## Hans Broekhuis and Wim Klooster

# On Merge and Move/Attract

Hans Broekhuis
University of Tilburg
P.O.-box 90153
5000 LE Tilburg
E-mail: hans.broekhuis@uvt.nl

Wim Klooster
Van eeghenstraat 169
1971 GC Amsterdam
e-mail: wgk@xs4all.nl

Contents

**On Merge and Move/Attract**

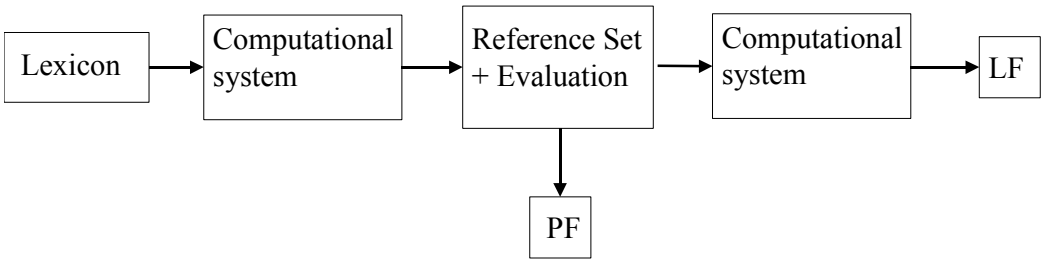
This article discusses the question whether the operation Merge is inherently more economical than the operation Move/Attract and therefore blocks the application of the latter operation, as claimed by Chomsky (1995b:226). A positive answer to this question implies that the derivation takes a numeration (or a lexical array) as its point of departure — if Merge is always preferred to Move/Attract, and the computational system has free access to the lexicon, movement would never apply, because any feature could be checked by merging it with some element taken from the lexicon directly. However, if Merge does not automatically block Move/Attract, it may be the case that the notion of a numeration is superfluous and can therefore be eliminated. Of course, we do need some criterion in order to decide which derivations are in competition, but it might be the case that this is simply a matter of meaning, as suggested by Grimshaw (1997a), who claims that only semantically equivalent structures are part of the reference set (= candidate set in OT terminology).

We will argue that the answer to the question whether Merge is inherently more economical than Move/Attract is negative, and show that the notion of a numeration is indeed superfluous and actually gives rise to empirically wrong results. This is an important conclusion since the notion of (sub)numeration has become increasingly important in the "Minimalist inquiry" framework by playing a crucial role in defining the so-called phases (Chomsky 2001a & 2001b): if our conclusion is correct, alternative ways of defining phases should be found.

Section 1 will start with a critical assessment of the arguments that have been given in favor of the assumption that Merge is "costless". Section 2 continues with discussing negative sentences in Dutch and English, and argues that we can only derive the data by assuming (i) that both Merge and Move/Attract are costly operations and (ii) that the computation is not based on a numeration but has free access to the lexicon.

The general theoretical framework of this paper is the Derivation-and-Evaluation (D&E) model, based on some ideas by Pesetsky (1997d/1998) and further developed by Broekhuis and Dekkers (2000b). The D&E model is a hybrid model incorporating aspects both from Chomsky's minimalist program and from the OT framework. Although not all aspects of the model will be relevant to our argument, we present it here in full as (1), for completeness' sake. In several ways, the model is similar to what is proposed in Chomsky's (1995b) minimalist program. The main difference is, however, that the SPELL-OUT point is determined by an optimality theoretical evaluation (Broekhuis, 2000a).

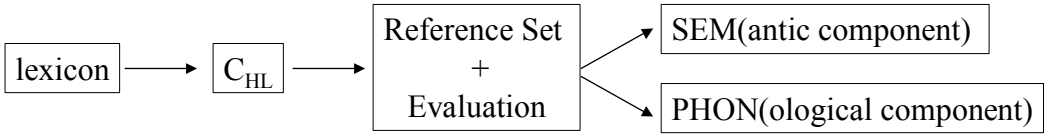
(1) **The Derivation-and-Evaluation model** (Broekhuis and Dekkers 2000b)




In later work, Dekkers (1999) and Broekhuis (2003a) have argued that the post-SPELL-OUT application of $C_{HL}$ can be eliminated. The former obtained this by introducing a set of PARSE

constraints, whereas the later obtained this by adopting Chomsky's (2000c) operation Agree. This would give rise to the model in (2). According to Broekhuis' interpretation the evaluation determines (among other things) whether feature-driven movement is needed or whether checking can take place at a distance by Agree. According to model (2), the optimality-theoretic evaluation can be seen as an explicit formulation of the bare output condition in the minimalist program (see Broekhuis 2003a for discussion).

(2) **The Derivation-and-Evaluation model**




The goal of this article is more or less independent of the model adopted and aims at showing that the computational system takes its building blocks directly from the lexicon, without mediation of a numeration.

## 1 The motivation for Merge as a "costless" operation

The conceptual motivation for assuming that Merge is a "costless" operation has to do with assumptions about the nature of LF. Chomsky (1995b: section 4.2.1) assumes that the conceptual-intentional system must assign an interpretation to the LF-representation, and that this is only possible if the LF-representation is a single syntactic object. Given the assumption that the elements in the numeration are also syntactic objects, this condition is not met when the numeration is not empty. Given the fact that the numeration must be empty at LF, Merge must apply in any case in order to arrive at a converging derivation, so that the null hypothesis is that Merge applies "for free".

This argument is theory-internal in the sense that it is only valid when we postulate a numeration. When there is no such entity, the argument will no longer stand. The derivation then just takes those elements from the lexicon that are needed at a certain point in the derivation, and since the elements in the lexicon are not linguistic objects in the relevant sense, that is, are not part of the derivation, the conceptual-intentional system just interprets the structure delivered to it.

In order to evaluate the hypothesis that Merge is "costless", we must therefore first investigate whether it is conceptually necessary or desirable to postulate the notion of a numeration. Chomsky (1995b: 225ff.) takes a linguistic expressions of L to be a ($\pi$, $\lambda$) pair that satisfies the bare output conditions at the PF and LF interfaces. In addition, $\pi$ and $\lambda$ must be compatible: it is not the case that any $\pi$ can be paired with any $\lambda$. By assuming that $\pi$ and $\lambda$ are based on a numeration, that is, the same lexical choices, this is ensured.

This conceptual argument seems sound for the 1995 framework, given the fact that $\pi$ and $\lambda$ are formed on the basis of different syntactic objects: $\pi$ is derived from the representation at Spell-Out, whereas $\lambda$ is derived from the representation at the end of the derivation. Due to the introduction of the operation Agree, and hence the elimination of the covert component, $\pi$ and $\lambda$ are derived from one and the same syntactic object in the "Minimalist Inquiry" framework. As a result, $\pi$ and $\lambda$ are necessarily based on the same lexical choices, and the notion of numeration has become superfluous in this respect. The original motivation for introducing a numeration therefore has disappeared.

The notion of a numeration could also be motivated on the basis of empirical evidence. But, actually, this evidence is rather meager, and only involves the expletive construction in Subject Raising constructions. The crucial type of data that seem to support the assumption of a numeration are given in (3).

