The Distribution of Negated Quantifier Phrases in English

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February 2017

Abstract: This paper investigates the syntactic distribution of negated quantifier phrases in English. I give an overview of the syntactic positions where negated quantifier phrases can and cannot appear. I propose a constraint on the distribution of [NEG DP] constituents dubbed the Negated Quantifier Phrase Constraint (NQPC). Much of the empirical material comes from Lasnik 1972/1976 and Postal 1974.

Key Words: negation, quantifiers, Short NEG Raising, Negative Inversion, raising to object, inner versus outer negation, negative polarity items, quantifier raising

1. Introduction

There is a subject/object asymmetry in the distribution of negated quantifier phrases in English. They are generally acceptable in subject position, as shown in (1), but unacceptable in object position, as shown in (2b).

(1) Not every student attended the class.

(2) a. I didn't see every student in class.
b. *I saw not every student in class.

To account for this asymmetry, I propose a constraint on the distribution of constituents of the form [NEG DP], which I call the Negated Quantifier Phrase Constraint (NQPC). [Not everybody] in (1) satisfies the NQPC, while [not everybody] in (2b) does not.

In section 2, I formulate the NQPC. In sections 3-5, I discuss subjects, negative inversion and appositive relative clauses, and show how negated quantifier phrases are permitted by the NQPC. In section 6, I discuss objects, as in cases like (2b). In section 7, I discuss Short NEG Raising. In sections 8-12, I discuss expletive constructions, raising to object, *for*-complements, post-verbal adjuncts and floated quantifiers. In section 13, I suggest a way to analyze negated quantifier phrases in possessor position consistent with the NQPC. In section 14, I make some speculative remarks on why the NQPC holds. Section 15 is the conclusion.

I have found that there is a large amount of interpersonal variation concerning the data in this paper. I have indicated some of this variation by noting where people have disagreed with the judgments and by giving the results of Google searches showing the range of possibilities. I also report on the results of Collins and Blanchette 2017, who do a Mechanical Turk study of negated quantifier phrases. But for practical purposes, I have tried to focus on explaining the data in Lasnik (1972/1976) and Postal (1974), who almost always agree with each other.

2. Negated Quantifier Phrase Constraint

As shown in the next sections, there are only three positions where negated quantifier phrases can appear: (a) subject position (Spec TP), (b) the focus position of negative inversion (Spec Foc), (c) the clause initial position of appositive relative clauses (Spec ForceP). Based on these facts, I propose the following constraint:

(3) Negated Quantifier Phrase Constraint (NQPC)
If X is an overt occurrence of [not DP], then X c-commands a clause-mate T.

T is the position of finite auxiliaries in sentences with an overt auxiliary, such as "John will see the game." I assume that there is a null T between the subject and the verb in sentences like "John ran." T is also the position of *to* in infinitival clauses. (3) specifies that the constraint only applies to overt occurrences of [not DP]. So this formulation does not apply to unpronounced scope occurrences or unpronounced lower occurrences or occurrences where *not* raises away (by Short NEG Raising).

For example, in (1), [not everybody] occupies Spec TP, which c-commands T. In (2b) [not everybody] occupies the object position which does not c-command T. So the NQPC accounts for the data in (1) and (2).

Condition (3) says nothing about the kinds of DPs that can be modified by negation (see Collins 2016 on this question). Briefly, I assume that only DPs that denote generalized quantifiers can be modified by negation. A DP of type <e>, such as a definite description, may not be modified by negation.

I propose that part of the justification of (3) is that [NEG DP] must occur overtly in a scope position (where it can be interpreted as a generalized quantifier). However, this justification does not explain all the properties of (3). First, I have given no justification for why (3) applies only to overt occurrences. Why would it not be sufficient for [NEG DP] to appear in a covert scope position (after Quantifier Raising) c-commanding T? Second, I assume that there are quantifier scope positions lower than T (c-commanded by T) as in Collins and Postal 2014. So (3) selects a subset of possible scope positions for [NEG DP] phrases. I return to these issues in section 14.

3. Subjects

Negated quantifier phrases appear as subjects:

(4) Lasnik (1972/1976: 8)
- a. Not many people arrived.
- b. Not every student passed the test.
- c. Not all of the analyses were acceptable.
- d. Not a lot of demonstrators were arrested.
- e. Not much foliage survived the frost.

(5) Postal (1974: 95)
- a. Not many gorillas have learned to tap-dance.
- b. Not much sense can be made out of that proposal.
- c. Not many Turks speak Yiddish.
- d. Not many Albanians have been interviewed by Sevareid.
- e. Not many farmers are easy to convince.

In these examples, [not DP] c-commands a clause-mate T in each case in conformity with the NQPC.

Examples with coordinate subjects are grammatical with negated quantifier phrases (see also Matyiku 2016: 4):

(6) Postal (1974: 95)
a. Not many colonels and not many majors were demoted yesterday.
b. Not much wheat and not much barley was sold to the Turks.

An example with negated universal quantifier phrases is given below:

(7) Not every boy and not every girl will follow along these lines.
(https://bible.org/article/gender-healthy-kids)

These examples pose a problem for the NQPC. For example, in (7) [not [every boy]] is a conjunct, and so does not c-command T. One possibility is that the NQPC needs to be modified to include coordinate structures: If X is an overt occurrence of [not DP], or some Boolean combination thereof, then X c-commands a clause-mate T. In either case, [NEG DP] is overtly in the position where it is interpreted.

