

# Feature primitives and the syntax of specificity

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A large variety of morphosyntactic processes appears to correlate with a 'specific/non-existential interpretation of the constituents involved, providing evidence for the hypothesis that 'specificity' is syntactically encoded. This paper discusses some possible implementations of this general insight. It argues against the view that syntactic operations such as movement are triggered by the need to satisfy interface conditions with the interpretive system (as is the case with Diesing's Mapping Hypothesis), and against the view that the relation between syntax and specificity-related processes is only indirect, representing the side-effect of defocalisation processes (as is the case with Zubizarreta's and Reinhart's approaches to object-scrambling). The view endorsed here is that the feature inventory of natural language has to be considerably extended to include 'interpretable' features of various sorts (in the spirit of Stowell & Beghelli's decomposition of Quantifier Raising into a set of movement operations involving a specific set of quantificational features). The analysis will reveal that the interpretable feature involved in the specificity effects has to be identified with 'familiarity' (a notion roughly corresponding to Pesetsky's D-linking and Prince's givenness/saliency) and must be carefully distinguished from the presupposition of existence/cardinality which is usually associated to the semantics of quantificational constituents. An important consequence of the proposed analysis is that the properties of operator movement are no longer assumed to depend on the traditional A/A' distinction, but on the nature of the interpretable features involved within the domain of A'-movement.

## 1. Introduction

This paper addresses the conceptual issues posed by types of movement which seem to have a semantic trigger. The empirical domain that will be investigated covers the so-called 'specificity effects': syntactic processes which appear to correlate with a 'specific' interpretation of the constituents involved. In much recent work, it has been observed that the specific interpretation of certain syntactic constituents is encoded in syntax through various morphosyntactic means. Enç (1991), for example, notes that in Turkish the presence of accusative case morphology correlates with a specific interpretation of an indefinite direct object. Diesing (1992) observes that scrambling of indefinites in German and Dutch yields a specific interpretation of

the noun phrase, capitalizing on the original suggestions found in Reuland (1988) and de Hoop (1992)).

If it is assumed that specificity effects are somehow encoded in syntax, the question of course arises how this idea can be theoretically implemented. At first sight, the severe epistemological constraints of the Minimalist Program (Chomsky 1995) might be interpreted as preventing us from charging the computational system with illegitimate semantic features, which might be thought of as surreptitiously discharging the burden of explanation on the computational system (i.e. syntax), instead of looking at the interface conditions or at the independent properties of the systems of interpretation and use which are intuitively relevant for the derivation of the interpretive facts under examination. If movement reduces to morphological checking of features, specificity effects which correlate with displacement phenomena raise such questions as: which kind of interpretable features are legitimate and must be checked? How can checking of interpretable features be characterized with respect to the by now more familiar operation of feature erasure which characterizes checking of non-interpretable features (cf. Chomsky 1995)?

In this paper, we will take the position that semantically-driven movement is in fact the consequence of the realization of interpretable features in 'functional' positions in which they are not 'interpretable', and from which they have consequently to be erased via checking. In order for this result to be achieved, some distinct lexical item present in the relevant numeration will have to be endowed with the same set of interpretable features, creating the conditions required for checking (let's say, in terms of 'Attract  $\alpha'$  or some equivalent procedure). In this way, checking can be characterized as a uniform operation, leading to the deletion/erasure of non-interpretable features before they cause the syntactic representation to crash at one of the two interfaces (in the case of 'alleged' semantically-driven movement the non-interpretable features are those realized in the functional 'target'). As for the 'rationale' for this strategy, we want to suggest that 'redundant' realization of interpretable features on functional categories/positions in which these features are non-interpretable corresponds to a specific class of computational operations which is resorted to in order to compensate the high degree of morphological ambiguity that is often found in natural language. Morphological inspection is often not able to reveal whether a certain determiner is endowed with the 'formal' feature encoding 'familiarity' which will be investigated in the course of this paper. However, the fact that the DP headed by this determiner undergoes overt move-