(3) a. There$_i$ is likely [$_{IP}$ $t_i$ to be someone here]
a′. *There is likely [$_{IP}$ someone$_i$ to be $t_i$ here]
b. Someone$_i$ is likely [$_{IP}$ $t_i$ to be $t_i$ here]

Examples (3a) and (3a′) differ in that in the first case the expletive *there* is merged in the subject position of the infinitival clause in order to satisfy the EPP-feature of the embedded I, and subsequently moved into the subject position of the matrix clause in order to check the EPP-feature of the matrix I. In (3a′), on the other hand, the subject *someone* is first moved to the subject position in order to check the EPP-feature of the embedded I, and subsequently the expletive is merged in the subject position of the matrix clause in order to check the EPP-feature of the matrix I. Movement of *someone* into the subject position of the infinitival clause is, however, obligatory when no expletive is present, as is shown in (3b). This cannot, of course, be observed directly from the phonetic output of (3b), but is plausible given the fact that this movement must also apply in ECM-constructions, as is illustrated in (4b&b′).

(4) a. John wants there to be someone here at 6:00
b. John wants someone$_i$ to be $t_i$ here at 6:00
b′. *John wants *e* to be someone here at 6:00

Chomsky's account of the data in (3a&a′) is very simple. At the stage in the derivation where the subject position of the infinitival clause must be filled, there are two options: either Merge applies, placing the expletive in SpecIP, or I attracts the NP *someone*, with the result that this NP is moved into SpecIP. Given that the choice between these two options is made locally, the putative fact that Merge is "costless" — whereas Move/Attract is not — is assumed to force Merge to apply. In (3b), the Merge option is not available, since the numeration does not contain an expletive, and movement of the NP *someone* is the only option for checking the strong EPP-feature.

Of course, these data can only be used as conclusive evidence for the hypothesis that Merge is "costless" when no alternative analysis is available. There is, however, an alternative that fares equally well with these data and can be extended to cases on which Chomsky's hypothesis has nothing to say. In some analyses, the expletive *there* is considered a Small Clause predicate which is moved into SpecIP by means of (obligatory) Predicate Inversion (see Moro 1997b, Hoekstra and Mulder 1990b, Den Dikken and N**F**ss 1993, among others). In an analysis of this type, the same data can be handled. In (3a), the expletive is moved into the subject position of the embedded clause, so that at least the EPP-feature of the embedded I is checked (and possibly also some of the other features of I and of the NP *someone*, if the proposal of Hoekstra and Mulder 1990b is correct). After Predicate Inversion, only *there* can be moved into the subject position of the matrix clause, because moving the subject *someone* would violate the locality conditions on Move/Attract. The derivation of (3a) would therefore be as given in (5a). Example (3a′) cannot be derived, since after the subject *someone* has moved into the subject position of the embedded clause, movement of *there* into the subject position of the matrix clause would violate the locality conditions on Move/Attract. The derivation in (5a′) is therefore illicit. The analysis of (3b) remains

essentially the same, and is given as (5b). Note, meanwhile, that the locative predicate *here* is assumed to be an adjunct in the expletive construction, and not the actual predicate of the Small Clause.

(5) a. There$_i$ is likely [$_{IP}$ $t_i$ to be [$_{SC}$ someone $t_i$] here]
a′. *There$_i$ is likely [$_{IP}$ someone$_j$ to be [$_{SC}$ $t_j$ $t_i$] here]
b. Someone$_i$ is likely [$_{IP}$ $t_i$ to be [$_{SC}$ $t_i$ here]]

Independent evidence in favor of this Predicate Inversion analysis of the expletive construction can be found in (6). In (6a), the directional predicate *down the hill* has been moved into the subject position of the matrix clause via the subject position of the embedded clause, and the result is fine, which indicates that the locational predicate is able to satisfy the EPP-feature, just like *there* (cf. Bresnan 1994a for similar data). In (6a′), on the other hand, movement of the predicate into the subject position is blocked by the locality conditions on Move/Attract. The derivation in (6b), of course, satisfies all the conditions on movement and is therefore licit. In other words, the analysis of the examples in (6) is essentially identical to the analysis of the expletive constructions in (5).

(6) a. Down the hill$_i$ seems [$_{IP}$ $t_i$ to roll [$_{SC}$ a baby carriage $t_i$]]
a′. *Down the hill$_i$ seems [$_{IP}$ a baby carriage$_j$ to roll [$_{SC}$ $t_j$ $t_i$]]
b. A baby carriage$_i$ seems [$_{IP}$ $t_i$ to roll [$_{SC}$ $t_i$ down the hill]]

Given the fact that the Predicate Inversion analysis of the expletive construction can account for more data than Chomsky's hypothesis that Merge is "costless", we must conclude that the former is superior to the latter.[1] This means that there is no empirical reason to adopt Chomsky's hypothesis. Hence, there is no reason, at present, not to assume that the derivation has immediate access to the lexicon. Consequently, the notion of a numeration can be dispensed with. Although this should in principle be sufficient to eliminate this notion from the theory, we will show in section 2 that there are even more compelling reasons to do so.

## 2 Against the notion of a numeration: on negative sentences

Section 1 has shown that the original conceptual motivation for assuming a numeration has disappeared in the Minimalist Inquiry framework, and that the empirical evidence put forward in support of it (the presentational *there* construction) should actually be reanalyzed as a case of Predicate Inversion. This shows that there is actually no need to assume the notion of a numeration. This section aims at delivering a final blow to the notion of a numeration by showing that it gives rise to the wrong empirical result in describing the distribution of Negative NPs and negative polarity items (NPIs) in negative sentences.

[1] The correspondences between (5) and (6) do not exhaust the similarities between the presentational *there*-construction and Locative Inversion. Many more similarities can be found in Aissen (1975) and Bresnan (1994a), which are highly recommended. To our knowledge, there is only one conspicuous difference between the two construction types, namely the fact that the locative PP cannot occupy the subject position of the infinitival clause. For a possible account for this fact, see Den Dikken and N**F**ss (1993).

## 2.1 Preliminaries

The remainder of this article will be concerned with negative NPs, like Dutch *niets/niemand* and English *nothing/nobody*, and NPIs of the type *ook maar iets/iemand* and *anything*/*anybody*. Both negative NPs and NPIs can play a role in expressing sentence negation. This is illustrated by means of the following examples from Dutch and English.

(7) a. Jan is over niemand tevreden.
Jan is about nobody satisfied
b. *Jan is niet over ook maar iemand tevreden.
Jan is not about anybody satisfied

(8) a. *John is satisfied with nobody.
b. John is not satisfied with anybody.

In Dutch simple clauses of the type under consideration, sentence negation must be expressed by means of the negative NP *niemand*; the NPI *ook maar iemand* cannot be preceded by the negative adverb *niet*. In the corresponding English sentences, on the other hand, sentence negation must be expressed by means of the negative adverb *not* followed by the NPI *anybody*. Use of the negative NP *nobody* gives rise to a reading with constituent negation, which does not lead to a very felicitous result in example (8a).[2]

We will investigate how the distribution of these negative constituents and NPIs, as well as the differences in distribution in Dutch and English can be accounted for. Our conclusion will be that this is possible only if we abolish the notion of a numeration, and assume that both Merge and Move/Attract are costly operations. Our analysis presupposes the D&E model in (2): Chomsky's computational system functions as the generator of an optimality system whose output is evaluated in an optimality theoretical manner.

Before discussing our analysis in detail, we will first briefly characterize the line of research on negation we are pursuing here. We adopt Chomsky's (1995b) assumption that certain semantic properties of clauses can be expressed by means of formal features. The complementizer of Wh questions, for example, contains a [+wh]-feature that must be checked by a *wh*-phrase. Similar suggestions have been made with respect to sentence negation. Sentence negation is expressed by means of a functional head Neg, which contains a [+neg]-feature that must be checked by moving (or, in the case of *niet* 'not', merging) a negative phrase into the specifier of NegP.[3]

---

[2] Perhaps we are slightly overstating the case here by completely excluding (8a), but a survey on the internet has shown that examples like (8b) constitute the overwhelming majority. Even if the judgments in (8) are an idealization, the line of argumentation in this paper is not affected. Note that in case of e.g. a direct object, negation *can* readily be expressed in two ways in English: it can either be expressed by means of a negative NP or by means of a NPI preceded by the negative adverb *not.* This will be discussed in section 2.3.2, but for the moment we will confine ourselves to prepositional arguments. Two other things must be noted. First, Dutch *ook maar* XP and English *any*-X differ in that the former is typically used in negative contexts (and related contexts, such as conditional clauses and certain types of interrogative clauses), whereas the use of the latter is less restricted. Second, Dutch *ook maar* is adverbial, while English *any* is not. See, with regard to the constituent order in (7a), note 5.

