Cad.Est.Ling., Campinas, (34):33-40, Jan./Jun. 1998

SOME NOTES ON FEATURE MISMATCH

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RESUMO Chomsky (1995) propõe que a incompatibilidade de traços em configuração de checagem ("feature mismatch") causa o cancelamento de um derivação sintática. Este trabalho discute a base conceptual e empírica dessa proposta, apontando alguns problemas e delineando possíveis abordagens alternativas.

1. INTRODUCTION[1]

One of the main assumptions of the Minimalist Program developed by Chomsky (1993, 1995) is that movement operations are triggered by feature checking. If this is correct, Minimalist considerations should lead us to expect the operation Move to deal with features, rather than categories. Apparently, however, this expectation systematically fails to be met. A core property of human languages is that they place categories (lexical items and phrases) in positions different from the ones where they are interpreted. The question then is why the language faculty has such a departure from optimality.

Chomsky's (1995:262-263) answer is that this departure is illusory. Overt movement of a feature F has the appearance of movement of a category containing F, because Morphology presumably is not able to operate with isolated features or other scattered parts of words; thus, when a feature of a lexical item or a phrase moves overtly, all the other features of that category (formal, semantic, and phonological) must be pied-piped. On the other hand, assuming that covert movement does not feed Morphology, it need not (therefore must not) resort to generalized pied-piping; if Move targets a feature F of a lexical item LI in the covert component, it only displaces the set of formal features of LI.

Given this general picture, a very interesting question arises: in a given configuration for feature checking, what happens in the case of feature mismatch? Does the derivation crash because of some unchecked [-interpretable] feature or is it

[1] This paper is based on section II.14.4 of my dissertation (see Nunes 1995). I am thankful to Mary Kato for comments and suggestions.

canceled?[2] In an attempt to reduce the complexity of the computations required to determine whether a derivation will converge or crash, Chomsky (1995:309) proposes that in this circumstance, the derivation is canceled. In this paper I show that this proposal has some empirical and conceptual disadvantages and that the more promising approach is the one in which feature mismatch by itself does not cancel the derivation.

The paper is organized as follows: section 2 reviews Chomsky's discussion of feature mismatch in constructions involving wh-movement, EPP, and Case checking; section 3 poses some empirical and conceptual problems for the proposal sketched in section 2 and outlines alternative approaches; and section 4 presents a brief conclusion.

2. WH-MOVEMENT, EPP, AND CASE CHECKING UNDER CHOMSKY'S (1995) APPROACH

Chomsky (1995:309) proposes that when a feature moves, if any of the pied-piped formal features mismatches a feature of the target, the derivation is canceled:

> Suppose that *f* is the Case-assigning feature of K, α and β have the unchecked Case features F_α and F_β (respectively), and F_α but not F_β matches *f*. Suppose that β is closer to K than α. Does β prevent K from attracting α? The Case feature F_β of β does not do so; it is not attracted by K, and is therefore no more relevant than some semantic feature of β. Suppose, however, that β has some other feature F_β that *can* enter into a checking relation with a sublabel of K. Then β is attracted by K, which cannot "see" the remote element α. A mismatching relation is created, and the derivation is canceled: α cannot be attracted. (Chomsky 1995:310)

Let us examine the wh-movement represented in (1) in the light of these remarks.

(1) [they wonder [$_{CP}$ [which book]$_i$ Q [$_{TP}$ the man gave t_i to whom]]]

The interrogative complementizer Q in (1) has a strong wh-feature, which is taken to be a type of D-feature. Since the phrase *the man*, which also has a D-feature, intervenes between the moved wh-phrase and its trace, one wonders whether the chain CH= ([which book]$_i$, t_i) satisfies the Minimal Link Condition (see Chomsky 1995:311, 356). It does, according to Chomsky's reasoning cited above. The D-feature of *the man* is not the appropriate type of feature to check the strong feature of Q; hence, it could not enter into a checking relation with the strong feature of Q and does not yield a Minimal Link Condition violation. If Q had another feature that could be checked by *the man*, then

