

Attracting Negative Inversion: Syntactic or Constructional Force?*

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Kim, Jong-Bok & Lee, Seung-Han. 2009. Attracting Negative Inversion: Syntactic or Constructional Force? *English Language and Linguistics* 28, 183-202. The generation of negative inversion (NI) has been puzzles to the English grammar. One prevalent approach for the construction is a configurational, movement one that contributes the inversion force to the so-called NEG criterion as well as to the interaction of functional projections and movement operations. This paper reviews the basic properties of NI with naturally occurring data (corpus). Our corpus examples indicate that the NI is controlled not by syntactic operations such as movement but is constructionally determined. The inversion force cannot be originated from simple lexical entries or syntactically. The constructional constraints of the NI, a subtype of other general inversion constructions, allow us to link its form and idiosyncratic semantic and pragmatic functions as well.

Key words: negative inversion, negative operator, construction, scope, HPSG

1. Introduction

English employs the so-called NI (negative inversion) constructions as exemplified by corpus examples like (1):

- (1) a. In no circumstances should communications be sent to the prisoner.
(BNC A03 560)
- b. And never again did she make the same mistake. (BNC ADF 820)

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As given here, the NI construction is canonically introduced by a negative expression including *no* and *never* and is followed by the subject-aux inversion.

There exist two main issues in the analysis of this NI construction. The first issue is what licenses NI? Is the licensor or trigger a negative 'lexical' element such as *no* or *not* or is the licensor bigger than a negative lexical element? The second issue is how we can generate such sentences. Is there a movement operation similar to the one for wh-questions or is the construction base generated? In this paper, we will first review some of the basic properties of the construction together with a corpus search. The main corpora we are using is the one million word corpus ICE-GB (International Corpus of English, Great Britain) and the 100 million words BNC (British National Corpus). We then look in issues in movement analyses and try to offer a non-movement, construction-based approach that can account for the properties of NI constructions.

2. Grammatical Properties of the NI

2.1. Some Basic Properties

The first thing we can notice in the NI construction is that there exist various types of expressions that license NI, as attested by the corpus examples in (2):

- (2) a. Not since the days of Nasser have they felt any self-respect.
(BNC G2J 1191)
- b. In no circumstances should communications be sent to the prisoner.
(BNC A03 560)
- c. Nowhere is this strangeness more apparent than in the history of medicine.
(BNC AK4 484)
- d. Never before have so many joined in the struggle to bring significant improvements to their lives.
(BNC B04 518)
- e. Seldom are the designs reproduced exactly as illustrated.
(BNC HS1 118)

As noted here in (2), the NI construction can be introduced by full negatives such as *not*, *no*, and *never+XP*), or near negatives like *seldom*, *rarely*, and *hardly* or even restrictive delimiters such as *not only* and *alone* (cf. Jakobsson 2007). The preposed expression in NI is taken to be semantically negative, but there are many examples where the preposed expression has no negative meaning at all, as observed from examples like (3):

- (3) a. Not merely was the transformation great in itself but, of course, on the largest commuter network under single ownership in the world.
(BNC A11 779)
- b. Not only was he working on it all day at home, but he had to travel about the country collecting information. (BNC B1Y 1062)
- c. Only when the shop was wound up were charges brought.
(BNC FCC 258)
- d. In vain did we count the tedious moments of his absence. (Google)
- e. Vainly did I try to educate him about the existence of transitional fossils and the mechanism of natural selection. (Google)

The expression *not merely* or the correlative *not only* includes the negator *not*, but they have no negative meaning. The same is true for the expression *in vain* or *vainly*.

In addition, notice that the NI with a preposed negative expression is not always obligatory. Observe the following three types:

(4) Obligatory NI

- a. At no time were there satisfactory answers to questions about the lack of background reports. (BNC CAR 594)
- b. *At no time there were satisfactory answers to questions about the lack of background reports.

(5) Optional NI

- a. Little did we know that this drink will shape the course of the rest of the tour. (BNC CK4 1682)

b. Little they knew, he thought. (BNC GUX 663)

(6) No NI

a. In no time he had calls from husky security officers. (BNC CAT 979)

b. *In no time did he have calls from husky security officers.

As we can observe here that the negative expression *at no time* obligatorily introduces the NI, but the expression *in no time* disallows the NI despite the overt negator *no*. Meanwhile, expressions such as *little* can combine either with the NI or with the non-inverted sentence. These three different types again indicate that it is not a negative expression like *no* or *not* alone but a larger constituent that determines the possibility of NI. This can be further attested by examples like (7):

(7) a. Not always did I do the right thing but I was always accepted for
who I am. (Google)

b. *Not surprisingly did he fail the exam. (Google)

The expression *not always* triggers the NI, but *not surprisingly* disallows the NI.