4. Negative Inversion Focus

Negated quantifier phrases also appear as the focus of Negative Inversion constructions:

(8) Postal (1974: 98) (attributed to C.L. Baker)
a. Not many girls would Jack dance with.
b. Not many people can I think of who would put up with Oscar's manners.

(9) Collins (2016)
a. Not even John have I shown the records to.
b. Not even John did the Dean invite.

Negative Inversion is also possible with negated universal quantifier phrases:

(10) Collins and Postal (2014: 134)
Not every union has the government proposed that to.

(11) Collins and Postal (2014: 145)
I believed that not all gorillas/not every gorilla could they teach to speak Mohawk.

Sentences (8-11) satisfy the NQPC. On the assumption that the negated quantifier phrase is in Spec FocP (see Collins and Postal 2014: chapter 14), they c-command a clause-mate T. Frances Blanchette informs me that (8), (10) and (11) are unacceptable for her (and worse than (9)). Similarly, Jason Kandybowicz has told me that (11) is marginal. I do not have an account of this kind of variation in judgments. There may be additional constraints (other than the NQPC) that rule out such sentences for some speakers.

Negative Inversion is also possible with negated adverbs:

(12) Lasnik (1972/1976: 4)
Not often do I cut astronomy class.

Since *often* is not a DP, it does not fall under the NQPC. However, it is possible to formulate a more general version of (3), which refers to [not Y]: If X is an overt occurrence of [not Y], where Y denotes a generalized quantifier, then X c-commands a clause-mate T. I will refer to this as GNQPC (generalized NQPC). The advantage of the generalized version is that it also constrains negated adjunct clauses and negated adverbs.

Collins and Postal (2014: 20) give examples showing that NPIs can be negated in Negative Inversion constructions. I assume that for all these cases, the NPI is a quantifier phrase. For example, 'in weeks' can be paraphrased as 'at some time during the last few weeks'.

(13) a. Lauren hasn't worked in weeks.
b. Not in weeks has Lauren worked.

(14) a. Lauren didn't contribute a damn thing.
b. Not a damn thing did Lauren contribute.

(15) a. Lauren did not call even one student.
b. Not even one student did Lauren call.

I assume that in Negative Inversion, the negated quantifier phrase is in Spec FocP. Under that assumption, [not Y] c-commands a clause-mate T, and the GNQPC is satisfied.

It is possible to have both a negated subject quantifier phrase and Negative Inversion in the same sentence:

(16) a. Not often do not many people want to dance.
b. Not every day does not everybody want ice cream.

(17) a. Only Bob's class did not many students sign up for.
b. Only Bob did not every student praise.

The examples in (16) pose a problem for Lasnik's (1972/1976: 12) analysis. Lasnik analyzes the position of negation in examples like (4) and (5) as a sentence initial position he calls Pre-Sentence:

(18) S → Pre-S NP VP

He argues that Pre-Sentence is part of the complementizer node (pg. 22). The problem that sentences such as (16) pose for Lasnik's analysis is that one would have to say that there is a Pre-S position preceding the subject and preceding the Negative Inversion focus. In other words, each clausal layer would be associated with its own Pre-S position. The problem is that these are exactly the positions that precede quantificational DPs. So Lasnik's analysis misses a generalization (namely, that negation immediately precedes quantifier phrases), and leaves open the following question: Why do other clausal constituents not host a Pre-S NEG position?

The examples in (16) pose no problem for the NQPC. Consider (16b), both [not every day] and [not everybody] c-command a clause-mate occurrence of T (the in-situ occurrence), satisfying the NQPC.

Although the focus of this paper is the negation of quantifier DPs, NEG can also modify various adjuncts which give rise to Negative Inversion:

(19) Lasnik (1972/1976: 11)
- a. Not because he loves her does George beat his wife.
- b. George beats his wife (*not) because he loves her.
- c. George doesn't beat his wife because he loves her.
- d. Not in order to become rich did John become a linguist.
- e. John became a linguist (*not) in order to become rich.
- f. John didn't become a linguist in order to become rich.

(20) Collins and Postal (2012: 136)
- a. Not unless she is late will we miss the film.
- b. Not since Lucy met Carl has she paid any attention to Mike.

I assume that in (19b,e), the negated adverbial clauses do not c-command T. By the Linear Correspondence Axiom (Kayne 1994), if [NEG Y] c-commanded T, it would have to precede T.

The negated adverbial clauses in (19a,d) and (20) are in Spec FocP. In that position, they c-command a clause-mate T, thereby satisfying the GNQPC.

5. Appositive Relative Clauses

Negated quantifier phrases can also appear as part of the initial wh-phrase in an appositive relative clause:

(21) Postal (1974: 99)
those girls, not many of whom the judge is willing to parole

Such examples are easy to find on the internet:

(22)
- a. There are umpteen Hendrix discographies and a thriving literature on his guitars (not many of which survived intact), … (http://www.the-tls.co.uk/articles/private/architecture-84/)
- b. David's interests outside of the office centre around his family and all sporting activities, not many of which he now participates in, (http://www.rostance.co.uk/about.html)

Various other examples of negated quantifier phrases in appositive relative clauses are given below:

(23)
- a. Those girls, none of whom I like, have filed a petition.
- b. Those girls, not every one of which is guilty, have filed a petition.
- c. Those girls, not even one of which I like, have filed a petition.
- d. Those girls, not a single one of whom deserves it, have been pardoned.

I assume that the wh-phrase in a relative clause is in Spec ForceP. Therefore, in these examples, the negated quantifier phrase is in Spec ForceP, from which it c-commands a clause-mate T, satisfying the NQPC.

