without any problem in (28): NEG appears in the lower clause in the first conjunct and ellipsis as deletion under identity yields the correct reading. An adequate theory, thus, needs to be able to rule out (26) but not (28). Wider aspects of construal need to be taken into account in this case. If we are dealing with a coordinate structure and if the dynamics of NEG placement follow the usual constraints on dependencies in coordinate structures, then we may reasonably require that NR/NL apply across the board (ATB) in parallel structures—a rule applies across the board if and only if it affects all terms of a true coordinated structure (Goodall 2009). Edwin Williams proposes the following generalised definition:

(29)

The structure

$$\left[\begin{array}{cc} [X_1]c_1 & \\ \dots & \text{and} \\ [X_n]c_n & \end{array} \right]$$

Is a well-formed labelled bracketing if X_1, \dots, X_n are.

We will say that a string containing structures defined by [the bracketing above] is in ATB format. (1978, 32)

The definition of ATB structures, in combination with Grant Goodall's condition over coordination of parallel structures, means that in S-coordination with *and* both terms must feature NEG as a higher predicate. Under NL assumptions, it is possible to filter out (26) but generate (28) by assuming the following ordering between the rules of NL and pronominalisation, if NL applies across the board: NL >> pronominalisation.

A stronger version of this condition on rule ordering may be formulated as pronominalisation bleeds (ATB) NL. If NL does not apply in an ATB manner in a coordinate structure, ungrammaticality ensues for reasons independent from its interaction with pronominalisation. The reasoning behind the proposed rule ordering is that the application of VP-pronominalisation generates a pro-form replacing the

VP such that NEG cannot lower to a position where a NEG-V interpretation would be licensed—there is no internally complex VP anymore in the output of the rule and therefore no V over which NEG can have scope and generate a NEG-V interpretation. The other side of the coin is that, if pronominalisation operates under identity and NL creates a configuration whereby that identity does not hold between the VPs in both conjuncts, then the structural description for pronominalisation does not obtain. However, if NL cannot apply ATB, then there is no way to save the derivation. This may be construed as an argument in favour of a syntactic account of NEG placement, since by formulating NL as a syntactic rule, one is committed to claiming that it must obey the usual constraints on operations on coordinate structures (Ross 1967; Goodall 2009). In this respect, Horn states that “if NR is a rule of grammar, it is not surprising that it shares with other extraction rules (as well as other syntactic processes) the property of sensitivity to weak and strong island constraints” (1978, 153). Collins and Postal similarly claim that “classical NR is subject to island constraints” (2014, 103). Island constraints include, naturally, conditions over dependencies in coordinated structures such as Ross’s Coordinate Structure Constraint (1967).

Possible derivations can be illustrated as follows: in (30), NL applies in a non-ATB manner only affecting the first conjunct after pronominalisation, which produces an ungrammatical output, while in (31) NEG lowers ATB before pronominalisation, yielding a grammatical output:

- (30) a. NEG Judy T think that Donald would win and Chris T think that Donald would win.
 b. NEG Judy T think that Donald would win and Chris <think that Donald would win> → did so too (via pronominalisation under identity)
 c. *Judy didn’t think that Donald would win and Chris did so too. (via non-ATB NL)
- (31) a. NEG Judy T think that Donald would win and NEG Chris T think that Donald would win.
 b. Judy didn’t think that Donald would win and Chris didn’t think that Donald would win. (via ATB NL)
 c. Judy didn’t think that Donald would win and neither did Chris. (via pronominalisation)⁶

Of course, if pronominalisation before NL is applied in the embedded clause, there is no V for NEG to adjoin to anymore—the structural description for NL is not satisfied and the derivation must halt, generating an ill-formed output.

⁶ Strictly speaking, more is happening here. First, there is a rule of VP pronominalisation that transforms a VP into a pro-VP *do so* (Hallman 2004). Then, *so* under the scope of negation in a coordinate structure becomes *neither*, and finally *neither* is fronted, which triggers subject-auxiliary inversion. These issues have been simplified since they fall outside the scope of this article.

In summary, it is possible to filter out (26) but generate (28) under specific assumptions about when NL applies in relation to other rules such as VP ellipsis or VP pronominalisation. Jacobson's argument (2018, 2020) is not against any and every syntactic account of NEG transportation, but rather against traditional upwards NEG movement from the embedded to the matrix predicate, given the ordering between the rules of NR and VP ellipsis.