Based on these observations and following Jacobsson (2007) and others, we thus can have at least three types with respect to the NI construction:

(8) a. Obligatory NI: *seldom, nor, never, not only, not merely, in no+NP, only when, in no circumstances, on no account, no longer, not since, no more, etc.*

b. Optional NI: *not often, little, not far away, only once, only then, not a single+NP, in vain, etc.*

c. No NI: *in no time, not long after, not surprisingly, little, with no+NP, etc.*

In terms of semantics, as noted by Klima (1964) and others, the negative expression inducing the NI has semantically a wide scope, functioning as a

sentential negation. For example, NI allows *neither* tags and can license an NPI expression.¹

- (9) a. Not often does Jack attend parties and neither does Jill.
 b. *Not long ago Jack attended a party and neither did Jill.
 (Rudanko 1982)

- (10) a. Not often does Jack attend any parties.
 b. *Not long ago Jack attended any parties. (Rudanko 1982)

The scope difference between NI and non-NI sentences can also be observed from the contrast in (11):

- (11) a. With no job would Mary be happy.
 [=Mary wouldn't be happy with any job]
 b. With no job, Mary would be happy.
 [=Mary would be happy without a job] (Lieberman 1974)

Examples (11a) and (11b) have different meanings with respect to the scope of negation. The non-inverted one in (11b) means Kim would be happy if he has no job, whereas the inverted one in (11a) roughly means there is no job Kim would be happy with.

One additional semantic property we can observe is that as illustrated in (12) the NI construction is canonically monotone decreasing whereas the non-inverted one is monotone increasing (cf. Büring 2004):

- (12) a. On no account should you eat a piece of fruit for breakfast. \Rightarrow
 b. On no account should you eat an apple for breakfast.

- (13) a. In no time he had stolen a piece of fruit.

¹ The tag question can be another test, but it does not hold for all obligatory NI types (cf. Rudanko 1982)

(i) Seldom does Jack attend parties, *does he?/*doesn't he?

- b. \Leftarrow In no time he had stolen an apple.

2.2. Negative Inversion, Wh-movement, and Topicalization

The preposed element in the NI is often an adjunct, but we can also find an argument in the preposed position:

- (14) a. Not a single inch of Kuwaiti territory will he be allowed to retain
now. (ICE-GB:W2E-001)
b. Not a single inch of Iranian territory did he gain then.
(ICE-GB:W2E-001)
c. Not a single penny, I assure you. (BNC JXS 506)

Also notice even the coordinator *nor* can introduce an NI sentence:

- (15) a. No one knows exactly how many new religions there are, nor does
anyone know how many members are in each movement.
(ICE-GB:W2A-012)
b. Nor, having read it, will I be afraid of interruptions. (BNC CAS 986)

In (15a), *nor* is a true coordinator, whereas the one in (15b) seems to behave like a conjunctive adverbial element. Such examples question us if they are really originated in a different position and preposed in the sentential initial position by a dislocation operation.

If the preposed negative expression is due to a syntactic movement operation, the question that follows is if the NI is similar to wh-questions taken to be canonical movement constructions. However, there exist several clear cases showing us that the two are different. First, unlike wh-questions, the NI can occur in the embedded clause as shown in (16):

- (16) a. I said that not once had Robin raised his hand.
b. *I wonder what did Robin see. (Maekawa 2007)

A further difference from *wh*-questions concerns 'local domain': the preposed expression in the NI construction is linked with an element in the same clause. There is no long distance relationship.

- (17) a. What did Bill say that Mary remembered to bring?
 b. *Not a penny did I say that Mary remembered to bring.
 (Sobin 2003)

Unlike the *wh*-element in (17a), the negative expression *not a penny* cannot be linked to the embedded clause. In addition, the preposed negative phrase *never again* in (18a) is different from the one in (18b):

- (18) a. I said [that never again will Mary eat clams].
 b. Never again did I say [that Mary will eat clams]. (Sobin 2003)

In (18a), *never again* applies only to 'eating' whereas in (18b) it is linked only to 'my saying'. These data then indicate that the preposed element in the NI construction is different from the *wh*-expression in the sense that NI is clause-bounded unlike *wh*-questions.