ment to a target position in which the relevant interpretable features are often overtly realized can provide an alternative way to convey the relevant semantic instruction (i.e. movement would have not taken place if the DP had not been 'covertly' endowed with the features required for checking). Some important results immediately follow. First of all, the question why certain interpretive variants or semantic dependencies should be morphologically encoded (i.e. be relevant for the operations of the computational system) admits a straightforward answer if we assume, as we want to do, that this tendency to pre-encoding might be one of the most significant and 'primitive' facts about the design of language, as confirmed by recent suggestions concerning the principled derivation of the Binding conditions, primarily focused on the pronoun/anaphor distinction (see Reuland 1995). Second, the idea that syntactic movement be directly triggered by the interpretive requirement that 'compositional' structures be produced at the interface, proper to many variants of the so-called Mapping Hypothesis (cf. Diesing 1992, Chierchia 1995), simply seems to circumvent what appears to be the real empirical issue: which kind of interpretable features are realized in which functional categories/positions under which general conditions. Checking of formal features, and not the requirement for a certain constituent to vacate a certain syntactic domain, is the real (and uniform) trigger for movement, as desirable under minimalist guidelines. Last but not least, the observation that there doesn't seem to be any independent morphological evidence for the kind of 'quantificational' features which are often assumed to represent the trigger for semantically-driven movement ceases to represent a serious difficulty (pace Hornstein 1995). Under the general hypothesis sketched above, it is just morphological ambiguity/deficiency that forces the realization of certain interpretable features in designated functional categories, triggering (overt) movement and perhaps providing (part of) the motivation for the pervasive role of functional categories within the language design. It seems to us that this view might even corroborate the idea of a universal hierarchy of functional projections (the target of checking): that a feature be in the scope of other features does not stem from logical necessity; rather, it corresponds to a property of language which is generally encoded in the computational system (see Cinque 1995 and Stowell & Beghelli 1994 for different implementations of this idea). We will push this view to its natural consequences: which kinds of semantic instructions are encoded in the feature system is just an empirical matter. Admitting the notion of 'familiarity' in this domain does not automatically entail that we are

transferring illegitimate 'pragmatic' features from the system of use into the computational system, provided familiarity is rigorously defined as a specific semantic instruction for the interpretive system and there is serious empirical evidence in favor of the assumption that this feature is syntactically encoded. In fact, we claim that familiarity can be naturally defined as one of the 'interpretable' features encoded in the computational system and that the evidence for encoding is overwhelming.<sup>1</sup>

This paper is organized as follows. In sections 2 and 3 we will try to arrive at a precise definition of the 'semantic' instructions which corresponds to the so-called 'specific' interpretation of certain constituents, briefly reviewing and discussing the evidence that specificity is morphosyntactically encoded. On the basis of cross-linguistic data, we will come to the conclusion that the following three semantic instructions are arguably encoded in the computational system: (i) specificity as an inclusion relation, (ii) specificity as rigid designation, and (iii) familiarity as an identity relation. Section 3 focuses on the analysis of scrambling in Germanic SOV languages such as Dutch and on the relevance of the notion of 'familiarity', now considered as a formal feature expressing a well-defined semantic instruction at the LF-interface, in triggering displacement. We will show that analyses which consider the specific interpretation of scrambled constituents to be an indirect effect of a defocalisation process (as in Reinhart 1995) rather than a direct effect of a formal feature encoding familiarity face serious empirical and conceptual problems.

## 2. Specificity and Movement

If the view is adopted that the notion of specificity is encoded in the computational system, the question should be addressed as to how this semantic effect is encoded and how it relates to displacement phenomena like scrambling. In Diesing (1992), scrambling of noun phrases out of VP is forced by the principles of semantic composition, assuming a bottom-up algorithm for combining semantic types. She basically interprets scrambling as a process of type mismatch resolution. In informal terms, specific constituents are of the wrong semantic type (i.e. they are quantificational) and cannot therefore be combined with the verb. As a consequence of this type mismatch trouble, specific constituents have to leave the VP. Non-specific constituents, basically corresponding to indefinite arguments, are semantically translated into variables, according to the

standard approach in D(iscourse)R(epresentation)T(theory); they are individual-referring constituents, may combine with the verb and need not be scoped out of the VP. This is basically the conceptual content of Diesing's so-called Mapping Hypothesis,<sup>2</sup> which clearly takes syntax to be driven by the principles of semantic compositionality. Reformulated in minimalist terms, this clearly entails that movement is not exclusively triggered by feature-checking operations: for instance, a specific constituent must undergo QR in order for the correct semantic representation to be produced at the interface, an intuitively anti-minimalist standpoint. At the very least, the Minimalist Program would force us to replace the semantic approach advocated by Diesing with a feature-driven approach, according to which the semantic trigger (i.e. the realization of suitable 'compositional' configurations at the interface) is replaced by interpretive features of the appropriate kind, to be checked in designated functional positions (cf. Hornstein (1995) for an in-depth discussion of the issues involved).<sup>3</sup>

