

SCOPE PARALLELISM AND THE RESOLUTION OF ELLIPSIS AT THE SYNTAX/SEMANTICS INTERFACE

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In this paper several scope asymmetries in VP ellipsis constructions in English and Spanish are studied. It is argued that an approach based on Fox' (1995 a,b) Ellipsis Scope Generalization faces numerous conceptual and empirical problems. Ellipsis resolution is conceived of as a phenomenon belonging to the conceptual-intentional part of the computational system that is conditioned by the computation of the semantic features of quantifiers at LF. A semantic approach inspired in higher order unification theories of ellipsis is defended. This approach is compatible with the overall philosophy of minimalist grammar: the process of higher-order unification complies with the principle of inclusiveness (Chomsky, 1995) or projection from the lexicon because the relevant semantic equations are set up and resolved at a discourse level, but they are determined by feature-sensitive Logical Forms.

0. INTRODUCTION

A widespread characteristic of natural languages is the ability to recover the content of missing fragments of a sentence from the preceding material. Consider the following examples from English and Spanish:

- (1) (a) Jill will come to the party but Jane won't
- (b) I have bought many books recently, but I will only read some
- (c) Bill invited two candidates. I can't remember which ones
- (d) Juan se quitó las gafas y María no lo hizo
- (e) Yo compré un libro y Pedro también
- (f) He leído tus libros y los de Pedro
- (g) Sé que desayunaron algo pero no sé el qué

The above examples are instances of the class of phenomena commonly called ellipsis and illustrate several different sub-types, such as VP ellipsis, N' or N deletion and sluicing. Several syntactic analyses of these constructions have tried to identify the conditions under which ellipsis takes place and the elements that determine differences or similarities in interpretation (see Bruccart [1986] for an excellent analysis of ellipsis in Spanish). A standard syntactic solution within the Government and Binding paradigm would be to postulate the existence of empty categories in the elliptic segment and to study the licensing conditions of those empty elements. The emergence of the Minimalist Program (Chomsky, 1995, 1997, 1998 a,b) demands a stricter solution that does away with empty categories and X-bar related notions such as government or the Empty Category Principle. The elimination of empty categories follows Chomsky's (1995) "Inclusiveness Principle", which requires that only lexical elements drawn from the initial numeration be participants in grammatical derivations. This principle is obviously reminiscent of similar criteria in other frameworks, such as categorial grammar and unification-based formalisms where empty categories and representational notions such as the above mentioned ones are not present (see Gutiérrez-Rexach [1998] for a generalization of a formalized minimalist framework that takes into account some of these considerations).

In this paper, the syntactic and semantic properties of a group of scopal restrictions that arise in ellipsis constructions are studied. A potential explanation of these restrictions (Fox, 1995 a,b) is based on a global principle of Economy, which favors derivations that are less complex or consist of fewer derivational steps. Alternatively, it can be argued that the proper explanation bears heavily on semantic operations closely related to the general process of ellipsis resolution and that global Economy criteria have undesired consequences and should be dispensed with, as argued by Johnson and Lappin (1997) and Chomsky (1998b). An explanation of the latter type will be defended in this article, which is structured as follows: in the first section, the received view on the interactions between scope and VP ellipsis is described and, in section two, Fox's (1995a,b) Economy-based analysis is presented. In the next two sections, it is shown how this approach faces some empirical and theoretical problems and, finally, in the last sections an alternative analysis based on parallelism and higher-order unification is developed. This analysis successfully accounts for the data discussed in the previous sections.

1. SCOPE ASYMMETRIES AND VP ELLIPSIS

Sag (1976) and Williams (1977) noticed an interesting contrast that arises in the interaction between VP ellipsis and scope interpretation. Sentence (2a) is ambiguous: the scopal order may be either the one corresponding to the surface linear order (SOME > EVERY), or the quantifier in object position may scope over the quantifier in subject position (EVERY > SOME). In a coordinate construction in which the second VP is elided, as in (2b), there is no ambiguity. The object wide scope reading is not available. The only possible reading is the one in which there is a unique boy who admires every teacher (SOME > EVERY).

- (2) (a) Some boy admires every teacher
 (b) Some boy admires every teacher and Mary does too

Within May's (1985) theory of Logical Form, the two potential Logical Form representations (LFs) for (2a) are as in (3). The subject is generated in the specifier of IP and the object as a complement of the verb within the VP. In the subject wide scope reading, the subject quantifier raises to a position adjoined to IP and the object adjoins to VP. Therefore, by the scope principle the subject scopes over the object. In the object wide scope reading, the subject adjoins to IP and the object adjoins to a position c-commanding the subject.

- (3) (a) Subject wide scope (SOME > EVERY):
 $[_{IP} \text{some boy}_j [_{IP} t_j [_{VP} \text{every teacher}_i [_{VP} \text{admires } t_i]]]]$
 (b) Object wide scope (EVERY > SOME):
 $[_{IP} \text{every teacher}_i [_{IP} \text{some boy}_j [_{IP} t_j [_{VP} \text{admires } t_i]]]]$

Let us now consider the scope disambiguation process involved in (2b). Under May's theory of LF, VP ellipsis resolution requires copying/reconstructing the antecedent VP into the elided conjunct, so in the case where the LF corresponding to the antecedent clause is (3a), the constituent that undergoes the copying operation is $[_{VP} \text{every teacher}_i [_{VP} \text{admires } t_i]]$. The resulting LF for (2b) is well-formed, as shown in (4):

- (4) $[_{IP} \text{some boy}_j [_{IP} t_j [_{VP} \text{every teacher}_i [_{VP} \text{admires } t_i]]]]$
 and Mary does $[_{VP} \text{every teacher}_i [_{VP} \text{admire } t_i]]$ too

May (1985) accounted for the asymmetry by claiming that the object wide scope reading of the antecedent would give rise to an illegitimate

LF in which the reconstructed VP [$_{VP}$ *admires* t_i] has an unbound trace, as in (5). The LF representation is ill-formed because the quantifier *every teacher* does not c-command the trace in the second conjunct, so it cannot bind it.