4. SOME CONCLUSIONS

The aim of this article was to examine some of Jacobson's arguments against a syntactic approach to NOT-transportation (2018, 2020) and suggest that there is at least one independently motivated version of syntactic NOT-transportation—namely, NL—which is required to account for the interaction between NR and quantifiers in embedded subject position. NL remains immune to Jacobson's arguments, since it can account for the interaction between NEG positioning and both ellipsis and pronominalisation in ways that classical NR arguably cannot. In conclusion, while Jacobson's arguments examined here do pose serious problems for a view of NOT-transportation that generates NEG as a modifier of the predicate in an embedded clause and moves it cyclically to a matrix clause, her objections to a syntactic treatment involving VP pronominalisation and VP ellipsis are not really an obstacle for an NL analysis, which is—like NR—a syntactic rule. The syntactic approach to NOT-transportation may thus live to die another day—or at the hands of another counterexample.⁷

WORKS CITED

- AKMAJIAN, Adrian and Frank Heny. 1975. *An Introduction to the Principles of Transformational Syntax*. Cambridge, MA: MIT Press.
- BACH, Emmon and Robert Harms, eds. 1968. *Universals in Linguistic Theory*. New York: Holt, Rinehart and Winston.
- BINNICK, Robert et al., eds. 1969. *Proceedings of the Fifth Annual Meeting of the Chicago Linguistic Society*. Chicago, IL: U. of Chicago P.
- CARDEN, Guy. 1967. "Quantifiers as Higher Predicates." Master's thesis, Harvard University.
- . 1970. "A Note on Conflicting Idiolects." *Linguistic Inquiry* 1 (3): 281-90.
- . 1976. *English Quantifiers: Logical Structure and Linguistic Variation*. New York: Academic Press.
- CHICAGO LINGUISTIC SOCIETY, ed. 1971. *Papers from the Seventh Regional Meeting of the Chicago Linguistic Society*. Chicago, IL: U. of Chicago P.

⁷ I would like to thank Susan F. Schmerling, Raquel González Rodríguez and the two anonymous reviewers for their insightful comments and suggestions. The usual disclaimers apply.

- COLE, Peter, ed. 1978. *Pragmatics*. Vol 9, *Syntax and Semantics*. New York: Academic Press.
- COLLINS, Chris and Paul Postal. 2014. *Classical NEG Raising: An Essay on the Syntax of Negation*. Cambridge, MA: MIT Press.
- . 2018. "Dispelling the Cloud of Unknowing: More on the Syntactic Nature of Neg Raising." In Turner and Horn 2018, 54-81.
- CROWLEY, Paul. 2019. "Neg-Raising and Neg Movement." *Natural Language Semantics* 27 (1): 1-17.
- EPSTEIN, Samuel. 1976. "Investigations in Pragmatic Theory." PhD diss., University of California.
- FILLMORE, Charles J. 1963. "The Position of Embedding Transformations in a Grammar." *Word* 19 (2): 208-31.
- FODOR, Jerry and Jerrold Katz, eds. 1964. *The Structure of Language Readings in the Philosophy of Language*. Hoboken, NJ: Prentice-Hall.
- GAJEWSKI, Jon. 2005. "Neg-Raising: Polarity and Presupposition." PhD diss., University of Michigan.
- GAZDAR, Gerald. 1981. "Unbounded Dependencies and Coordinate Structure." *Linguistic Inquiry* 12 (2): 155-84.
- GONZÁLEZ RODRÍGUEZ, Raquel. 2009. *La gramática de los términos de polaridad positiva*. Cuenca: Ediciones de la Universidad de Castilla-La Mancha.
- GOODALL, Grant. 2009. *Parallel Structures in Syntax*. Cambridge: Cambridge UP.
- HALLMAN, Peter. 2004. "Constituency and Agency in the VP." In Schmeiser et al. 2004, 101-14.
- HORN, Laurence. 1971. "Negative Transportation: Unsafe at Any Speed?" In Chicago Linguistic Society 1971, 120-33.
- . 1972. "On the Semantic Properties of Logical Operators in English." PhD diss., University of California.
- . 1978. "Remarks on Neg-Raising." In Cole 1978, 129-220.
- . 1989. *A Natural History of Negation*. Chicago, IL: U. of Chicago P.
- . 2014. Foreword to *Classical NEG Raising: An Essay on the Syntax of Negation*, by Chris Collins and Paul Postal, i-xvii. Cambridge, MA: MIT Press.
- HUANG, Cheng-Teh James. 1982. "Logical Relations in Chinese and the Theory of Grammar." PhD diss., National Taiwan Normal University.
- JACOBSON, Pauline. 2018. "Some People Think There Is Neg Raising and Some Don't: Neg Raising Meets Ellipsis." *Linguistic Inquiry* 49 (3): 559-76.
- . 2020. "Neg Raising and Ellipsis (and Related Issues) Revisited." *Natural Language Semantics* 28: 111-40.
- JESPERSEN, Otto. 1917. *Negation in English and Other Languages*. Copenhagen: A. F. Høst.
- KATZ, Jerrold and Paul Postal. 1964. *An Integrated Theory of Linguistic Descriptions*. Cambridge, MA: MIT Press.