As noted by Haegeman (2000), when *wh*- and negative expressions occur together, the *wh*-expression needs to precede the negative expression:

- (19) a. What under no circumstances would John do for Mary?
 b. *Under no circumstances what would John do for Mary?

The contrast given here indicates that even though the two can appear together, there exists a certain linearization condition or the two compete each other for one position. Meanwhile, when NI occurs with a topicalized expression, it needs to precede the topic (Haegeman 2000):

- (20) a. During the vacation, on no account would I go into the office.
 b. *On no account would, during the vacation, I go into the office.

NI is also different from topicalization. For example, observe the following contrast between topicalization and NI:

- (21) a. On the table, Mary placed a sharp knife.
 b. *What did on the table Mary place ___? (Sobin 2003)

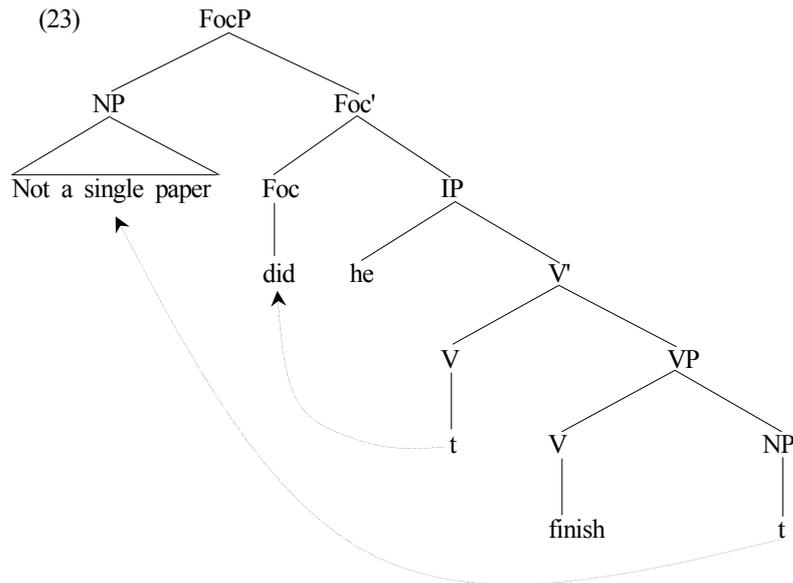
- (22) a. Mary said that never again would she buy a shed.
 b. What did Mary say that never again would she buy ___?
 (Sobin 2003)

The contrast in (21) shows us that the topicalized sentence forms an island so that no element can be moved out from it again. The situation is different in the NI as shown in (22a) and (22b). The *wh*-expression *what* in (22b) can be linked with the element in the NI beyond the island. This then implies that the NI is different from canonical topicalization.

3. Movement Approaches

One prevalent approach for the NI construction is a configurational, movement one that contributes the inversion force to the interaction of functional projections and movement operations (Haegeman and Zanuttini 1991, Rizzi 1997, Haegeman 2000 and others). There exist several versions of the movement approaches, but (23) is a canonical structure assumed by this kind of analysis:²

² Haegeman (2000) splits CP into semantically-relevant projections such as ForceP, TopP, FocP, and FinP. ForceP encodes the illocutionary force of the sentence whereas FinP specifies the finiteness of the clause. In this kind of split-CP analysis, the preposed negative expression is moved to [Spec, FocP] whereas the *wh*-phrase to [Spec, ForceP].



As illustrated in the tree representation (23), the inverted negative phrase is in the Spec of FocP while the auxiliary with the NEG feature must move to the head Foc position to satisfy the so-called NEG criterion given in (24):³

(24) NEG-criterion

- a. A NEG-operator must be in a Spec-head configuration with a [+NEG]-X.
- b. A [+NEG]-X must be in a Spec-head configuration with a NEG-operator.

This kind of movement approach set out by Haegeman (2000) can handle the scope difference between NI and non-NI examples we have observed earlier in (11), which we repeat here:

- (25) a. With no job would Mary be happy.
- b. With no job, Mary would be happy.

³ In Haegeman (2000), a NEG-operator is a NEG-phrase in a A' scope position.

In Haegeman's analysis, the inverted negative expression in (25a) is moved to the Spec of FocP while the NEG Criterion demands the NEG auxiliary to be inverted. Meanwhile, the one in (25b) is a topicalized one and thus is not required the inversion. This difference causes the semantic difference too.