[2] A derivation is said to converge if it yields a legitimate pair (π, λ), where π ia a PF object and λ is an LF object; otherwise, it is said to crash (see Chomsky 1993:5). A derivation is said to be canceled if an illegitimate operation is performed during the computaion, if the pair (π, λ) is not formed, or if the numeration is not exhausted (see Chomsky 1995:225-226). In the case under discussion, movement yielding feature mismatch would count as an illicit operation.

this phrase would raise and its D-feature and the wh-feature of Q would mismatch, canceling the derivation. Since this is not the case, (1) converges and is assigned a sound interpretation by the Conceptual-Intentional interface.[3]

Now consider the derivation of the sentence (2) in English, where a nominative object moves to Spec of T crossing an accusative subject in the Spec of νP, as represented in (3):

(2) *He her saw.
'She saw him.'

(3) $[_{TP}\ he_i\ [_{\nu P}\ her\ saw\ t_i\ ]\ ]$

As far as Case-features are concerned, movement of *he* over *her* in (3) does not violate the Minimal Link Condition according to the discussion above, because *her* could not have its accusative Case-feature checked in Spec of TP. However, overt movement to the Spec of TP in English is triggered by the EPP (the strong D-feature of T). Since *her* also has a D-feature and is closer to *he* than the trace of *he*, the chain $CH = (he_i, t_i)$ violates the Minimal Link Condition; hence, the unacceptability of (2).

If, on the other hand, an accusative subject moves to Spec of TP to check the strong feature of T, as illustrated in (5), the Case-features of the subject and T will mismatch and the derivation will be canceled; hence the unacceptability of (4).

(4) *Her saw he.
'She saw him.'

(5) $[_{TP}\ her_i\ [_{\nu P}\ t_i\ saw\ he\ ]\ ]$

3. CONCEPTUAL AND EMPIRICAL PROBLEMS WITH CHOMSKY'S APPROACH

Consider the existential construction involving a pronoun illustrated in (6).

(6) There's Mary, there's Sue, and *there's him/*he*.

Putting aside the special conditions that allow a name or a pronoun to appear in an existential construction, what is relevant for our purposes is that a nominative pronoun

[3] Under this approach, the sentences resulting from the structures in (i) and (ii) are unacceptable for different reasons. (i) violates the Minimal Link Condition, because the wh-phrase *which book* has the appropriate feature to check the strong feature of Q' and is closer to *to whom* than t_j is; hence, the derivation is canceled. (ii), on the other hand, converges, but presumably receives a deviant interpretation at the Conceptual-Intentional interface (see Chomsky 1995:sec. 4.5.4).

(i) $[_{CP}\ [to\ whom]_j\ did+Q'\ [_{TP}\ they\ remember\ [_{CP}\ [\ which\ book\ ]_i\ Q\ [_{TP}\ John\ gave\ t_i\ \ t_j\ ]\ ]\ ]\ ]$

(ii) $[_{CP}\ [\ which\ book\ ]_i\ did+Q'\ [_{TP}\ they\ remember\ [_{CP}\ t_i\ Q\ [_{TP}\ John\ gave\ t_i\ to\ whom\ ]\ ]\ ]\ ]$

is barred in constructions such as (6). This is rather unexpected from a feature mismatch approach. After all, it is assumed that the Case-feature of the associate of the expletive in constructions such as (6) is checked against the *nominative* Case feature of the tense head T, after the formal features of the associate attach to T in the covert component (see Chomsky 1995:sec. 4.5.3).

Suppose on the other hand that nominal elements in English (including pronouns) are underspecified with respect to the type of Case they bear, and that a default morphological rule realizes pronouns with unchecked Case-features as accusative. Thus, if a pronoun overtly checks its Case-feature against a finite T head or a possessive determiner, it will be realized as nominative or genitive, respectively; otherwise, the pronoun will be realized as accusative by default. Assuming this to be so, the pronoun in (6) must be phonetically realized as accusative and not nominative, because it has not been checked overtly; in the covert component, the set of formal features of the pronoun adjoins to T, which then allows the unchecked (underspecified) Case feature of the pronoun to be successfully checked against the nominative Case-feature of T.