[3] These insights are of course much older: in Haegeman (1992), they are formulated as the Affect-criterion in (i), in which [affective] refers to the features [+wh], [+neg], [+focus], etc. The Affect-criterion originates from May (1985:17) and has been developed further in e.g. Brody (1990a), Haegeman (1992, 1995a) and Rizzi (1996a).

(continues on next page)

That a given negative phrase must move in order to check the [+neg]-feature is not always easy to demonstrate in languages like Dutch, because we may be dealing with string vacuous movement. However, consider the examples in (9) and (10), involving the adjective *tevreden* 'satisfied' with a PP-complement headed by *over* 'about'. In (9), the PP-complement can either precede or follow the adjective. The A-PP order (9a) is arguably the base order — movement of a PP results in a "freezing" effect (cf. Ross', 1967, "Frozen Structure Constraint"), and R-extraction (cf. (8a′&b′)) is possible only when the stranded preposition follows the adjective.

(9) a. Jan is erg tevreden over Peter.
Jan is very satisfied about Peter
a′. de jongen waar$_j$ Jan [$_{AP}$ erg tevreden [$_{PP}$ over $t_j$ ]] is
the boy where Jan very satisfied about is
'the boy whom Jan is very satisfied about'
b. Jan is over Peter erg tevreden.
b′. *de jongen waar$_j$ Jan [$_{PP}$ over $t_j$]$_i$ [$_{AP}$ erg tevreden $t_i$ ] is
the boy where John about very satisfied is

Example (10) shows that the PP complement is moved obligatorily when sentence negation is expressed; this can be accounted for in a natural way if we assume that the PP is moved into SpecNegP in order to check the [+neg]-feature of the functional head Neg (cf. Haegeman 1992 and 1995a, section 3.1, for an extensive discussion of West-Flemish and Klooster 1994b for Dutch).

(10) a. *Jan is erg tevreden over niemand. (fine with constituency negation)
b. Jan is over niemand erg tevreden.
b′. Jan is [$_{NegP}$ [$_{PP}$ over niemand]$_i$ [ Neg ... [$_{AP}$ erg tevreden $t_i$ ]]].

When Chomsky proposed his feature analysis for *wh*-movement, he noted immediately that the feature [+wh] is strong in all languages (see also Hornstein 1995b), and hence applies universally before SPELL-OUT.[4] In Haegeman (1995a) the same has been argued for the feature [+neg]. If this is really the case, this could give rise to the following generalization.

(11) Formal features of functional heads that are relevant for the interpretation of the clause (such as [+wh], [+neg], [+focus], [+topic], etc.) are universally strong, and hence force overt movement (cf. footnote 4).

The generalization in (11) is of course phrased in the 1995 terminology. In the more recent versions of the minimalist program, and in the version of the D&E framework adopted here,
(..continued)

(i) Affect-criterion
a. An Affective operator must be in a Spec-head configuration with an [affective] X°.
b. An [affective] X° must be in a Spec-head configuration with an Affective operator.

[4] At first sight, this seems incompatible with the fact that many languages have the *wh*-phrase *in situ*. However, Chomsky follows Watanabe (1991b), who has shown that these languages do have *wh*-movement, albeit that the moved phrase is a phonetically empty operator. Note that this shows that the notion *overt* must not be taken too literally.

we could simply say that checking of the semantically relevant features cannot take place by means of Agree, but must apply locally — Agree is only an option in case of non-interpretable formal features, that is, in case of A- and head-movement. The restriction to local checking in the case of the semantically relevant features, of course, reflects the exclusive role A′-movement plays in the creation of operator-variable chains and/or the assignment of scope to the operator. In other, words, given that there is no covert movement in the Minimalist Inquiry framework, the obligatoriness of A′-movement follows from the legibility conditions imposed by LF.

## 2.2 Determining the reference set and the optimal candidate

This section will challenge the assumption that it is the numeration that determines which LF-representations are part of the reference set. In section 2.2.1, we will show on the basis of the examples in (7) and (8) that this assumption is not tenable. In the sections 2.2.2 and 2.2.3, we will try to explain these data without making use of this notion. Roughly speaking, our proposal amounts to the idea that the reference set must be defined as consisting of representations with the same meaning (where "meaning" can be construed in the sense of predicate calculus for our present purpose; cf. footnote 6). The discussion in this subsection is strictly confined to the distribution of negative NPs and NPIs in simple clauses (See section 2.3 for a discussion of complex sentences).

### 2.2.1 The problem

In section 2.1, it was shown that sentence negation can be expressed by means of a negative NP, as in the Dutch example in (12a), or by means of a NPI preceded by the negative adverb *not*, as in the English example in (12b).

(12) a. Jan is over niemand tevreden.
Jan is about nobody satisfied
b. John is not satisfied with anybody.

According to the minimalist program, each acceptable sentence is derived from a numeration that contains at least the lexical elements and the required functional heads of that sentence. The derivation of the Dutch sentence in (12a) therefore has a numeration as its input that contains at least a negative NP and the functional head Neg associated with it. The derivation of the English sentence in (12b), on the other hand, has a numeration that contains at least a NPI, the negative adverb *not* and the functional head Neg associated with it. This means that both sets of abstract numerations in (13) may in principle give rise to an acceptable negative sentence.

(13) a. {..., Neg, $NP_{[+neg]}$, ...}
b. {..., Neg, *niet*/*not*, NPI, ...}

This is of course consistent with checking theory, which allows a feature on a head H to be checked either by a phrase moved into the specifier of H or by a phrase merged in that position (cf. Chomsky's analysis of the expletive construction in section 1). In the derivation that takes (13a) as its input, the [+neg] feature of the functional head Neg can be checked by moving the negative NP into SpecNegP, as in (14a) (cf. the discussion of (10)); in the derivation that takes

(13b) as its input, the [+neg] feature can be checked by merging the negative adverb in SpecNegP, as in (14b).

(14) a. Jan is [$_{NegP}$ over niemand$_i$ [$_{Neg'}$ Neg ... [$_{AP}$ tevreden $t_i$ ]]]
b. John is [$_{NegP}$ not [$_{Neg'}$ Neg ... [$_{AP}$ satisfied with anybody]]]

So far, the minimalist program does not impose special requirements on the numeration: when the computational system is able to derive a converging structure on the basis of a certain numeration, this must give rise to an acceptable sentence; when this is not the case, there is simply no grammatical output. Given the fact that the numeration type in (13a) results in the grammatical Dutch sentence in (12a), we expect that this type also gives rise to a grammatical sentence in English. And given the fact that the numeration type in (13b) gives rise to the grammatical English sentence in (12b), we expect that it also gives rise to a grammatical sentence in Dutch.

We have seen earlier, however, that these expectations are not borne out. We will discuss the relevant examples again. Consider the examples in (7) and (8), repeated below as (15) and (16). As we saw above, the grammatical Dutch example takes the numeration type in (13a) as its input. The ungrammaticality of (15b) shows that the numeration type in (13b) does not lead to a grammatical result in Dutch. In English the situation is just the other way around: the numeration type in (13b) leads to the acceptable sentence in (16b), but the ungrammaticality of (16a) shows that the numeration type in (13a) does not lead to an acceptable result.[5]

(15) a. Jan is over niemand tevreden.
b. *Jan is niet over ook maar iemand tevreden.