As pointed out by Andrew Radford, (21) allows optional Negative Inversion:

(24) a. those girls, not many of whom the judge is willing to parole.
b. those girls, not many of whom is the judge willing to parole.

A similar paradigm, involving negative indefinites, is pointed out in Collins and Postal (2014: 234, note 1):

(25) a. Those professors, none of whom they granted tenure…
b. Those professors, none of whom did they grant tenure…

I assume that in (25a), *none of whom* moves to Spec ForceP. Then in (25b), *none of whom* moves to Spec FocP (triggering Negative Inversion), before moving to Spec ForceP. So the difference between (25a,b) is that in (25a) there is no FocP, but in (25b) FocP is present.

It is possible to combine a negated quantifier phrase in Spec ForceP with one in the subject position:

(26) Those girls, not many of whom not everybody likes, are in the same class.

This sentence poses the same problem for Lasnik's (1972/1976) theory as (16) above. One would have to say that there is a Pre-S position preceding the subject and preceding the appositive relative clause. The problem is that these are also the positions that precede quantificational DPs.

6. Objects

Examples involving negated quantifiers in object position (or object of a preposition) are generally unacceptable.

(27) Postal (1974: 95)
a. *Joe kissed not many models.
b. *Jane earns not much money.
c. *Sally talked to Bob about not many problems.
d. *I bought kangaroos from not many Australians.

Universal quantifier phrases also cannot be modified by negation in object position:

(28) Kayne (2000: 244)
*John invited not all his friends/not everybody to the party.

(29) Huddleston and Pullum (2002: 807)
a. Not all people have had the opportunities you have had.
b. *I agree with not all your arguments.

Lasnik gives minimal pairs involving the passive:

(30) Lasnik (1972/1976: 3)
a. *The students solved not all of the problems.
b. Not all of the problems were solved by the students.

(31) Lasnik (1972/1976: 3)
a. Not everyone saw the play.
b. *The play was seen by not everyone.

The unacceptability of object [NEG DP] phrases follows from the NQPC in (3). For example, in (28), [not all his friends] is in object position, and from there it does not c-command T.

Reporting on Whitman (1971), Lasik says the following: "In this interesting study, Whitman tabulates acceptability judgments concerning various syntactic frames with *not*. One of the results is that *not* on a NP to the right of the verb, i.e. on an object or prepositional NP, produces the least acceptable sentences." Some examples from Whitman's paper are the following:

(32) a. Not many girls like me, do they?
b. That girl has been kissed by not many boys.
c. John didn't see not many girls.

According to Whitman's survey all 24 participants accepted (32a), all 24 participants rejected (32c), and only 7 participants accepted (32b).

Similarly, Collins and Blanchette (2017) report on a Mechanical Turk study of the naturalness judgments of negated quantifier phrases by 30 participants. Each sentence was rated on a 1 to 5 scale for naturalness, with 5 being the most natural. The following sentences illustrate their test sentences:

(33) a. Not every student attended.
b. Not many students attended.
c. Not John attended.

(34) a. I saw not every student.
b. I saw not many students.
c. I saw not John.

The resulting averages are given below:

(35)

	subject		object	
not every	4.48	(SD .72)	2.01	(SD .63)
not many	4.5	(SD .82)	2.24	(SD .73)
not name	1.31	(SD .5)	1.64	(SD .58)

The differences between the means in each row in this table are statistically significant. Whereas the difference between *not every* and *not many* in object position is significant, the difference between *not every* and *not many* in subject position is not. Collins and Blanchette (2017) suggest that one can interpret these results in terms of the inner vs. outer negation distinction (discussed below). For some speakers and some sentences, a *not many* DP in object position has an inner negation analysis, and so is not excluded by the NQPC. For a *not many* DP in subject position, both an inner negation and outer negation analysis satisfy the NQPC.

The above examples involve finite clauses. The NQPC also holds for non-finite clauses and gerunds:

(36) a. *To know not every person in the class is a problem.
b. To not know every person in the class is a problem.

(37) a. *Knowing not every person in the class is a problem.
b. Not knowing every person in the class is a problem.

Both Larry Horn and Jason Kandybowicz inform me that (36a) and (37a) are acceptable for them. I believe that there is an issue of register here. I think that (36a) and (37a) might be acceptable in a high register, but unacceptable in normal day to day speech. Larry Horn also noted that "To know/knowing not everything is a problem" is worse than (36a) and (37a) for him.

There are a number of apparent counter-examples to the generalization that negated quantifier phrases do not appear in object position. Consider the following:

(38) John invited not all of his friends, but all of his enemies.

I assume that the syntax and semantics of such constructions, referred to as contrastive negation (see McCawley 1991), are different from the syntax and semantics of negated quantifier phrases. The generalizations I describe in this paper do not hold for contrastive negation.

Data from Bosnian/Croatian/Serbian (personal communication Aida Talic) provides strong evidence that contrastive negation in (38) should be analyzed differently from negated quantifier phrases (such as (1)). In BCS, negation does not generally modify quantifier phrases, however examples like (38) are acceptable.

Another apparent counter-example to the NQPC is illustrated in (39):

(39) a. I saw not *(quite) every student at the party.
b. I ate not *(quite) all of the ice cream.

The addition of *quite* makes it possible for *not* to modify the post-verbal quantifier phrase. I propose that the structure of this sentence is:

(40) I saw [[not quite] [every student]] at the party.

In other words, I propose that [not quite] is a constituent. If this analysis is correct, then the NQPC does not apply since the object is not of the form [not DP].

When negation modifies the whole DP as in [not DP], I call this outer negation. When negation modifies some subconstituent of the DP as in [[not quite] DP], I call this inner negation. The NQPC is only relevant to cases of outer negation.