The immediate question from this kind of movement analysis includes (a) the role of NEG feature and (b) the validity of assuming movement operations. First, observe that to satisfy the NEG criterion in (24), it is essential for the auxiliary in the NI to have the NEG feature. However, as pointed by Newmeyer (2004), the auxiliary verb *would* in the NI has no inherent properties for being negative. It is hard to claim that there is any semantic or grammatical difference between *would* in (25a) and *would* in (25b). In addition, notice that the auxiliary with the contracted negation prefers not the inverted but the non-inverted ordering, as noted by Jacobsson (2007):

- (26) a. Not only you don't have a job, you don't even have a yard to take care of any more.
 b. Not surprising he didn't accept the offer.

Nothing from the data indicates that the NEG feature on the auxiliary verbs plays a role in licensing NI. The assignment of the feature NEG in the NI construction seems to be purely theoretically-based.

The second issue raised from the NEG-criterion analysis is the status of the NEG operator. How can we identify the NEG operator? Is it the one with a negative word? As we have already seen, not all negative expressions have inversion force. We repeat the data here:

- (27) a. *In no time had we doubts of his aptitude. (Google)
 b. At no time was it mentioned that I would receive an invoice. (Google)
- (28) a. Not always did I do the right thing but I was always accepted for who I am. (Google)
 b. *Not surprisingly did he fail the exam. (Google)

Further, there are semantically non-negative expressions such as *only then* or correlatives like *not only* which do license the NI. Plus, positive expressions like *so* also trigger the inversion as given in (29):

- (29) a. So persistent was he that we finally gave in. (Google)
 b. Such was Britain's brave attempt to evade the dreaded axiom.
 (BNC A69 1453)

Another intriguing question that follows is if there is really a movement operation here. In the previous section, we have seen that unlike *wh*-constructions, the NI is clause-bound, not displaying long distance dependencies. This means even if we were to accept movement operations in the generation of NI, we would need to constraint them to happen only within the given clause. There also exists cases where the putative source sentences for the NI do not exist. That is, the movement analysis for the NI also encounters problems for the NI with the conjunctive adverb *nor* or coordinator *nor*, whose data we repeat here:

- (30) a. No one knows exactly how many new religions there are, nor does anyone know how many members are in each movement.
 (ICE-GB:W2A-012)
 b. Nor, having read it, will I be afraid of interruptions. (BNC CAS 986)

If the expression *nor* either in (30a) or in (30b) were in the preposed sentential initial position, we would be able to generate it in a non-initial position. However, this isn't possible.

The observations we have made so far indicate that not all NI instances can be formed by a kind of movement operations, even if we accept a movement analysis.

4. A Construction-based Non-Movement Approach

4.1. NI from Lexical Properties

Based on the observations we have made from the literature and corpus

search, we assume that NI constructions are base-generated. In particular, we attribute the inversion force to purely constructional properties.

As our first step, consider the distributional possibilities of *never* which can also trigger NI:

- (31) a. *Never Bill should have been given a B.
 b. Never should Bill have been given a B.
 c. Bill never should have been given a B.
 d. Bill should never have been given a B.
 e. Bill should have never been given a B.
 f. Bill should have been never given a B. (Sobin 2003)

The data here indicate that the expression *never* canonically modifies a VP, but when it does modify a full S in the sentential initial position, the modified S must be an inverted one as seen from (31a) and (31b). This condition can be encoded in its lexical information as represented in the feature structure system of HPSG:

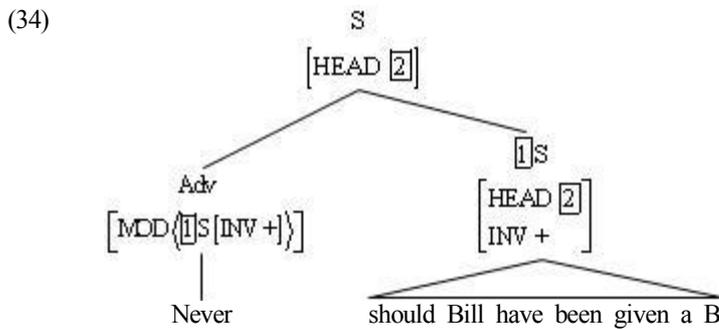
- (32)
- | | | | |
|----|--|----|--|
| a. | $\left[\begin{array}{l} \langle \text{never} \rangle \\ \text{HEAD} \langle \text{PC} \text{ verb} \rangle \\ \text{MOD} \langle \text{VP} \rangle \end{array} \right]$ | b. | $\left[\begin{array}{l} \langle \text{never} \rangle \\ \text{HEAD} \langle \text{PC} \text{ adv} \rangle \\ \text{MOD} \langle \text{S} \rangle \left[\begin{array}{l} \text{IND} \langle s \rangle \\ \text{INV} + \end{array} \right] \\ \text{SEM} \langle \text{RELS} \rangle \left[\begin{array}{l} \text{PRED} \langle \text{never} - \text{rel} \rangle \\ \text{ARG1} \langle s \rangle \end{array} \right] \end{array} \right]$ |
|----|--|----|--|