Suppose we replace a movement approach to scrambling based on type mismatch resolution with one based on semantic features. Is this a real choice between two different theories or are we surreptitiously changing syntax with 'redundant' denotational devices which simply duplicate the 'type-information' relevant for the mapping of syntactic representations into interpretable structures? We think the choice hinges on a real empirical issue, at least for two quite clear reasons. First, pronouns are individual-referring expressions, and it cannot certainly be claimed that they have to vacate the VP because they belong to the wrong semantic type: the extra denotational device which is needed in order to ensure that the pronoun leave the VP, say, an extra index encoding familiarity, is sufficient to assign the theory more expressive power with respect to a theory that simply encodes the information concerning the semantic types (this whole issue is clearly reminiscent of the role of Novelty/Familiarity conditions in D(iscourse)R(epresentation)T(theory)). Second, Diesing's proposal is based on the insight that the constituents interpreted 'specifically' are those that give rise to operator-variable structures involving restricted quantification (abstracting away from individual-level expressions like personal pronouns, for which special familiarity indexes are introduced to encode the 'specific' reading): specificity corresponds in fact to the 'presuppositional' interpretation of the constituents which undergo a QR-like operation, leading to tripartite structures of the usual kind (where the restricted clause is assumed to correspond to the presupposed set). However, we want to claim

that it is not the presuppositional interpretation of a quantified constituent (interpreted as the property according to which the range of entities which is quantified over corresponds to the set of entities whose existence is presupposed) that is encoded in syntax. As a consequence, the idea that the feature-system (conveniently enriched with interpretable features such as that encoding 'specificity') simply encodes information about the semantic types is no longer feasible.

The question then is: what kind of (semantic) information is encoded in syntax by means of interpretable features? More specifically, which kinds of semantic 'instructions' fall under the general heading of 'specificity'? In the next section, we will try to answer this question by considering various crosslinguistic phenomena which have been argued to be related to specificity.

### 3. On the encoding of specificity: presuppositionality vs. familiarity

#### 3.1. Object agreement and complex inversion in French

The first relevant data are the facts in (1) from French involving object agreement in *wh*-structures. As Obenauer (1992) has convincingly shown, object agreement in *wh*-configurations generally correlates with a specific interpretation of the *wh*-constituent. In (1), for example, the sentence with object agreement (i.e. *faites*) receives an interpretation according to which what we are talking about is a familiar set of errors, say, the errors contained in the paper that we are reading. Absence of object agreement entails a reading in which the *wh*-phrase quantifies over a set of errors which are not salient in the context of discourse. The obligatoriness of the familiar interpretation of the range of quantification in object agreement sentences is clearly shown by the examples in (2). In these examples, the *wh*-phrase is modified by *jusqu'à* and *en moins*, enforcing a non-familiar interpretation of the range of quantification. As expected, object agreement with such a *wh*-phrase yields an ungrammatical sentence.

(1) Dis-moi combien de fautes tu as fait/faites  
Tell-me how-many of errors you have made

(2) a. Jusqu'à combien de fautes ont-ils fait (\*es), vos élèves?  
Up to how-many of errors have they made, your pupils  
b. Combien de fautes en moins a-t-il fait (\*es) cette fois?  
How-many of errors less have they made this time

The impossibility of having object agreement with *wh*-phrases which quantify over a non-familiar set of objects is further corroborated by the *wh*-exclamative structures in (3). Clearly, the exclamatory phrases *quelle surprise* and *quelle erreur* do not quantify over a familiar set of surprises/errors. Exclamation typically applies to entities which are new (i.e. unfamiliar) in the context of discourse. Presence of object agreement is therefore impossible in these *wh*-exclamative contexts.

(3) a. Quelle surprise elle m'a fait (\*-e)!  
What a surprise she me has made  
b. Quelle erreur il a commis (\*-e)!  
What a mistake he has made

In short, the phenomenon of object agreement in French correlates with a well-known interpretive effect, intuitively involving quantification over a familiar set of objects.

Interestingly, the obligatory familiar reading of a noun phrase is not restricted to object agreement contexts. As exemplified in (4), *wh*-phrases in complex inversion structures exhibit the same interpretive effect. That is, the *wh*-phrase must quantify over a familiar set of objects. The interrogative sentence (4a), for example, is appropriate in a situation in which one is watching a scene of a movie on television. The *wh*-element quantifies over an entity (woman) which is physically salient (hence familiar) in the discourse context. Such a familiar reading is not permitted with the bare *wh*-phrase *qui* in (4b) and the modified *wh*-phrase in (4c). As predicted, these *wh*-phrases are incompatible with complex inversion.

