

Configurational and Linearization-based Approaches to Negative Inversion

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1 Introduction

In the standard framework of Head-Driven Phrase Structure Grammar (HPSG; Pollard and Sag 1994), the rules for word order and the rules defining the combinations of elements have been traditionally distinguished into linear precedence (LP) rules and immediate dominance (ID) rules, respectively. Linear precedence rules are applied to local trees, and sisters must be adjacent. This means that the linear order is still closely tied to the combinatorial structure. On the other hand, recent years have seen an emergence of a view that linear order is independent to a considerable extent from constituency, so-called Linearization-based HPSG. In this framework, a linear sequence is analysed in terms of a level of ‘order domains’, which is an ordered list of elements that often come from several local trees (see, e.g., Kathol 2000).

With these two conceptions of linear organization in hand, it is important to consider what sort of analyses each approach can provide for various constructions. In this paper I will look at one specific construction, the negative inversion (NI) construction. (1) is a typical example.

- (1) *Under no circumstances* can we cash cheques.

The most plausible approach to NI constructions in the LP/ID rule system in the standard HPSG is to treat them as a kind of unbounded dependency construction (UDC). With such an assumption, the negative expression *under no circumstances* in (1) is a sister of a constituent containing a gap, and the relationship between them is represented in terms of the SLASH feature, in the same way as *wh*-interrogation (2a) and topicalization (2b) (Haegeman 2000; Rizzi 1997; etc).

- (2) a. *What* did they handed to the baby? b. *That toy*, they handed to the baby.

In the linearization framework, on the other hand, constraints on negative preposing will be stated in terms of the linear sequence, irrespective of constituency.

I will consider the possibility of providing a detailed analysis of negative preposing in NI constructions within these two versions of HPSG. I will argue that it poses problems for the standard HPSG, but that Linearization-based HPSG can provide a fairly straightforward account of the facts.

2 Problems of the standard HPSG approach to NI

The standard HPSG approach to NI predicts that it shares the properties with typical UDCs such as *wh*-interrogatives or topicalization such as (2a,b). However, there is a body of evidence that initial negative expressions do not work in parallel with UDCs. First, as illustrated by the pair in (3), initial negative phrase in NI is clause-bound while a *wh*-interrogative is not (Sobin 2003).

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

Second, preverbal adjuncts such as *never* in (4a) cannot be topicalised as (4b) exemplifies (Bouma et al), but it can be preposed in an NI construction (4c).

- (4) a. I have *never* seen a crocus bloom in January
b. * *Never* I have seen a crocus bloom in January.
c. *Never* have I seen a crocus bloom in January.

Third, NI constructions always have a sentential scope, while topicalized negative expression has constituent negation (Klima 1964: 306).

- (5) a. Not long ago there was (*any) rain falling.
b. Not even then was there any rain falling.

The topicalized negative expression *not long ago* in (5a) does not license the negative polarity item *any*, but *not even then* in an NI construction license *any* in (5b). Fourth, the initial negative expression can be a conjunction *nor*, illustrated by (6) cited from Culicover (1999).

- (6) Mary neither spends her vacations at the seashore *nor* does she go to the mountains.

As a conjunction, *nor* is not involved in an unbounded dependency relation.

The above data shows that there is no reason to think that negative preposing in NI is a kind of UDC, and that a standard HPSG approach to NI is dubious.

3 A linearization approach to NI

In the framework of Linearization-based HPSG, order domains are given as the value of the attribute DOM(AIN). We assume that an order domain consists of an ordered list of signs. At each level of syntactic combination, the order domain of the mother category is computed from the order domains of the daughter constituents. The elements of the daughter's order domain may be compacted to form a single element in the order domain of the mother or they may just become elements in the mother's order domain.

We assume that clauses of the type *v2-clause* include NI constructions and *wh*-interrogatives. They satisfy the following constraint (cf. Kathol 2002; and Kathol 2000 for German).

$$(7) \quad v2\text{-}clause \rightarrow \left[\begin{array}{l} S[fin] \\ \text{DOM} \left\langle [first], \left[\begin{array}{l} second \\ V[fin] \end{array} \right], \dots \right\rangle \end{array} \right]$$

(7) states that an initial phrase in a verb-second clause (i.e., a *wh*-phrase in *wh*-interrogatives and a negative phrase in NI constructions) is assigned to position *first*, and the finite auxiliary verb following it is in position *second*. We assume that subjects are always in *third*, and in non-inverted clauses like *Nobody/who/John liked it*, the finite verb is in *fourth* (see Kathol 2002). Thus, subjects are never in *first* and never occur in inverted clauses (**Nobody/*Who did like it*). We propose that NI constructions satisfy the following constraint, formalised as an additional constraint to *v2-clause*.

$$(8) \quad \left[\begin{array}{l} v2\text{-}clause \\ \text{DOM} \left\langle \left[\begin{array}{l} first \\ \text{STORE } \{[NEG]\} \end{array} \right], \dots \right\rangle \end{array} \right] \rightarrow \left[\begin{array}{l} \text{QUANTS } \{[NEG]\} \\ \text{STORE } \{ \} \end{array} \right]$$

(8) states that in a V2 clause if there is a negative quantifier in store in the negative expression then it is retrieved at the immediately containing clause.

This analysis of NI can accommodate all the properties of the construction we surveyed above. Note first that NI is constrained only in terms of the linear sequence and this constraint does not specify anything about constituent structure of the clause. Thus, a preverbal adverbial as well as a post-verbal adverbial or a complement of the clause can be preposed in NI (see (4)). Moreover, this underpecification on constituency ensures the occurrence of an element that is not involved in an unbounded dependency relation, such as conjunction *nor* in (6).

We further assume that the embedded clause is totally-compacted when it is combined with the higher clause. This captures the fact that negative preposing in NI is clause-bound (see (3)). The specification that the STORE value (represented as [NEG]) is retrieved into QUANTS on the clausal level ensures that the NI constructions always have a sentential scope as in (5b). Topicalization of negative elements as in (5a) is constrained with the following constraint.

$$(9) \quad hd\text{-}filler\text{-}ph \rightarrow [NH\text{-}DTRS \langle [STORE \{ \}] \rangle]$$

(9) ensures that any negative element within a filler is confined semantically to the filler.

Thus, the linearization approach to NI, formalized as the constraints given in (7) and (8), can accommodate the data (3)–(6) which are problematic to the standard HPSG approach to the construction.

References

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