Recall that the justification for the NQPC is that a [NEG DP] must overtly occupy a scope position. But with inner negation, the negated constituent (e.g., [not quite]) does not have scope over a clause (e.g., TP). So its scope position does not c-command T, and so it is not required to c-command T overtly.

The distinction between inner and outer negation sheds light on the following contrast:

(41) a. I saw no students at the party.
b. *I saw not every student at the party.

In both (41a,b), there is a negative object, but only (41b) is ungrammatical. Following Collins and Postal 2014, I assume that the structure of the object in (41a) is: [[NEG SOME] students], where NEG is realized as *no* and SOME is unpronounced. On this analysis, *no student* is a case of inner negation, and it is not subject to the NQPC.

Furthermore, certain NPIs can be modified by negation in object position:

(42) Postal (1974: 95: footnote 9)
He found not one/a single jar of chocolate butter.

(43) Collins and Postal (2016a)
I believe that Hugh will understand not *a single thing*.

(44) Kayne (2000: 235, 237)
a. John read not a single book.
b. John spoke to not a single linguist.

(45) Huddleston and Pullum (2002: 808)
a. Not one person supported the proposal.
b. They found not one mistake.

I propose that the negated quantifier phrases in these examples do not have the structure [NEG DP] (outer negation). Rather, they have the structure [[NEG even] DP] (inner negation) (see Collins 2016 on negating *even*). For example, the structure of the negated quantifier phrase in (43) is:

(46) [[not <even>] [a single thing]]

In (46), the angled bracket notation indicates an unpronounced occurrence.

Since the structure of this DP is not [NEG DP], the NQPC is not relevant. This proposal leads to a number of questions. First, is there any independent justification for the structure in (46)? Second, why does (47) have the status it does (once again with varying grammaticality judgments across people)?

(47) ?At the party, I saw not even John let alone the more popular athletes.

Third, when is deletion of *even* possible, and when is it not possible? Consider (48):

(48) a. Not *(even) John was there.
b. Not (even) a single person was there.
c. Not (even) three people were there.

Deletion of *even* is not possible in (48a), and it is optional in (48b). At a higher register, deletion of *even* is also possible in (48c). I suggest that deletion of *even* is possible when the focus is associated with a conventional scale. In the case of (48a), there is no conventional scale associated with *John*. John may be the most likely person to be there, but that is not generally the case. In (48b), the focus is *a single*, and this is associated with a conventional numerical scale. If any people are there, the most like number of people to be there is at least one. Similarly, in (48c), the focus is *three*, and that is associated with a conventional scale, where *three* is a small number and one would expect the number of people present to be three or greater.

A number of authors like Postal (1974) and Lasnik (1972/1976) clearly mark post-verbal *not many* as ungrammatical. Similarly, Huddelston and Pullum (2002: 809) take post-verbal *not many* to be ungrammatical: "…*not very many* behaves like *not many* in marking clausal negation and being limited to pre-verbal position." However, there is variation with respect to post-verbal *not much* and *not many*, with some speakers accepting them in some sentences, as can be seen from Whitman's survey results discussed above where 7 out of 24 participants accepted (32b). Also, note that in the Collins and Blanchette (2016) study, there is a statistically significant difference between *not every* and *not many* in object position.

Furthermore, Andrew Radford has provided me with the following internet examples of *not many* and *not much*:

(49) a. Uhhh I've definitely read articles/studies that found not much in the way of correlation. (http://whisper.sh/whisper/053fe328719617d848febfa702de206dac9db7/)
b. Based on my experience, I myself learned not much from homework back when I was still in school. (http://zarielxynia.weebly.com/interpreacutetation/article-homework-by-alfie-kohn)

(50) a. I am asking this because their recent music videos have gotten not many views. (http://www.greendaycommunity.org/topic/91036-is-green-day-losing-popularity/)
b. The one with 20 Gy irradiation showed not many changes from the control: (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4709756/)

I propose that for the speakers that accept them, these examples have an inner negation analysis: [[not many] NP] (see also (57)). I do not have an account of when *many* allows inner versus outer negation.

The following examples show the interaction of the NQPC and Negative Inversion where a PP occupies Spec FocP:

(51) a. *To not everybody did I give money.
b. Not to everybody did I give money.

(52) a. *To not all reporters did he send leaks.
b. Not to all reporters did he send leaks.

(53) a. *From not everybody can you expect support.
b. Not from everybody can you expect support.

(54) a. *On not every occasion have they told us the truth.
b. Not on every occasion have they told us the truth.

(55) a. *On not all occasions have the told us the truth.
b. Not on all occasions have they told us the truth.

The examples in (51a-55a) all violate the NQPC, since [not DP] does not c-command T.

The examples in (51b-55b) raise the question of the position of origin of *not*. There are two possibilities. Either *not* is externally merged with the quantifier phrase or with the PP:

(56) a. [not [$_{PP}$ to [<not> [$_{DP}$ all reporters]]]]
b. [not [$_{PP}$ to [$_{DP}$ all reporters]]]

In (56a), *not* is combined (externally merged) with the quantifier phrase and undergoes Short NEG Raising (see section 7). In (56b), *not* is combined (externally merged) with the PP.