The lexical entry in (32a) means that the negative word *never* modifies a VP, whereas in (32b) it modifies an inverted S functioning as its semantic argument (*sI*). The lexical entry in (32a), having no specific constraints on its modifying VP, allows *never* to modify either a finite or a non-finite VP. This will then generate the examples in (31c, d, e, f) as well as those in (33):

- (33) a. They never [had bowel trouble in the movies]. (BNC BPA 465)
 b. Mother always told you never [to laugh at other people's misfortunes].
 (BNC CBG 7733)

- c. The next important lesson is to never [apologise for being there].
 (BNC A06 2099)

Meanwhile, the lexical entry in (32b) will generate a modifying structure for the NI as given in (34):



The tree structure in (34) is a head-modifier structure where *never* modifies an S[INV+].

One immediate consequence of this modifying structure is that we can easily expect the NI is not long-distance dependent, but clause-bound, which is a canonical property of head-modify structure. Since the preposed NI is taken to be a type of sentential adverb, we expect the same behavior with respect to island constraints:

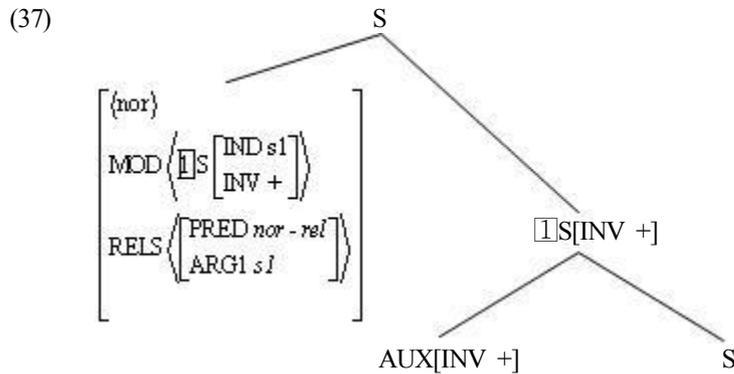
- (35) a. What do you think that with pleasure John donate to the institute
 _____?
 b. What do you think that not often does Jack donate to the institute
 _____?

In addition, notice that this lexicalist approach requires no additional mechanism to account for the NI with expressions like *nor*:

- (36) a. Nor, having read it, will I be afraid of interruptions.
 (BNC CAS 986)

- b. Conversely readers may not take books that have been issued to another reader, nor may they take books from another reader's place.
(ICE-GB:W2D-006)

The only thing we need to assume in our lexicalist perspective is that *nor*, used as a conjunctive adverb or a coordinator, is lexically specified to combine with an inverted S, as represented in (37):



This will allow it to generate examples like (36).⁴

As pointed out earlier, it is highly unlikely that an expression like *nor* is generated in a non-initial S position and moved to the S initial position to satisfy something like the NEG Criterion.

4.2. Constructional Properties

One thing to remember at this point is that a negative lexical expression alone cannot license the NI as we have observed earlier. Once again see the contrast in (38):

- (38) a. In no time he will be digging in the dirt. (Google)
b. At no time will the average global lifespan decrease. (Google)

⁴ Note that in Early Modern English, *nor* can combine with a non-inverted one as in *...nor it would not come to good*. See Jacobsson (2007) for further discussion.

As the data indicate, *no* alone cannot license NI. It is the whole expression *at no time* that licenses the NI.

We attribute this to constructional properties. That is, we assume that there exists a special construction called *negative-inversion-construction* (*ni-cx*) which includes one like *at no time*, but excludes one like *in no time*. Following Fillmore's (1998) suggestion, we claim that the NI is a subtype of subject-aux-inversion construction with its own constructional constraints as roughly represented in (39):

(39)

$$S \begin{bmatrix} \text{inv-cx} \\ \text{INV +} \end{bmatrix} \rightarrow \text{AUX} \begin{bmatrix} \text{INV +} \\ \text{SUBJ} \langle \text{[1]} \rangle \\ \text{COMPS} \langle \text{[2]} \rangle \end{bmatrix}, \text{[1]XP, [2]YP}$$