(16) a. *John is satisfied with nobody.
b. John is not satisfied with anybody.

The problem for the minimalist program is therefore that it cannot exclude the unacceptable examples in (15b) and (16a) without positing additional, and, what is worse, language-specific constraints on the numeration.

### 2.2.2 The reference set

The problem for the minimalist program discussed in the previous subsection is mainly due to the assumption in (17a), below, that it is the numeration that determines which LF-representations are part of the reference set. As a result of that, the examples in (15a) and (15b) are not in the same reference set and hence do not compete, and the same holds for the

[5] The marginally acceptable Dutch sentences in (i) seemingly correspond to the numeration in (13b). However, these sentences contain constituent negation; only *tevreden over ook maar iemand* falls within the scope of *niet*. While it is assumed here (cf. section 3.1) that sentence negation is expressed by means of a [+neg] functional head, we see no reason to assume the presence of such a head in negated constituents. We therefore assume that the numeration of (i) lacks the head required in cases of (simplex) sentence negation, such as (16b).

(i) a. ?Niet tevreden over ook maar iemand is Jan
Not satisfied about anybody is Jan
b. ?Jan is niet tevreden over ook maar iemand (≠ (15b))
Jan is not satisfied about anybody

examples in (16a) and (16b). Of course, we need some restriction on the notion of 'reference set' in order to avoid, for instance, the blocking of a relatively simple sentence like *John watched television* by a computationally more complex example like *John peeled the potatoes before he watched television*. This can be achieved by assuming, following Grimshaw (1997a), that the reference set consists of examples with the same meaning.[6]

(17) a. Reference set (Chomsky 1995b): the set of LF-representations based on the same numeration
b. Reference set (Grimshaw 1997a): the set of representations with the same meaning.

Given Frege's principle of compositionality, according to which the meaning of a complex expression is constructed from the meaning of its parts, the definition in (17b) generally gives the same result as the definition in (17a). In a small number of cases, however, the reference set defined by (17b) is slightly larger. The examples in (15) and (16) illustrate this in a straightforward manner. The meaning of (15a) can be expressed in predicate calculus by means of the formula in (18a). Hornstein (1984a) has argued that a NPI like *ook maar iemand* or *anybody* can be represented as a universal operator with wide scope (i.e. with scope over the other operators in the clause).[7] This implies that the unacceptable example in (15b) can be semantically represented as in (18b). Since the formulas in (18a) and (18b) are semantically equivalent ($\neg\exists xF(x) : \forall x\neg F(x)$), (15a) and (15b) are part of the same reference set according to (17b). This is not the case according to (17a) because they do not have the same numeration as their input.

(18) a. $\neg\exists$x (x:person) (Jan is tevreden over x)
b. $\forall$x (x:person) $\neg$(Jan is tevreden over x)

As has already been mentioned above, the problem for the minimalist program is that each numeration that gives rise to a convergent LF-representation should result in at least one acceptable sentence, so that according to (17a) both sentences in (15) should be acceptable. This does not follow when we replace (17a) by (17b): according to (17b), (15a) and (15b) are part of the same reference set, so that we can assume that the ungrammaticality of (15b) is

[6] For our present purpose, "meaning" can be construed in the sense of predicate calculus, but the sense of the word is actually somewhat broader including at least notions from the theory of information structure, such as focus and presupposition. Ultimately the proper definition is an empirical matter. Note, in passing, that Grimshaw actually takes a hybrid position by assuming that both the input *and* the meaning are relevant for determining the reference set.

[7] Hornstein assumes this, because *any-X* can also be used in contexts like (ia), to which the meaning in (ib) can be assigned. Instead of assuming two different interpretations for *any*, he prefers assigning a single meaning to this element. In Dutch, *ook maar iemand* 'anybody' as well as *om het even wie* or *wie dan ook* 'whoever' may be used in contexts like (ia), with a slight preference for the latter two. As e.g. Zanuttini (1991c:116) has pointed out, universal quantifiers, such as *everybody*, *all* and *everywhere*, can be modified by means of expressions like *almost* and *just about*, while existential quantifiers like *some* and *any* cannot. That would make *ook maar iemand* an existential quantifier, but *om het even wie* and *wie dan ook* universal ones. For convenience, however, we will adopt Hornstein's proposal also for Dutch. This is innocuous in the contexts that we will discuss, in view of the logical equivalence mentioned in the main text.

(i) a John will be richer than anyone here
b $\forall$x (x: a person here) (John will be richer than x)

caused by the fact that, for one reason or another, (15a) is preferred over (15b). Of course, this reason cannot be universal in nature — according to (17b), the English examples in (16) are also part of the same reference set, but now it is not the a-example but the b-example that is favored.

### 2.2.3 The selection of the optimal candidate

In order to account for the data in (15) and (16), we must postulate two language-specific hypotheses. One possibility would be to parameterize one or more properties of the computational system. However, the only parameterization that is allowed in the current version of the minimalist program is the postulation of an EPP-feature, and this is not useful for our present purposes since it only expresses whether a certain formal feature must be checked locally. The feature [+neg], that we are concerned with here, is checked locally in both construction types; in the a-examples it is checked by the negative NP, and in the b-example by the negative adverb *niet*/*not*. Therefore, we have to find a different solution.

According to the D&E framework in (2), the lexical elements are drawn directly from the lexicon. The operations of $C_{HL}$ are defined in the same way as in current minimalism, but apply in a random fashion. As a result, the output of $C_{HL}$ is the set of all converging derivations. The evaluator compares the semantically equivalent derivations, and selects the optimal candidate in an optimality-theoretic fashion. For convenience, we summarize the basic ideas of Optimality Theory in (19) (adapted from Archangeli 1997:15).

(19) a. The candidates in a reference set are evaluated on the basis of a set of universal violable constraints CON.
b. A language L is a *ranking* of the constraints in CON: ranking a constraint C above D (C >> D) implies that, in L, violation of C is worse than violation of D.
c. The evaluator finds the candidate that *best satisfies* the ranked constraints in L:
(i) Violation of a lower ranked constraint may be tolerated in order to satisfy a higher ranked constraint.
(ii) Ties (by violation or by satisfaction) of a higher ranked constraint are resolved by a lower ranked constraint.

Above we have seen that local checking of the feature [+neg] can take place in either of two ways: in (15a) and (16a) it is obtained by means of the operation Move/Attract, that is, by movement of the negative NP into SpecNegP; in (15b) and (16b) it is obtained by application of Merge — the negative adverb is taken directly from the lexicon and placed into SpecNegP. Here, we want to suggest that both operations involve a certain "cost". This can be expressed by assuming the two constraints in (20): the star indicates that applying the operation in question induces a violation of the constraint (*MOVE is of course better known as STAY in the literature but we prefer using the former notation because it emphasizes the parallelism between the two constraints).

(20) a. *MOVE: Do not move
b. *MERGE: Do not merge

Of course, these operations are violated in all syntactic constructions, because it is impossible to create a syntactic object without them. But this is allowed since the constraints are violable (cf. (19a)). The effect of the constraints, however, is that they block derivations in which there are

superfluous applications of either Move or Merge. In other words, they are true economy constraints.