For both cases, a question is whether the DP or the [not DP] needs to undergo QR to a position external to the PP (namely, a position that is the sister of some clausal projection) in order to be interpreted. QR of the DP by itself (e.g., [$_{DP}$ all reporters]) to a position external to the PP would yield the wrong scope relations in both cases (*all* > *not*). So I assume that such PP external QR is not allowed (see Collins 2016 on scope freezing). QR of [not DP] would not be possible in (56b), since [not DP] is not a constituent. QR of [not DP] to a position external to PP in (56a) would violate the otherwise exceptionless generalization in English that the overt position of NEG is always higher than the scope position of the DP from which it raises (see Collins and Postal 2014: chapter 5). So I come to the somewhat unexpected conclusion that neither DP nor [not DP] occupies a PP external scope position in either case of (56).

Although I cannot distinguish between (56a,b) here, I will suggest in section 13 on possessor DPs a structure more like (56b), without Short NEG Raising. Given the structure in (56b), [$_{PP}$ to [$_{DP}$ all reporters]] must be interpreted as a generalized quantifier (in order to combine with NEG). See Heim and Kratzer 1998: 230-231 for relevant discussion on "quantifying into DP".

On the assumption that the structure in (56b) is correct, the examples in (51b-55b) all satisfy the GNQPC since [not Y] c-commands T.

For *many*, the facts are less clear. Richard Kayne points out the following:

(57) a. On not many occasions have they told us the truth.
b. In not many places on earth are people as generous as these people.

I suggest that for these examples, as well as Radford's examples in (49) and (50), it is possible to analyze negation as inner negation: [[not many] places]. I have no further insight into the contrast for now.

7. Short NEG Raising

Lasnik 1972/1976 proposes a different account of the ungrammaticality of sentences like (2b) based on a rule he calls *Not Shift:*

(58) Not Shift (pg. 9)
NP – [Tense-etc.]$_{Aux}$ -[Verb [-not-etc.]$_{NP}$]$_{VP}$ -etc.
1 2 3 4 5 6 7 →
1 - 5+2 - 3 - 4 - 5 - 6
"…shift a *not* occurring in the determiner of an NP to the right of the Aux into the Aux."

Lasnik (pg. 9) noted that negated quantifier phrases can be subjects, but not objects. Nor can they appear in the by-phrase of a passive sentence. He states "This distribution of facts can be accounted for within DT by a transformation ordered after passive, whose operation is obligatory, which would shift a *not* occurring in the determiner of NP to the right of Aux into the Aux."

The DT in this paragraph refers to 'Determiner Theory', which is the theory that negation can modify determiners such as *many* and *every*. Lasnik ultimately rejects Not Shift in favor of the Pre-S theory for reasons that need not concern us here.

Given the rule of Not Shift, examples such as (2b) are ruled out because they match the structural description for Not Shift, but it does not take place.

There is reason to reject this explanation for the ungrammaticality of (2b). Consider (59), pointed out to me by Richard Kayne:

(59) a. *Their destruction of not all the bridges was a strategic mistake.
b. *His refusal of not every bribe was exactly what we expected.

These sentences are ungrammatical, but it is unclear how they are ruled out by Not Shift. There is no tense node in the derived nominal DPs. Also, there is no place for NEG to raise to:

(60) a. *Their not destruction of all the bridges was a strategic mistake.
b. *His not refusal of every bribe was exactly what we expected.

The sentences (59a,b) are ruled out by the NQPC. In neither case do the [not DP] phrases c-command T. The sentences in (60a,b) are not ruled out by the NQPC, but by some other principle which I will not pursue here.

Even though NEG Shift does not play a role in ruling out the ungrammatical (2b), I assume that such a rule exists. I use the term Short NEG Raising to distinguish it from *Classical NEG Raising* (Collins and Postal 2014), renamed *Interclausal NEG Raising* in Collins and Postal (2016a).

In Collins and Postal 2014, Short NEG Raising plays a role in the derivation of (61a), which has the structure (61b):

(61) a. I didn't see anybody.
b. I did NEG_1 see [[<NEG_1> any] body]

In (61b), NEG_1 raises from a position modifying *any* to a post-auxiliary position.

I take Short NEG Raising to be similar to the operation that determines the placement of object clitics in the Romance languages.

(62) a. Je vous ai donné un coup de téléphone.
1SG 2 have given a blow of telephone
"I gave you a telephone call."
b. J'-ai dit à Pierre de vous donner un coup de téléphone.
1SG-have say to Pierre of 2 given a blow of telephone
"I told Pierre to give you a telephone call."

Following Kayne 1976, I assume that in these examples the clitic *vous* 'you' raises from the post-verbal position to the preverbal position (see also Ciucivara 2009). In both clitic movement and Short NEG Raising a post-verbal constituent moves to a position in the proximity of the finite auxiliary in finite clauses.

Following Collins and Postal 2014, I take Short NEG Raising to be at work in (63a). Collins and Postal 2014 assume that Short NEG Raising in this example takes place from the scope position of the object, as shown in (63b). The reason why (63b) does not violate the NQPC is that NEG has raised, and the NQPC only applies to overt occurrences. In other words, [<NEG> [many people]] (in object position) does not count as an overt occurrence for the purpose of the NQPC.

(63) a. I didn't see many people.
b. I did NEG_1 [<NEG_1> <[many people]>]$_2$ see DP_2.

A possible analysis of (1) above is that it involves Short NEG Raising to a clause initial position (e.g., the Pre-S position of Lasnik). If that were the case, then all instances of [NEG DP] would involve Short NEG Raising, in both object positon and subject position:

(64) a. Not every student attended the class.
b. [$_{CP}$ not [$_{TP}$ [<not> [every student]] attended the class]]

However, such an analysis predicts, contrary to fact, that negation and [every student] are not always adjacent (since NEG raises away from the DP):

(65) *Not yesterday every student attended the class.