- KIPARSKY, Paul. 1968. "Linguistic Universals and Linguistic Change." In Bach and Harms 1968, 171-202.
- KIPARSKY, Paul and Carol Kiparsky. 1971. "Fact." In Steinberg and Jakobovits 1971, 345-69.
- KLIMA, Edward. 1964. "Negation in English." In Fodor and Katz 1964, 246-323.
- KRIVOCHEN, Diego Gabriel. 2019. "On Intensive Endophoric Devices in English." *Studia Anglica Posnaniae* 54 (1): 81-112.
- . 2020. "On NEG Lowering into Quantifiers." *Acta Linguistica Hafniensia* 53 (1): 91-125.
- LAKOFF, ROBIN. 1969. "A Syntactic Argument for Negative Transportation." In Binnick et al. 1969, 149-57.
- LECHNER, Winifred. 1998. "Two Kinds of Reconstruction." *Studia Linguistica* 52 (3): 276-310.
- MCCAWLEY, James. 1973a. "On the Deep Structure of Negative Clauses." In McCawley 1973b, 277-84.
- , ed. 1973b. *Grammar and Meaning*. New York: Academic Press.
- MERCHANT, Jason. 2001. *The Syntax of Silence: Sluicing, Islands and the Theory of Ellipsis*. Oxford: Oxford UP.
- ORMAZÁBAL, Javier. 2005. "The Syntactic Distribution of Factive Complements." *Recherches Linguistiques de Vincennes* 33: 91-110.
- PULLUM, Geoffrey and Rodney Huddleston. 2002. *The Cambridge Grammar of the English Language*. Cambridge: Cambridge UP.
- RIVERO, María Luisa. 1994. "Negation, Imperatives and Wackernagel Effect." *Rivista di Linguistica* 6 (1): 91-118.
- RIZZI, Luigi. 1990. *Relativized Minimality*. Cambridge, MA: MIT Press.
- ROSS, John Robert. 1967. "Constraints on Variables in Syntax." PhD diss., Massachusetts Institute of Technology.
- SCHMEISER, Benjamin et al., eds. 2004. *Proceedings of the 23rd West Coast Conference on Formal Linguistics*. Somerville, MA: Cascadilla Press.
- STEINBERG, Danny and Leon Jakobovits, eds. 1971. *Semantics: An Interdisciplinary Reader in Philosophy, Linguistics and Psychology*. Cambridge: Cambridge UP.
- TURNER, Ken and Laurence Horn, eds. 2018. *Pragmatics, Truth and Underspecification: Towards an Atlas of Meaning*. Leiden: Brill.
- URIAGEREKA, Juan. 2002. *Derivations: Exploring the Dynamics of Syntax*. London and New York: Routledge.
- VICENTE, Luis. 2010. "On the Syntax of Adversative Coordination." *Natural Language and Linguistic Theory* 28: 381-415.
- WILLIAMS, Edwin. 1978. "Across-the-Board Rule Application." *Linguistic Inquiry* 9 (1): 31-43.
- ZEIJLSTRA, Hedde. 2018. "Does Neg-Raising Involve Neg-Raising?" *Topoi* 37 (3): 417-33.

Received 21 October 2020

Accepted 13 January 2021

Diego Gabriel Krivochen obtained his PhD from the University of Reading. He has worked on formal and computational aspects of syntactic theory, particularly on the syntax and semantics of Spanish and English auxiliary verb constructions, secondary predication and cyclicity conditions, especially those derived from coordination, as well as the links between formal language theory and linguistic analysis.