The contrast between the Dutch and English data can now be accounted for by assuming a different ranking of the two constraints in these languages (cf. (19b)). Given the fact that in the Dutch examples in (15), sentence negation is expressed by means of a negative NP, we must conclude that Dutch prefers movement over the application of Merge; the Dutch ranking is therefore as given in (21a) — in this language, a violation of *MERGE is worse than a violation of *MOVE. English, on the other hand, prefers the use of a NPI, so that we must assume that in this language the application of Merge is preferred over Move/Attract; the English ranking is therefore as in (21b).

(21) a. Dutch: *MERGE >> *MOVE
b. English: *MOVE >> *MERGE

The relevant evaluations can be represented as in the tableaus 1 and 2. The order of the constraints indicates their relative importance in the given language. A star in a constraint column indicates violation, and an exclamation mark indicates that the violation is fatal for the representation — there is another representation that satisfies the constraints better. Only those violations with respect to which the candidates differ are indicated.

| Tableau 1: Dutch | *MERGE | *MOVE |
|---|---|---|
| ... [$_{NegP}$ niemand$_i$ [ Neg ... $t_i$ ... ]] | | * |
| ... [$_{NegP}$ niet [ Neg ... NPI ...]] | *! | |

| Tableau 2: English | *MOVE | *MERGE |
|---|---|---|
| ... [$_{NegP}$ nobody$_i$ [ Neg ... $t_i$ ... ]] | *! | |
| ... [$_{NegP}$ not [ Neg ... NPI ...]] | | * |

### 2.2.4 Conclusion

We have shown that the assumption in (17a) that it is the numeration that determines which candidates are part of the reference set is not tenable in the light of the data in (15) and (16). We therefore replaced this assumption by the assumption in (17b) that the candidates in the reference set have the same meaning. In addition, we assumed the existence of the "economy" constraints *MERGE and *MOVE, which essentially express that the operations Merge and Move/Attract are both costly. The differences between Dutch and English can be accounted for by assuming that the ranking of these constraints differ in the two languages. The number of facts discussed in this subsection is of course very small. For that reason we will show in the following subsection that our analysis can be extended to a number of other, more complex cases.

## 2.3 Extending the analysis

In section 2.2, we illustrated the basic ingredients of our analysis by means of the examples in (15) and (16). In this section, we will extend our analysis to a number of other examples, and discuss a number of problems with respect to Dutch (2.3.1) and English (2.3.2).

### 2.3.1 Dutch

As we showed in section 2.2, Dutch prefers the application of the operation Move/Attract over the application of Merge. It follows that Dutch prefers the use of negative constituents over the use of NPIs. This preference is, however, not absolute: in some cases a NPI must be used, as will be demonstrated in the following subsections.

#### 2.3.1.1 Negative polarity items in Dutch simple clauses

In (22), below, we have a Dutch example containing a NPI. The sentence can be analyzed as in (22b). The NP *niemand* can be translated as a negative existential operator and the NPI as a universal operator with wide scope, as in (22c), which is of course equivalent to the representation in (22c′).[8]

(22) a. Niemand heeft ook maar iets gezien.
Nobody has anything seen
b. niemand$_i$ heeft [$_{NegP}$ $t_i$ [ Neg ... [ $t_i$ ook maar iets gezien]]]
c. $\forall y \neg \exists x$ (x,y: persons) (x saw y)
c′. $\neg \exists y \exists x$ (x,y: persons) (x saw y)

It must be noted that (22a) is more or less synonymous with example (23a). The negative NP in SpecNegP is translated as a negative existential operator and the NP *iets* is translated as an existential operator in the scope of the first one (note that $\neg \exists y \exists x$ is equivalent to $\neg \exists x \exists y$).

(23) a. Niemand heeft iets gezien.
Nobody has something seen
b. niemand$_i$ heeft [$_{NegP}$ $t_i$ [ Neg ... [ $t_i$ iets gezien]]]
c. $\neg \exists x \exists y$ (x,y: persons) (x saw y)

If these two examples are indeed semantically equivalent, they must be in the same reference set. According to our proposal this is permitted. As is shown in tableau 3, the two constructions involve the same number of applications of the operations Move/Attract and Merge. They therefore violate the constraints to the same extent, and are therefore both acceptable.[9]

---

[8] Observe that the subject *niemand* is subsequently moved from SpecNegP to the subject position SpecIP. This movement is generally considered impossible; A′-movement cannot be followed by A-movement. One way to solve this problem is by assuming that there is no separate Neg-projection but that the [+Neg]-feature is actually on I itself. This resembles Rizzi's (1996a) proposal that also the [+wh]-feature can be part of I. See Broekhuis & Dekkers (2000b), Dekkers (1999), and section 2.3.2.1 for further discussion).

[9] The difference in interpretation between the two examples presumably cannot be expressed by means of predicate calculus; (23a) normally would mean something like (ia) while (22a) means, roughly, (ib).

(i) a. there are no persons x and things out of the ordinary y such that x saw y.
b. there are no persons *x* nor is there even one thing out of the ordinary *y* such that *x* saw *y*.

(continues on next page)

| Tableau 3: Dutch | *MERGE | *MOVE |
|---|---|---|
| ... [$_{NegP}$ niemand$_i$ [ Neg ... $t_i$ ... NPI ...]] | | * |
| ... [$_{NegP}$ niemand$_i$ [ Neg ... $t_i$ ... iets ...]] | | * |

The examples in (22a) and (23a) show that in negative contexts a non-specific, indefinite NP like *iets* and a NPI like *ook maar iets* may alternate. Their distribution exhibits even more similarities: they are both excluded when SpecNegP is filled with the negative adverb *niet*, as is shown in (24). As said, the structure containing a NPI is blocked by the construction in (24a) with the negative NP *niets*. As is illustrated in tableau 4, the same holds for the example containing *iets* in (24c) — just like (24b), (24c) involves an additional violation of *MERGE that is lacking in (24a).

(24) a. Jan heeft niets gezien.
Jan has nothing seen
b. *Jan heeft niet ook maar iets gezien.
Jan has not anything seen
c. *Jan heeft niet iets gezien.[10]
Jan has not something seen

| Tableau 4: Dutch | *MERGE | *MOVE |
|---|---|---|
| ... [$_{NegP}$ niets$_i$ [ Neg ... $t_i$ ...]] | | * |
| ... [$_{NegP}$ niet [ Neg ... NPI ...]] | *! | |
| ... [$_{NegP}$ niet [ Neg ... iets ...]] | *! | |

(..continued)

(ib), unlike (ia), seems to imply that the possibility of seeing one or more things out of the ordinary was more remote than the hearer might have thought (cf. McCawley 1981 on *even*). Clearly it would not be unreasonable to assume that such meaning differences correspond to different reference sets. But notice that (23a) is in fact ambiguous between (ia) and (ib), depending on whether *iets* bears Focus (in which case the sentence would correspond to (ib)) or not. *Iets*, like Modern Greek *típota*, may have to be considered a NPI when bearing Focus (Tsimpli and Roussou 1996b, Klooster 2001). Example (23a) might then be assumed, by virtue of (17b), to be in the same reference set as (22a) when read as (ib), but in a different one when read as (ia). In the latter case, the prediction would of course also be that both are grammatical. Extending in this direction the technical notion of "meaning" we adopt in the main text would thus not affect our general argument. This carries over to the examples (24) below, in the sense that we may take *iets* in (24c) as bearing Focus and hence being semantically equivalent to the NPI in (24b). Under the other reading of *iets*, (24c) is grammatical and, belonging to an entirely different reference set, is not blocked by (24a) (see note 10).