8. Expletive Constructions

The indefinite associate in an expletive construction cannot be negated:

(66) a. There might not be many people there.
b. *There might be not many people there.

(67) a. There might not be enough salt.
b. *There might be not enough salt.
c. Not enough salt was put on the table.

Since [NEG DP] does not c-command T in (66b) and (67b), they are ruled out by the NQPC.

Just as in the *not much* and *not many* cases, the constraint on post-verbal *not enough* is rather weak. First, Jason Kandybowicz informs me that (66b) and (67b) are acceptable for him. Second, Andrew Radford points out the following examples:

(68) a. There might end up being not enough oil to go around.
b. There cannot be not enough patients. There can only be not enough beds. (http://lifeinthefastlane.com/there-can-only-be-not-enough-beds/)

Once again, it may be the case that for some people in some sentences there is an inner negation analysis: [[not enough] oil].

Expletive constructions generally require an indefinite associate so it is more difficult to illustrate the constraint using universal quantifiers. However, Paul Postal points out the following contrast:

(69) a. There may be everything you need in the fridge.
b. There may not be everything you need in the fridge.
c. *There may be not everything you need in the fridge.

9. Raising to Object

Just like negated quantifier phrases cannot appear as objects in simple clauses, they can also not appear as objects in raising to object constructions (contra Matyiku 2016: 4):

(70) Lasnik (1972/1976: 22)
a. I proved that not all of John's claims are correct.
b. *I proved not all of John's claims to be correct.

(71) Postal (1974: 98)
a. *Harry believes not many pilots to be familiar with Racine.
b. *Harry proved not many of those formulas to be theorems.
c. *Harry found not much grain to be stored in telephone booths.

Following Postal 1974, I assume that examples such as those in (70) and (71) involve raising to object, so that the data should be analyzed in the same way as the direct objects in section 6.

There is disagreement amongst people as to the unacceptability of (70b) and (71). One factor that may play a role is scope. For example, consider the possible scopes of [not every number of that set] in (72):

(72) I proved not every number of that set to be a prime.
a. I failed for some.

b. For that I won a Fields medal.

On a wide scope interpretation (not every > prove), a natural continuation would be (72a). On a narrow scope interpretation (prove > not every), a natural continuation would be (72b). I feel that the only possible interpretation is (72b). This judgment suggests that for the people who find (72) to be acceptable it has an ECM structure:

(73) I proved [$_{TP}$ [not every number of that set] to be prime]

In this structure, an overt occurrence of [not [every number of that set]] c-commands a clause-mate T, and there is no violation of the NQPC (see Lasnik 2001 on the optionality of object shift in English).

10. *for* Complements

Negated quantifier phrases can also be the subjects of clauses introduced by the complementizer *for*:

(74) Postal (1974: 98)
a. For not many of you to pass would be tragic.
b. It would be normal for not much to be done about that.
c. I would prefer for not much to be said about this.

In these cases, NEG cannot precede *for* (compare to the Negative Inversion examples in (51-55)):

(75) a. *Not for many of you to pass would be tragic.
b. *It would be normal not for much to be done about that.
c. *I would prefer not for much to be said about that.

Lasnik gives different judgments for sentences like (74):

(76) Lasnik (1972/1976: 21)
*For not everyone to pass the exam would be unprecedented.

But then he qualifies his judgment as follows: "Similar, though less certain, judgments obtain for the *for-to* complementizer. Here, too, I will assign the sentence with *not* a *, though I concede that it is not as obviously ungrammatical as 83'." (83' is the sentence "*What surprised me was not everyone's passing the exam.")

Even though the judgments are murkier than in other cases, a search of "for not everyone to" on Google yields lots of genuine hits:

(77) a. I still struggle with recognizing that it's OK for not everyone to like me,…
(https://www.theodysseyonline.com/20-life-lessons-learned-20-years-old)
b. It's pretty common for not everyone to be on the same page.
(http://www.abrucejohnson.com/2015/04/09/my-family-inherited-property-some-of-them-want-the-cash-others-want-to-invest-what-do-we-do/)

Consider now (74a). [not DP] c-commands a clause-mate infinitival T conforming to the NQPC.

11. Post-Verbal Adjuncts

Just as post-verbal object quantifier phrases cannot be modified by negation, neither can post-verbal adjuncts:

(78) Lasnik (1972/1976: 11)
- a. I do not often cut astronomy class.
- b. Not often do I cut astronomy class.
- c. *I cut astronomy class not often.

(79)
- a. Lauren hasn't worked in weeks.
- b. Not in weeks has Lauren worked.
- c. *Lauren has worked not in weeks.

In (78c) and (79c), the post-verbal [NEG Y] does not c-command T violating the GNQPC.

When *often* is used between the subject and verb it cannot be modified by negation:

(80)
- a. *I not often skip class.
- b. I do not often skip class.

The fact illustrated in (80a) was also noted by Huddelston and Pullum (2002: 807) who note that "These phrases are excluded from post-verbal position ([iii]) or central position ([iv]).":

(81) *He not often visits his parents. (=[iv])

The fact that (81a) is unacceptable suggests that *not* must undergo Short NEG Raising to form the structure (81b):

(82)
- a. I T [not often] skip class.
- b. I T not [<not> often] skip class.

If *not* did not undergo Short NEG Raising, then there would be no relevant difference in structure between (82a) and the following examples:

(83)
- a. I never skip class.
- b. I [not infrequently] skip class.