This constraint, specifying that the subject and auxiliary be inverted, is inherited its subtype NI whose proposed sentential initial element has special semantic and pragmatic constraints as specified in (40):

(40)

$$[\text{ni-cx}] \rightarrow \text{XP} \begin{bmatrix} \text{FOCUS +} \\ \text{EMPH +} \\ \text{MOD} \langle \text{[1]} \rangle \end{bmatrix}, \text{[1]S[INV +]}$$

The construction specifies that the negative-inversion construction *ni-cx* consists of the inverted S and an XP functioning as a focus as well as bearing the feature EMPHATIC, whose notion is adopted from Jacobsson (2007). Also notice that this XP is defined as a special construction. Since the XP is the semantic (SEM) head of the phrase, it bears a wider scope of the inverted sentence. The feature EMPH is assigned only to an expression that modifies an inverted sentence so that it can have a wider scope and thus naturally the propositional content is non-positively 'construed' or 'framed' (cf. Fillmore

1998).

Observe the contexts where the NI occurs in naturally occurring data:

- (41) a. Like all ancient peoples, the Romans had always had slaves, and their wars increased the supply. Never were slaves so numerous as in Italy during the first century B.C. (ICE-GB:W2A-001)
- b. The rear brake shoes are self-adjusting and do not require regular adjustment. If the linings need renewing, refer to BRAKES. Brake shoes must always be renewed in sets of four and semi; on no account should only one pair of shoes be renewed. (ICE-GB:W2D-018)
- c. The recent experience of the Soviet Union in Afghanistan and of Argentina in the Falkland Islands ought to have warned him that the lessons of appeasement have been well learned by the nations of the West: no longer are we prepared to kow-tow to tyrants in the hope that they will invade someone else's country and leave us alone. (ICE-GB:W2E-001)

The NI examples in (41) achieve an emphatic or salient effect by causing the reader or hearer to concentrate more on the sentence in which they occur. If we compare the NI data in (41) with (42), we can further understand that the preposed expressions of NI play a role in giving emphasis rather than negative meaning:

- (42) a. Slaves were never so numerous as in Italy during the first century B.C.
- b. Only one pair of shoes should be renewed on no account.
- c. We are no longer prepared to kow-tow to tyrants in the hope that they will invade someone else's country and leave us alone.

In addition, discourse salience function of the NI can be further observed from examples like (43) where the two NIs are repeated:

- (43) Indeed, Saddam Hussein ought to have learned from his own experience in the pointless and futile war against Iran, which he initiated and which profited him nothing. Not a single inch of Iranian territory did he gain then. Not a single inch of Kuwaiti territory will he be allowed to retain now. (ICE-GB:W2E-001)

Two successive NI constructions give a rise to more powerful and emphatic meaning to the reader.

The present analysis thus can differentiate between NI examples and their counterpart canonical ones. The difference lies in what is highlighted or emphasized. However, expressions like *nor* is lexically specified to be always emphatic. In the present analysis, the notion 'emphaticness' encompasses the notion of NEG criterion assumed in Haegeman (2000).

Note that this kind of base-generated analysis can also explain ordering restrictions with topicalized or *wh*-questions without relying on the postulation of additional functional projections. In the present analysis, the NI is a type of head-modifier construction. This then can predict the linear order constraints between topicalized and NI. The NI inducing expression, whether it is lexical or phrasal, modifies a canonical S, not a topicalized one, nor a *wh*-question. That's why we expect the contrast in (44) and (45) we repeat from the previous section:

- (45) a. [What [under no circumstances [would John do for Mary]]]?
 b. *[Under no circumstances [what would John do for Mary]]?
- (46) a. [During the vacation, [on no account [would I go into the office]].
 b. *[On no account would, [during the vacation, [I go into the office]]].

5. Conclusion

This construction-based analysis, with neither movement operations nor functional projections, has brought us several welcoming consequences. For example, since there is no long distance relationship between the inverted

emphatic expression, the grammar would not generate an UDC example. In addition, the grammar easily predicts a set of data. For example, the emphatic *never* combines only with an inverted S whereas the regular modifier *never* combines with any VP.

Our corpus examples (total 698 sentences from BNC, ICE-GB, and Google search) indicate that the NI is controlled not by syntactic operations such as movement but is constructionally determined. The inversion force cannot be originated from simple lexical entries or syntactically. The constructional constraints of the NI, a subtype of other general inversion constructions, allow us to link its form and idiosyncratic semantic and pragmatic functions as well.

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