[10] There is also a sense in which (24c) is grammatical. In the case of 'supposition negation' (Klooster 1984b, 2001) *niet* followed by an indefinite NP is allowed. Examples are: *Ken jij niet iemand die zou kunnen helpen?* 'Don't you know someone who could help?', *Als je niet iets beters weet...,* 'If you can't think of something better…', *Zolang je niet een antwoord hebt op die tegenwerping...* 'As long as you don't have an answer to that objection…', *Nee, hij woont niet ergens in de buurt, hij ligt op het kerkhof* 'No, he does NOT live somewhere in the neighborhood, he lies buried at the graveyard'. (24c), taken as supposition negation, however, belongs to a different reference set.

#### 2.3.1.2 Negative polarity items in Dutch embedded clauses

NPIs can also appear in Dutch in the context of inherently negative predicates (or, as Baker 1970 has called them, 'adversative predicates', such as *doubt*, *be surprised*, *be against* and *deny*), as well as negated so-called Negative Raisers, such as *think*, *believe* and *recommend*.[11] These expressions signify the matrix subject's denial, doubt etc. concerning the contention in the complement clause. Klooster (1995c) accounts for this by assuming that they select a 'negative CP', i.e. a CP whose specifier contains a (phonetically empty) negative operator, as indicated in (25a) (see Laka 1994c for convincing evidence concerning negative complementizers in Basque.) Again the NPI, if taken as a universal quantifier (see above), can be interpreted as having wide scope (that is, scope over the negation expressed by the negative operator), so that the meaning of this sentence can be expressed as in (25b), or, equivalently, (25b′).

(25) a. Ik denk niet [$_{CP}$ OP$_{[+neg]}$ dat [$_{IP}$ Jan over ook maar iemand tevreden is]]
I think not that Jan with anybody satisfied is
b. I think: ∀x (x:person) ¬(Jan is satisfied with x)
b′. I think: ¬∃x (x:person) (Jan is satisfied with x)

In (26a), below, the embedded clause contains an additional NegP. This means that the clause contains two negative operators that cancel each other, as in (26b). Observe, furthermore, that (26a) is actually ambiguous, because *denken* need not be interpreted as a "Neg Raiser"; the sentence can also be interpreted as the denial of the contention *ik denk dat Jan over niemand tevreden is* 'I think that Jan is not satisfied with anyone'. In that case the semantic representation is as given in (26c).

(26) a. Ik denk niet ...
I think not ...
[$_{CP}$ OP$_{[+neg]}$ dat [$_{IP}$ Jan ... [$_{NegP}$ over niemand$_i$ [ Neg ... [$_{AP}$ tevreden $t_i$ ] is]]]]
that Jan with no-one satisfied is
b. I think: ¬¬∃x (x:person) (Jan is satisfied with x)
b′. I think: ∃x (x:person) (Jan is satisfied with x)
c. ¬(I think: ¬∃x (x:person) (Jan is satisfied with x))

In connection with the discussion above, it must be noted that we cannot assume that the NPI *ook maar iemand* in (25a) is licensed by the negative adverb *niet* in de matrix clause .[12] If

[11] Klooster (1984:86 ff) argued that *niet* 'not' does not express negation when occurring with Neg Raisers, but is only construed with the verb. Expressions such as *ik denk niet* 'I don't think', *ik geloof niet* 'I don't believe' are thus seen as fixed combinations and treated on a par with inherently negative predicates. Klooster (2003b) partly abandons this view and argues that Neg Raising constructions involve pleonastic negation. See note 12 for more discussion.

[12] This raises a question concerning the status of the negative adverb *niet* in the matrix clause in examples like (25a) and (26a) under the 'Neg Raising' reading. Two mutually exclusive solutions come to mind. We could assume that the matrix clause does not contain a NegP, and that combinations like *niet geloven* 'not to believe' are lexical units, comparable to inherently negative verbs like *ontkennen* 'deny', or *betwijfelen* 'doubt', which select sentential complements with negative complementizers whose specifiers contain an abstract negative operator. One drawback of this solution is that we would have to consider combinations such as *niemand* + *geloven* to be lexical

(continues on next page)

that would be the case, we would wrongly expect that also examples like (27) would be acceptable. From the assumption that "Neg Raisers" and inherently negative predicates select covertly negative sentential complements, on the other hand, the unacceptability of (27) follows immediately: *antwoorden* 'to reply' does not belong to that set, so that *ook maar iemand* in (27) is not licensed.

(27) ) *Ik antwoord niet dat Jan over ook maar iemand tevreden is.
I reply not that Jan with anybody satisfied is

In addition, it is correctly predicted that the two negative adverbs in example (28a) cannot cancel each other, as is the case in (26) under the collocation reading; (28a) has the meaning in (28c) only — the interpretation in (28b) is impossible.

(28) a. Ik antwoord niet dat Jan over niemand tevreden is.
I answer not that Jan with nobody satisfied is
b. impossible reading: I answer: ∃x (x:person) (Jan is satisfied with x)
c. acceptable reading: ¬ (I answer: ¬∃x (x:person) (Jan is satisfied with x))

#### 2.3.1.3 Conclusion

In sum, we can say that our analysis provides an explanation for the observational generalization that in Dutch, non-specific, indefinite NPs (including NPIs like *ook maar XP*) may never occur in the c-command domain of the negative adverb *niet*. It gives an explanation for the descriptive filter in (29). This filter is also applicable to numerous other constructions (e.g. *een bal* in *'t Kan me geen bal schelen* 'I don't care a hoot'), which have not been discussed here.

(29) *[$_{CP}$ ... [$_{NegP}$ niet [ Neg ... NP$_{[-def]}$ ...]]]

### 2.3.2 English

Unlike Dutch, English prefers the application of MERGE over the application of MOVE/ATTRACT, from which it follows that English has a preference for the use of NPIs over negative constituents. Again, the preference is not absolute: we will discuss English examples containing negative subjects in section 2.3.2.1, and English examples containing negative objects in section 2.3.2.2.

(..continued)
items as well (as in *Niemand gelooft dat er ook maar iets zal gebeuren* 'Nobody believes anything will happen'). Alternatively, we could assume that the matrix clause contains NegP. Checking the [+neg] feature overtly is possible only by filling SpecNegP with *niet*, because sentential complements can never be placed in the middle field of the clause. Since the embedded clause in Neg Raising constructions must also contain a left-peripheral abstract negative operator, as is evidenced in Basque (Laka 1994c) and argued in Klooster (2003b), Neg Raising constructions should then be taken to be cases of pleonastic negation. According to Klooster (2003b), the matrix negation will have to be eliminated through Neg absorption at LF. If we follow Chomsky 2000c in abandoning covert movement, however, it might simply be the case that filling SpecNegP with pleonastic *niet* is needed for checking some distinctive feature of NR verbs, say [+ plneg]; this feature could then be taken to mark the superfluity of the matrix negation.

#### 2.3.2.1 Negative subjects

Sentences with negative subjects, like *nobody*, *no dogs*, *nothing*, are perfectly correct, while NPI subjects (in sentences not containing presentative *there*) are not. In this section we would like to suggest a solution to this problem that is based on a view on phrase structure adapted from Nash and Rouveret (1997c). Consider the examples in (30).

(30) a. Nobody was sitting in the room.
b. *Anybody was not sitting in the room.

In (30a), the subject has clearly moved from its VP-internal position into the subject position of the clause. One possible approach to these data is to assume that such a movement forces the subject to cross the projection of the functional head Neg. It would seem that this is only possible if the subject moves via SpecNegP into SpecIP. The computational system is designed in such a way that an element cannot skip a position in which it could potentially check a feature. The derivation leading to the representation in (31a), below, is therefore allowed. We will not elaborate on an analysis of this type, because we will offer an alternative analysis below. We would like to point out, however, that a derivation as in (31a) could be related to the property of traces that they are not visible to the computational system (cf. Chomsky 1995b: 304, ex. (93)). If *nobody* would skip SpecNegP, the [+neg] feature could not be checked, as the trace of the negative NP is not visible to the computational system and cannot be attracted by Neg; the negative NP itself cannot be attracted either, of course, since it is not c-commanded by Neg. Hence, moving the negative NP via SpecNegP to IP is the only way to achieve convergence.