I propose that Short NEG Raising in (82b) is forced by the GNQPC, since the structure in (82a) violates the GNQPC (since [not often] does not c-command T). In (82b), if [<not> often] does not count as an overt occurrence, then (82b) does not violate the GNQPC. I return to the issue in section 14.

12. Floated Quantifiers

The universal quantifier *all* can also be used as a floated quantifier:

(84) The boys all ran down the hill.

But when used in this way, it cannot be modified by *not*, unless there is do-support:

(85) a. *The boys not all ran down the hill.
b. The boys did not all run down the hill.

This data strongly suggests that in (85b), *not* has raised away from *all*, triggering do-support. In other words, the structure of (85b) is (86b), not (86a):

(86) a. *The boys T [not all] ran down the hill.
b. The boys T not [<not> all] ran down the hill.

If the structure were that of (86a), it is unclear why do-support would be triggered, since floated quantifiers like *all* do not trigger do-support, and presumably [not all] in (86a) would occupy the same position as *all* in (84).

Short NEG Raising is forced in (86b) by the NQPC. If Short NEG Raising did not take place as in (86a), it would violate the NQPC, since [not all] would not c-command T. In (86b), if [<not> all] does not count as an overt occurrence, then (86b) does not violate the NQPC. I return to the issue in section 14.

13. Possessors

A remarkable fact is that if a negated quantifier phrase is a possessor of some DP, that DP can appear as a subject, but not as an object:

(87) Postal (1974: 96, footnote 9)
a. Not many people's mothers are movie stars.
b. Not many citizen's passports were seized by the police.

(88) Postal (1974: 96, footnote 9)
*I called not many people's mothers.

There are similar examples involving universal quantifier phrases:

(89) a. Not everybody's mother was there.
b. John didn't see everybody's mother.
c. *John saw not everybody's mother.

A negated possessor can appear as part of a DP in the focus position of Negative Inversion:

(90) Not everybody's mother would John be willing to talk to.

Negated possessors can also be used in appositive relative clauses:

(91) Those girls, not many of whose mothers the judge is willing to parole,…

Consider now the following minimal pair:

(92) a. Not everybody's picture was on the table.
b. *A picture of not everybody was on the table.

(92b) is ruled out by the NQPC, since [not everybody] does not c-command T. But by the same reasoning, (92a) should also be ruled out, since the possessor [not everybody] is dominated by the subject DP, and so does not c-command T, as shown in the structure below:

(93) [[not everybody]'s picture] was on the table.

The contrast in (92a,b) seems to be parallel to the well known contrast in pied-piping illustrated in (94):

(94) a. I wonder whose picture was on the table.
b. *I wonder a picture of who was on the table.

Kayne 1994: 24 discusses similar pied-piping examples such as the following:

(95) a. We know whose articles those are.
b. *We know articles by whom those are.

To explain these facts Kayne assumes that there is a condition on wh-phrases which is similar to the NQPC (see Cowper 1987 for a percolation based approach):

(96) The wh-phrase in interrogatives must asymmetrically c-command the [+wh] head.

Furthermore, he defines c-command in such a way that *whose* in (95a) does c-command Comp:

(97) X c-commands Y iff X and Y are categories and X excludes Y and every category that dominates X dominates Y.

According to this definition, in (95a) *whose* c-commands Comp. Such an analysis would carry over to the distribution of negated quantifier phrases. For example, in (89a) [not everybody] would c-command T.

However, it is unclear how much weight can be placed on definitions involving segments/categories given a simple theory of Merge (see Collins 2016), which does not produce such a distinction. So it is useful to find an alternative explanation for the distribution of negated quantifier phrases in possessor position.

A different approach to wh-phrases in possessor position is that of Cable 2010: 144, who notes the following contrast:

(98) a. I wonder whose pictures John bought.
b. *I wonder pictures of whom John bought.

Cable explains the contrast in the following way. The structures of (98a,b) both involve a Q particle, that must agree syntactically with the wh-word:

(99) a. [[whose pictures] Q]
b. [[pictures of whom] Q]

According to Cable (2010: 149) there is agreement between Q and *whose* in (99a), but in (99b) that agreement relation is blocked by *pictures*.

Crucially, in Cable's account, the semantics of Q depends on *who* being an indefinite that only has a focus semantic value, which is a set. So the focus semantic value of *who* is the set of humans. Such an assumption would not carry over easily to the cases involving [not everybody], since *everybody* is not an indefinite and does not denote a set.

Even though Cable's approach does not extend straightforwardly to negated quantifier phrases, I propose an analysis in the same spirit. Consider again (89a). I propose that the structure of this phrase is the following:

(100) [not [everybody's mother]] was there.

Just as Cable's Q particle takes the whole possessed DP as a complement in (99a), the negation modifies the DP [everybody's mother] in (100). On this assumption, (100) satisfies the NQPC since [not DP] c-commands a clause-mate T.

An argument for the structure in (100) is based on coordination. Consider the following example, which many people find marginal:

(101) ?Not every man and every woman attended.

To the extent that this is good, its structure is:

(102) [not [every man and every woman]] attended.

Such a structure yields correct interpretation, in the framework for semantic analysis in Collins and Postal 2014. Just to give a sketch: *and* denotes set intersection, [every man] denotes the set of sets containing all the men, and [every man and every woman] denotes the set of sets containing all the men and all the women. Negation gives the complement of that set. In particular, this structure predicts that (101) should be true if ten out of ten men attended, and eight out of ten woman attended, which matches my intuitions.

One could ask why (101) is marginal. It seems to compete with a closely related construction (see Keenan 1996 for a semantic analysis of [every man and woman] involving 2-pace Dets):

(103) Not every man and woman attended.