(4) a. Quelle femme se cache-t-elle sous la perruque blonde?  
Which woman REFL hides herself under the wig blond  
b. \*Qui joue-t-il aux échecs?  
'Who plays chess?  
c. Jusqu'à combien de gardes du corps suivaient (\*-ils) les vedettes?  
Up to how-many body-guards followed (they) the stars

Summarizing, the phenomena of object agreement and complex inversion illustrate the morphosyntactic encoding of the familiar interpretation of the variable which is quantified in: the NP-complement of the interrogative determiner refers to a set of entities which has already been introduced or is physically salient in the context of discourse.

3.2. Subject of ergatives

A further illustration of the syntactic encoding of specificity comes from the interpretation of subject noun phrases in Italian, in structures where they are headed by a weak determiner (cf. Delfitto and Pinto 1992). It turns out that preverbal subjects of ergative verbs headed by a weak determiner, for example, are only possible with a 'specific' reading. So, the subject *tre ospiti* in (5a) only has a partitive reading in which it quantifies over a set of guests which are familiar in the context of discourse. This restricted reading of the preverbal subject does not seem to be a property of the [Spec,IP] position as such. This becomes clear when we consider the interpretation of preverbal subjects of unergative (cf. (5b)) or transitive verbs (cf. (5c)). It turns out that these are not restricted to a presuppositional reading; they also allow an existential (i.e. non-specific) reading of the subject noun phrase.

- (5) a. *Tre ospiti sono arrivati*  
Three guests have arrived  
'Three of the guests have arrived'
- b. \**Tre ospiti sono arrivati*  
      *Tre ospiti hanno pianto*  
      Three guests have cried  
      'Three of the guests have cried' or  
      'There were three guests who cried'
- c. *Tre studenti hanno occupato l'edificio*  
      Three students have occupied the building  
      'Three of the students have occupied the building' or  
      'There were three students who occupied the building'

The compulsory 'partitive' reading of preverbal subjects of unaccusative verbs is further illustrated by the impossibility of having inherently existential noun phrases (e.g. those introduced by the partitive article) in preverbal position (cf. (6a)). As expected, such positioning is permitted with subjects of unergative and transitive verbs (cf. (6b,c)).

- (6) a. ?\**Dei linguisti sono arrivati*  
      (partitive article) linguists have arrived
- b. *Degli studenti hanno pianto*  
      (partitive article) students have cried
- c. *Degli studenti hanno occupato l'edificio*  
      (partitive article) students have occupied the building

The contrast illustrated in (5) and (6) seems to be related to the fact that in Italian subject inversion is actually 'free' only with unaccusative predicates, as is exemplified in (7) (cf. Delfitto and Pinto 1992). So, in (7a), the inverted subject is easily admitted to occur in an all-focus sentence: the subject simply introduces a new referent in the discourse. This is arguably not the case with postverbal subjects of transitive and unergative verbs, which can only receive a contrastive focus reading, as is shown in (7b,c).

- (7) a. *Mi chiedo se sia arrivato Gianni*  
      I wonder whether has-SUBJ arrived Gianni
  - b. %*Mi chiedo se abbia pianto Gianni* (fine with contrastive reading)
  - c. I wonder whether has-SUBJ cried Gianni  
      %*Mi chiedo se abbiano occupato l'edificio tre studenti* (fine with contrastive reading)
- I wonder whether have-SUBJ occupied the building three students

In conclusion, preverbal subjects of unaccusative verbs are obligatorily assigned a partitive reading, crucially involving the familiar interpretation of the (implicit) partitive complement. In this respect, they differ from preverbal subjects of unergative and transitive verbs which may be easily assigned a non-partitive reading (cf. Delfitto & D'Hulst 1995 for an account of this contrast).

3.3. Prepositional accusatives in Rumanian

Another illustration of the morphosyntactic encoding of a specificity-related interpretive property comes from Rumanian. Consider the following paradigm with prepositional accusatives (drawn from Dobrovie-Sorin 1993):

- (8) *Mama eii va ajuta pe [una din studentele tale]i*  
'Her mother will help one of your students' (→ i.e. students?)
- (9) \**I-am examinat pe mai mult/pe mai putin de trei elevi*  
      I have-them examined pe more/less than three students
- (10) a. *L-am întâlnit pe un prieten*  
      I him met pe a friend
- b. *Toti profesorii îl vor examina pe John*  
      All the professors him will examine pe John