(31) a. [$_{IP}$ nobody$_i$ [ was [$_{NegP}$ $t_i$ [ Neg … [$_{VP}$ $t_i$ sitting in the room]]]]]
b. *[$_{IP}$ anybody$_i$ [was [$_{NegP}$ not [ Neg … [$_{VP}$ $t_i$ sitting in the room]]]]]

The ungrammaticality of (31b) does not follow automatically from this analysis. Traditionally, it is attributed to a condition according to which the NPI must be in the c-command domain of the negative adverb *not*. However, it is not clear whether such an account is still valid within the minimalist program, since licensing is assumed to involve a local relationship (Spec-Head, sisterhood, etc.). In an OT-approach in which *MOVE is ranked higher in English than *MERGE, we cannot derive the desired distinction either. This is shown in tableau 5:

| Tableau 5: English (incorrect) | *MOVE | *MERGE |
|---|---|---|
| a. [$_{IP}$ nobody$_i$ [was [$_{NegP}$ $t_i$ [ Neg ... [$_{VP}$ $t_i$ ... | **! | |
| b. [$_{IP}$ anybody$_i$ [was [$_{NegP}$ not [ Neg ... [$_{VP}$ $t_i$ ... | * | * |

As is clear from this tableau, the structure in (31b) is preferred over (31a), because (31b) invokes just one violation of *Move, and (31a) two. Provided that the given ranking of the two constraints is correct for English, something must be wrong with the structures in (31). This conclusion can also be drawn on the basis of the longstanding generalization that A′-movement cannot be followed by A-movement; structure (31a) violates this "improper movement" condition; cf. footnote 8.

An alternative to the structure in (31a) could be arrived at by assuming that features like [+wh], [+neg], etc., need not be realized as separate functional heads, but can be part of independently motivated heads like I and the (light) verb, which would of course also contribute to the reduction of the functional structure of the of the clause.[13] The structure of (30a) would then be as given in (32a), in which movement of the subject into SpecIP results in checking *both* the case *and* the [+neg]-feature on I. For (31b) we can now assume that I has a proxi-head, as in (32b). The idea of proxi-heads, which is adapted here from Nash and Rouveret (1997c), is very simple. When a head H has a filled specifier, but still contains a feature that must be checked, an empty projection is formed above its own. As a second step, H moves in the empty head position (the proxi-head), the specifier of which is subsequently filled with an element that may check the unchecked feature of H (see Broekhuis 2000a for a more extensive discussion). It can be assumed that as a result of the movement of H into the empty head position, the proxi-projection is of the same category as H (cf. also Grimshaw 1997a) — for this reason, the structure in (32b) contains two IPs instead of one.

(32) a. [$_{IP}$ nobody$_i$ [[$_I$ was] [$_{VP}$ … $t_i$ …]]]
b. [$_{IP}$ anybody$_i$ [[$_I$ was] [$_{IP}$ not [ $t_I$ [VP … $t_i$ …]]]]]

The structures in (32) do provide the desired results: besides the violation of *MOVE induced by the obligatory movement of the subject that also takes place in the derivation of (32a), the derivation in (32b) involves an additional violation of this constraint as a result of the movement of the verb into the empty proxi-head. Of course, the derivation in (32b) also has an additional violation of *MERGE, but this is not relevant because the additional movement of the verb is already decisive.

| Tableau 6: English | *MOVE | *MERGE |
|---|---|---|
| a. [$_{IP}$ nobody$_i$ [[$_I$ was] [$_{VP}$ ... $t_i$ ...]]] | * | |
| b. [$_{IP}$ anybody$_i$ [[$_I$ was] [$_{IP}$ not [ $t_I$ [$_{VP}$... $t_i$ ...]]]]] | **! | * |

### 2.3.2.2 Negative objects

In this subsection we turn to negative constituents which are not subjects. Since most of what can be said on negative direct objects is also true of non-subjects in general, we will concentrate here on the former.[14] Some examples are given in (33).

[13] The assumption that [+wh] can be part of I is already found in Rizzi (1996a). Other proposals that aim at reducing the functional structure of the clause can be found in e.g. Chomsky (1995b: section 4.10) and Grimshaw (1991a/1997a), with which the proposal of Nash and Rouveret adopted in the main text shares a number of properties.

[14] One phenomenon, however, which does not seem to be common with objects, should be mentioned here: *no* + noun as a nominal predicate often indicates the opposite rather than the negation of what is meant by the positive counterpart: *I am no philosopher* vs. *I am not a philosopher*, *Mary is no angel* vs. *Mary isn't an angel*. Because of this semantic difference, *no* + noun predicates are, so to speak, no problem with regard to our argument.

(33) a. I took no position on the Board's actions
b. He made no attempt to grab at it
c. It solves nothing, does it?

Given the preference of English for NPIs as direct objects in negative sentences, we would wrongly expect that, of the pair in (34), only (34b) is acceptable. Moreover, (34a) appears to be a violation of the generalization in (11), according to which negative lexical material should move to SpecNegP.

(34) a. We have no plans.
b. We don't have any plans.

Haegeman (1995a: 185-6) proposes that in the case of sentences with negative NP objects, there is a non-overt operator in SpecNegP, which has to be identified by association with overt material. The non-overt operator forms a chain with the negative constituent (<$OP_i$, *no plans*$_i$>). The Affect Criterion is satisfied by virtue of a Spec-Head relation between Neg and the operator chain. This approach implies that the grammar does not differentiate between the status of (34a) and (34b).

There are, however, reasons to assume that constructions like (34a) should not be handled by "core syntax", but be considered part of the periphery: (34a) is acceptable only if e.g. register is taken into account. As far as we have been able to ascertain, there are at least four characteristics that, separately or in various combinations, set negative object constructions apart from the "core cases" involving NPI objects. These are given in (35).[15]

(35) a. register
b. denial of something assumed in the context
c. stressing the complete absence of the thing mentioned in the object
d. collocability.

Negative sentences containing non-subjects of the form *no* + noun, instead of *not*/*n't* + NPI (+ noun) combined with *do*-support, are typical of an earlier stage of the English language (cf. e.g. Ellegård, 1953: 162, and Fischer et al., 2000d: 302ff). This might explain why *no* + noun objects are often felt to be archaic, or perceived as belonging to some dialect, as dialects are often more conservative than the standard vernacular. Hence, presumably, the formal register felt in the set of examples in (36a), as well as the non-standard or slightly sub-standard character of the set in (36b). Both sets are therefore instances of register, that is, (35a) above.

(36) a. Her books certainly evince no faith in art; I feel no urge to stay.
b. I got no car; I got no mule; I got no misery; I tell you no lie.

Example (37a) is about some air or space vehicle which is supposed to have rocket nozzles but appears not to have any. Example (37b) seems to imply a context where it has been

[15] Curiously enough, handbooks of English grammar like Quirk (1979) or Zandvoort (1972) generally skirt the discussion of negative constituents which are not subjects, despite their frequent occurrence, though some will say that *not* + NPI is more colloquial (Quirk 1979: section 10.60). We like to thank Craig Thiersch and Claire Gronemeyer for helping us identifying the four characteristics in (35).

asserted that Bill did say something, and is contradicting this assertion, as opposed to the *not*/*n't* + *anything* variant. Thus both examples in (37b) involve a denial of the expected, and are thus instances of (35b). In this sense, they are special cases, and should not be treated on a par with "normal" negative sentences.