If [man and woman] were conjoined directly in (103), *every* would quantify over objects that are both men and women, which does not make sense. But if there is deletion of *every*, the right interpretation (equivalent to (102)) results. So I assume the structure of (103) is:

(104) [not [[every man] and [<every> woman]]] attended.

A Short NEG Raising analysis of either (101) or (103) would not yield the right result. Two attempts at a Short NEG Raising analysis for (101) are given below:

(105) a. [not [[<not> [every man]] and [every woman]]] attended.
b. [not [[<not> [every man]] and [<not> [every woman]]]] attended.

In (105a), *not* has only raised from the left most conjunct, yielding the wrong interpretation and violating the Coordinated Structure Constraint. In (105b), *not* undergoes ATB movement, yielding the wrong interpretation.

Now suppose that we hold a party at the office, and invite all the spouses to attend. In talking about the party, I can say:

(106) ?Not every man's wife and every woman's husband attended.

I assume that this sentence has the following structure:

(107) [not [every man's wife and every woman's husband]] attended.

Since *not* can be outside of the coordination of DPs with possessors in (107), it follows that such a structure should also be possible in non-coordinated structures such as (100).

The remaining question is how to reconcile the structure in (100) with the semantics of negation presented in Collins and Postal 2014. In order for (100) to be interpretable, [everybody's mother] has to denote a generalized quantifier (which has a negation). I leave this issue for further research. See Heim and Kratzer 1998: 230-231 for relevant discussion on "quantifying into DP".

14. Explaining the NQPC

In this section, I try to explain why the NQPC exists. The remarks in this section are speculative. The NQPC is repeated below:

(108) Negated Quantifier Phrase Constraint (NQPC)
An overt occurrence of [not DP] c-commands a clause-mate T.

Recall that I have suggested tying the NQPC to scope. The NQPC states that [NEG DP] must occur overtly in scope position, where it can be interpreted as a generalized quantifier. On this interpretation of the NPQC, the difference between inner negation and outer negation reduces to scope. With inner negation, the negated constituent [NEG Y] does not have scope over a clause, and so it is not required to c-command T overtly.

The question is why the NQPC holds? One possibility is the following:

(109) [NEG DP] does not undergo Quantifier Raising.

In other words, [NEG DP] does not undergo the covert operation that places constituents in positions where they take scope and can be interpreted as generalized quantifiers (type <<e,t>, t>) with no type mismatch.

If (109) holds, then [NEG DP] has to raise to scope position overtly. With [NEG DP] in English, the acceptable cases are subjects, negative inversion focus, and appositive relatives. In each case, I assume that the scope position of [NEG DP] is the surface position (e.g., Spec TP, Spec FocP, or Spec ForceP respectively). In the unacceptable cases (e.g., objects), since [NEG DP] does not undergo QR, there would be no way of interpreting it in object position (putting aside various type shifting possibilities).

Of course, DP could undergo QR, stranding NEG in object position:

(110) a. *I saw not every student in class.
b. <[every student]$_1$> [I saw [not DP$_1$]]

But if negation is stranded, the lower occurrence of [every student] will be interpreted as a variable of type <e>. Following Collins and Postal 2014 and Collins 2016, I assume that negation only modifies constituents whose type ends in t (the type of truth values).

The generalization in (109) makes a further prediction, which I have not tested yet:

(111) For Y = [NEG DP], Y never takes scope over X where X overtly c-commands Y. In other words, [NEG DP] does not allow inverse scope.

The reason why (111) would follow from (109) is that in order to get inverse scope, Y would have to undergo QR to a position higher than X, but this is not possible by (109).

The last issue is what happens with Short NEG Raising examples such as the following (repeated from (63) above):

(112) a. I didn't see many people.
b. I did NEG$_1$ [<NEG$_1$> <[many people]>]$_2$ see [<NEG$_1$> [many people]]$_2$.

As noted earlier, Collins and Postal 2014 assume that in (112b), NEG$_1$ raises from [NEG$_1$ DP], which is in a covert scope position. But since NEG$_1$ after Short NEG Raising is no longer in the covert scope position, it is realized overtly. Similar remarks hold for adverbs (section 11) and floated quantifiers (section 12) on the assumption that they undergo QR.

Such a representation violates (109), since in this case [not [many people]] has reached its scope position by QR. Such examples suggest an alternative to (109):

(113) No occurrence of [NEG$_1$ DP] c-commands the overt occurrence of NEG$_1$.

A motivation for (113) is that NEG serves as a scope marker. That is, the overt position of NEG$_1$ in a [NEG$_1$ DP] structure marks overtly the scope of the DP.

15. Conclusion

In this paper, I have given a survey of the positions where negated quantifier phrases appear. I have accounted for the gaps in the distribution by invoking the Negated Quantifier Phrase Constraint (NQPC). I have shown how this constraint works in a wide variety of contexts.

The results of this paper support the general theoretical assumptions about the syntax and semantics negation in Collins and Postal 2014. In particular, Collins and Postal 2014 assume that negation can modify quantifiers such as *some*/*any*. In the terminology of this paper, such modification is inner negation.

A remaining question is the status of inner versus outer negation. Is there independent evidence for such a distinction (see Collins and Postal 2016b for some preliminary evidence)? What principles of syntax and semantics determiner when inner and outer negation are possible?

Acknowledgments: I thank Frances Blanchette, Larry Horn, Jason Kandybowicz, Richard Kayne, Paul Postal and Andrew Radford for comments on an earlier version of this paper. I thank the audience at UCONN (February 24, 2017) for valuable feedback.

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