Evidence for this default realization of accusative Case in English is provided by answers to questions involving a wh-phrase in subject position, as exemplified in (7), by coordinate NPs in subject position as in (8)[4], and by topicalization constructions such as (9):[5]

(7) A: – Who left?
B: – Him/*he.

(8) Me and him went to the movies.

(9) Him/*he, I like his poems.

If English nominals are underspecified for the type of Case they bear, as the evidence above indicates, the unacceptability of (4), repeated below in (10a), cannot be due to feature mismatch. According to the morphological realization rules discussed above, the pronouns in (10b) should be realized as ²*she*³ and ²*him*³. Thus, the unacceptability of (10a) is due to the illicit instances of morphological realization.

[4] Assuming that coordination involves a hierarchical structure along the lines of (i) (see Munn 1987, for instance), it is the &P in (8) that is in the checking domain of the T head, not the pronouns themselves.

(i) [$_{\&P}$ me [$_{\&}$ and [him]]]

[5] Thanks to Ellen Thompson (p.c.) and Juan Uriagereka (p.c.), who brought the relevance of constructions such as (8) and (9) to my attention.

(10) a.* Her saw he.
‘She saw him.’
b. [$_{TP}$ her$_i$ [$_{vP}$ t$_i$ saw he]]

In turn, the unacceptability of (2), repeated below in (11a), is due to violations of the Minimal Link Condition induced not only by the D-feature of *her*, but also by its Case-feature; if nominal elements in English are underspecified with respect to Case, the Case-feature of the pronoun in Spec of νP can enter into a checking relation with T, preventing movement of the object pronoun.

(11) a. *He her saw.
‘She saw him.’
b. [$_{TP}$ he$_i$ [$_{vP}$ her saw t$_i$]]

If this approach is on the right track, the English data discussed above cannot be used as empirical evidence for the proposal that feature mismatch cancels the derivation. Notice futhermore that Chomsky’s (1995:310) account of (11) in terms of a Minimal Link Condition induced by the D-feature of ²*her*³ makes the unlikely prediction that in languages where the EPP does not hold and both the subject and the object remain *in situ*, the sentences corresponding to the English glosses in (12a) and (12c) below should be synonymous. Recall that the only reason why the derivation in (11b) is not possible under Chomsky’s analysis is that the strong D-feature of T must be checked by the accusative subject, yielding a Case mismatch. If T in (12b) and (12d) has no feature other than Case to check, movement of the formal features of the object across the subject in (12c) should be parallel to the wh-movement of *which book* across *the man* in (1) in not violating the Minimal Link Condition.

(12) a. he saw her
b. [$_{TP}$ T [$_{vP}$ he saw her]]
c. him saw she
d. [$_{TP}$ T [$_{vP}$ him saw she]]
‘He saw her.’

A similar problem would arise in languages in which light verbs have a strong D-feature but T heads do not. An accusative subject could move to the outer Spec of the light verb (see Chomsky 1995:sec. 4.10.1), and the formal features of an object with nominative Case could adjoin to T to establish a Case-checking relation (cf. (13d)), without yielding a violation of the Minimal Link Condition. In this scenario, the sentences corresponding to the English glosses in (13a) and (13b) should also be synonymous, which is unlikely to be true.

(13) a. her he saw
b. [$_{TP}$ T [$_{vP}$ her$_i$ [$_{v'}$ saw t$_i$]]]]
c. him saw she

d. $[_{TP}$ T $[_{vP}$ him$_i$ $[_{v'}$ t$_i$ $[_{v'}$ saw she]]]]
'He saw her.'