(37) a. She could see no rocket nozzles at its flaring base.
b. Bill said nothing.

Example (38a) suggests that there was absolutely nobody at the bar, whereas example (38b) only claims that none of the friends were there (that is, other people may have been there). Example (38a), then, is an illustration of (35c), stressing the absolute absence of the thing-mentioned, and must be distinguished from the *any* variant by virtue of a patent meaning difference.

(38) a. I went to the bar to meet my friends, but I saw nobody.
b. I went to the bar to meet my friends, but I didn't see anybody.

Example (39), finally, contains a few examples of fixed combinations, illustrating (35d), the collocability of *no* in objects. Note in passing that *no* + noun objects appear to be more common in combination with *have* than with other verbs.

(39) a. John left me no/little choice.
b. His arrogance knew no limits.
c. I had no way of knowing that.

We conclude on the basis of the example in (36) to (39) that sentences with *no* + noun objects either do not mean the same thing as their counterparts with *any* or, if in some cases perhaps they do, are peripheral in the sense of representing special register, archaic language or fixed combinations. They therefore do not fall inside the scope of syntax proper.

## 3 Final conclusion

In this article we have discussed Chomsky's assumption that Merge is a "costless" operation, which is therefore preferred over the operation Move/Attract. We have shown that this assumption is not well-motivated, and argued that the two operations are both costly. This conclusion has made it possible to reconsider the need of assuming the notion of a numeration. Our conclusion is that this notion is superfluous and can therefore be discarded. We have further argued that this is not only desirable, but actually required, given that the assumption that reference sets are based on the same numeration makes it impossible to give a descriptively adequate account for the distribution of negative constituents and NPIs.

References

Aissen, Judith (1975). Presentational-*there* insertion: a cyclic root transformation. *NELS* 11:1-14.

Bresnan, Joan (1994a). Locative Inversion and the architecture of Universal Grammar. *Language* 70:72-131.

Brody, M. (1990a). Some remarks in the focus field in Hungarian. In *UCL working papers in Linguistics 2*. London: University College of London.

Broekhuis, Hans (2000a). Against feature strength: the case of Scandinavian object shift. *Natural Language & Linguistic Theory* 18:673-721.

Broekhuis, Hans, and Dekkers, Joost (2000b). The Minimalist Program and Optimality Theory: derivations and evaluations. In *Optimality Theory: phonology, syntax and acquisition*, Joost Dekkers, Frank van der Leeuw and Jeroen van de Weijer (eds.), 386-422. Oxford/New York: Oxford University Press.

Broekhuis, Hans (2003a). Subject shift and object shift. In *Germania et alia: A linguistic webschrift for Hans den Besten*, Jan Koster and Henk Van Riemsdijk (eds.).

Chomsky, Noam (1995b). *The minimalist program*: Current studies in linguistics ; 28. Cambridge, MA: The MIT Press.

— (2000c). Minimalist inquiries: the framework. In *Step by step. Essays on minimalist syntax in honor of Howard Lasnik*, Roger Martin, David Michaels and Juan Uriagereka (eds.), 89-155. Cambridge, MA: MIT Press.

— (2001a). Derivation by phase. In *Ken Hale. A life in Language*, Michael Kenstowicz (ed.), 1-52. Cambridge, MA: MIT Press.

— (2001b). Beyond explanatory adequacy. Ms., *MIT Occasional Papers in Linguistics*. Cambridge (Mass.).

Dekkers, Joost (1999). Derivations & evaluations. On the syntax of subjects and complementizers, HIL dissertations 21: Phd.-thesis.

Den Dikken, Marcel, and Naess, Alma (1993). Case Dependencies: the case of predicate inversion. *The Linguistic Review* 10:303-336.

Ellegård, Alvar (1953). *The auxiliary do: the establishment and regulation of its use in English*. Stockholm: Almkvist and Wiksell.

Fischer, Olga, Van Kemenade, Ans, Koopman, Willem, and Van der Wurff, Wim (2000d). *The syntax of early English*. Cambridge: Cambridge University Press.

Grimshaw, Jane (1991a). Extended projections. Ms. Brandeis University, Walthamm (Mass.).

— (1997a). Projection, Heads and Optimality. *Linguistic Inquiry* 28:373-422.

Haegeman, Liliane (1992). Negation in West Flemish and the Neg Criterion. *NELS* 22.

— (1995a). *The syntax of negation*: Cambridge studies in linguistics 75. Cambridge: Cambridge University Press.

Hoekstra, Teun, and Mulder, René (1990b). Unergatives as copular verbs; locational and existential predication. *The Linguistic Review* 7:1-79.

Hornstein, Norbert (1984a). *Logic as grammar*. Cambridge, Mass.: MIT Press.

— (1995b). *Logical Form: from GB to minimalism*. Oxford: Blackwell.

Klooster, Wim (1984b). Ontkenning en noodzakelijkheid. Observaties met betrekking tot negatie en *moeten*. *Glot* 7:63-120.

— (1994b). Syntactic differentiation in the licensing of polarity items. *HIL Manuscripts* 2:43-56.

— (1995c). Monotonicity and scope of negation. Ms. University of Amsterdam.

— (2001). *Geen*. Over verplaatsing en focus. *Nederlandse Taalkunde* 6:54-84.
— (2003b). Negative raising revisited. In *Germania et alia. A linguistic Webschrift for Hans den Besten*, Jan Koster and Henk van Riemsdijk (eds.). Groningen/Tilburg.
Laka, Itziar (1994c). *On the syntax of negation*. New York: Garland Press.
May, Robert (1985). *Logical form: its structure and derivation*: Linguistic inquiry monographs 12. Cambridge, MA: MIT Press.
McCawley, James D. (1981). *Everything that Linguists have Always Wanted to Know about Logic (but were ashamed to ask)*. Chicago: Chicago University Press.
Moro, Andrea (1997b). *The raising of predicates. Predicative noun phrases and the theory of clause structure*: Cambridge Studies in Linguistics. Cambridge: Cambridge University Press.
Nash, Léa, and Rouveret, Alain (1997c). Proxy categories in phrase structure theory. *NELS* 27:287-304.
Pesetsky, David (1997d). Optimality Theory and syntax: movement and pronunciation. In *Optimality theory : an overview*, Terence Langendoen (ed.), 134-170. Malden/Oxford: Blackwell.
— (1998). Some optimality principle of sentence pronunciation. In *Is the best good enough?*, David Pesetsky (ed.), 337-383. Cambridge, MA: MIT Press.
Quirk, Randolph, Greenbaum, Sidney, Leech, Geoffrey, and Svartvik, Jan (1979). *A grammar of comtemporary English*. London: Longman.
Rizzi, Luigi (1996a). Residual Verb Second and the Wh Criterion. In *Parameters and functional heads. Essays in comparative syntax*, Adriana Belletti and Luigi Rizzi (eds.). Oxford/New York: Oxford University Press.
Ross, John (1967). *Constraints on variables in syntax*. Bloomington: Indiana university linguistic club.
Tsimpli, Ianthi-Maria, and Roussou, Anna (1996b). Negation and polarity items in Modern Greek. *The Linguistic Review* 13.
Watanabe, A. (1991b). Wh-in situ, Subjacency and Chain-formation. Ms. MIT.
Zandvoort, R.W. (1972). A handbook of English grammar. Groningen: Wolters Noordhoff.
Zanuttini, R. (1991c). Syntactic properties of sentential Negation: a comparative study of Romance languages, University of Pennsylvania: PhD.-thesis.