In order to prevent the situation in which the pairs in (12) and (13) receive the same interpretation, the Case-feature of the subject must block adjunction of the formal features of the object to T for Case-checking, even if it does not establish a successful checking relation with the Case-feature of T. In other words, the specific value of a Case-feature is irrelevant for the computation of the Minimal Link Condition.[6]

If it turns out to be true that a Case-feature prevents a movement operation for Case-checking reasons regardless of its value, the assumption that feature mismatch cancels the derivation should be maintained only on the conceptual grounds that it reduces computational complexity (see Chomsky 1995:309). However, this assumption has the undesirable consequence of requiring the stipulation of [-interpretable] features with no PF reflex in some instances, only to prevent feature mismatch. Consider the derivation of transitive sentences in languages with overt object movement and subject agreement, for instance. Under the assumption that movement proceeds cyclically, after the object moves to the outer Spec of νP to check the strong D-feature of the light verb, we have the structure in (14):

(14) $[_{vP}$ OB $[_{v'}$ SU $[_{v'}$ V+ν $[_{VP}$ t$_V$ t$_{OB}$]]]]

In addition to allowing the strong D-feature of ν to be checked, the configuration in (14) also permits two other checking relations: (i) between the Case-features of OB and the verbal complex [V+ν]; and (ii) between the ϕ-features of OB and [V+ν]. Although this is a welcome result with respect to Case-feature checking, problems arise regarding ϕ-feature checking. If the checking relation between the ϕ-features of the object and the ϕ-features of the verbal complex were successful, the verb should agree with the object, yielding an incorrect result for the languages under consideration. If the ϕ-features of the verbal complex are "Agrs-features" (i.e., agreement features associated with nominative or ergative Case), the derivation should be canceled because these features and the "Agro-features" of the object (i.e., agreement features associated with accusative or absolutive Case) mismatch; if that were the case, however, no language should have overt object movement.[7]

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[6] It may be the case, however, that the problems related to (12) and (13) do not actually arise if T heads (for some reason) universally have a strong feature (see Jonas and Bobaljik 1993:74 and Chomsky 1995:chap 4, fn. 80).

[7] Similar considerations may apply to covert object movement for Case reasons in a language without overt verb movement to T. If in languages like English, the formal features of the object adjoin to the complex verbal head formed by adjunction of the main to the light verb before the formal features of this complex head adjoin to T, the ϕ-features of the object and the ϕ-features of the verbal complex should either establish a successful checking relation, in which case English should exhibit object agreement, or mismatch, in which case English sentences with transitive verbs could not be derived. This particular problem does not arise in Chomsky's (1995:sec. 4.10.2) system because he assumes that in English-type languages the formal features of the verbal complex always raise to T before the formal features of the object also adjoin to T; hence the ϕ-features of the verbal complex are erased after being checked against the

This problem would not arise if we assumed the system in Chomsky (1993), according to which transitive verbs always have a set of Agro-features, that is, a set of ϕ-features associated with accusative Case. If so, the ϕ-features of the DP in the Spec of vP in (14) would enter into a checking relation with the Agro-features of the verbal complex, allowing the derivation to converge. This solution is dubious, however. To postulate [-interpretable] ϕ-features which have no reflex at PF and are motivated only by theory internal reasons is comparable to the postulation of an Agr projection.

Suppose by contrast that we drop the assumption that feature mismatch cancels the derivation. The derivation of transitive constructions in languages with subject agreement and overt object shift or in languages with subject agreement and verbs and objects *in situ* can be accounted for, if we take the specific choice of a set of ϕ-features to be somehow associated with a particular type of Case realization (see Raposo and Uriagereka 1996). If so, the ϕ-features of an accusative object will not be the relevant type of features that can enter into a checking relation with the "Agrs-features" of the verbal complex; thus, neither German nor English will exhibit object agreement, and no postulation of "Agro-features" for transitive verbs in these languages will be required.

4. CONCLUSION

The conceptual motivation for Chomsky's (1995:310) proposal that feature mismatch cancels the derivation is that it would reduce the complexity of the computations required to determine whether or not a derivation converges. However, this proposal has the undesirable consequence that the theory must be enriched with [-interpretable] features which have no role other than preventing feature mismatch. Moreover, it was shown that the data involving pronouns discussed in section 3 can be better analyzed if we assume that the value of a Case-feature is irrelevant for the Minimal Link Condition. We are thus led to the tentative conclusion that feature mismatch *per se* does not cancel the derivation.

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subject, and no issue of feature mismatch arises. For some problems regarding this assumption, see Nunes (1995:sec. III.4.1.2.3, 1997).

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