- (5) [$_{IP}$ every teacher $_i$ [$_{IP}$ some boy $_j$ [$_{IP}$ t_i [$_{VP}$ admires t_i]]]
and Mary \bar{d} oes [$_{VP}$ admire t_i] too

Hirschbühler (1982) showed that this type of approach incorrectly predicts that the quantifier in the object position must always have narrow scope. In the following example, the quantifier *every building* may scope over the subject quantifier yielding the most natural interpretation of the sentence: for every building x there is a different Canadian flag y in front of it (EVERY > A).

- (6) A Canadian flag is in front of every building and an American flag is too

The May-style LF representation for (6) is predicted to be ill-formed, because the trace of *every building* would be ungoverned in the second conjunct after reconstruction. Therefore, May's explanation appears to be too restrictive. Cormack (1984) and Diesing (1992) related the contrasts in (2) to the presence of a proper noun in the second sentence. Diesing observed that the cases in which the object quantifier is forced to a narrow scope interpretation are those in which the overt NP in the correlate clause is "non-quantificational", i.e. a proper noun or a definite, as her examples in (7) illustrate.

- (7) (a) Some bassoonist played every sonata, but Otto didn't
(b) Every lawyer liked some decisions, but the doctor didn't

Diesing also argued that when the NP in the second clause is quantificational, the expected scope interactions arise. The object wide scope interpretation of the second conjunct of the sentences in (8) is not blocked.

- (8) (a) Donkeys kicked every farmer and goats did too
(b) Every donkey kicked three of the farmers and several goats did too
(c) Every frog jumped several fences and most sheep did too

Summarizing, it seems evident that an account in terms of the classical GB theory of LF does not account for the whole array of semantic facts presented. In the next section a syntactic theory is presented that is cast within a minimalist framework. This theory has strong theoretical implications with respect to the role of Economy at the syntax/semantics interface and the determination of scopal relations in a minimalist grammar. After presenting Fox's (1995a; 1995b) account, I argue that there are important conceptual and empirical inadequacies in his theory, based on the Ellipsis Scope Generalization, and I present an alternative solution which dispenses with the necessity of global Economy in the determination of scopal differences. This solution is consistent with recent analyses of ellipsis that make use of higher order unification mechanisms.

2. ELLIPSIS AND ECONOMY

Fox (1995a, 1995b) presents a theory of scope interactions in elliptic constructions that attempts to derive their properties from general assumptions of the Minimalist Program (Chomsky, 1995). More concretely, the scopal behavior of quantifiers follows from the generalization in (9):

(9) Ellipsis Scope Generalization (ESG):

The relative scope of two quantifiers, one of which is in an antecedent VP of an ellipsis construction, may differ from the surface c-command relation only if the parallel difference will have semantic effects in the elided VP.

The generalization is true with respect to the examples that we have considered so far. For instance, in sentence (2b) the scopal order of the quantifiers in the second conjunct, after reconstruction, does not yield a difference in truth conditions. The following LFs are truth-conditionally equivalent:

- (10) (a) $Mary_1$ [every teacher₂ [_{VP} t_1 admires t_2]]
 (b) every teacher₂ [$Mary_1$ [_{VP} t_1 admires t_2]]

Fox assumes, contra Cormack and Diesing, that proper names and definites are quantificational and that in the LFs above we have a genuine interaction of two quantifiers. Since the two LFs are equivalent,

the ESG predicts that the scopal order of the quantifiers in the source clause or antecedent VP is identical to their surface order, as in (3a). Similarly, in (7b) only the scopal order EVERY > SOME is allowed in the source clause, since the permutation of the scopal order of the definite in the reconstructed clause and any other quantifier yields truth-conditionally equivalent LFs. Hirschbühler's example in (6) and the variant of sentence (2b), where the quantifier *some girl* is substituted for *Mary*, are predicted by the ESG to display a scope ambiguity in the source clause by the ESG, as in fact they do. In sentence (11a), after VP-reconstruction, the quantifier *some girl* interacts with the quantifier *every teacher* yielding two possible orders, shown in (11b,c).

- (11) (a) Some boy admires every teacher and some girl does too
 (b) some girl₁ [every teacher₂ [v_{VP} t₁ admires t₂]
 (c) every teacher₂ [some girl₁ [v_{VP} t₁ admires t₂]

The two LFs above are trivially not equivalent,¹ and according to the ESG the scopal order of the quantifiers in the source clause may be different from the surface order. In other words, the object wide scope configuration is well-formed.

- (12) every teacher₂ [some boy₁ [v_{VP} t₁ admires t₂] and every teacher₂
 [some girl₁ [v_{VP} t₁ admires t₂]

Fox brings in new empirical data from English to support the validity of the ESG. For instance, the combination of two universal quantifiers yields two equivalent LFs:

- (13) (a) every girl₁ [every teacher₂ [v_{VP} t₁ admires t₂]
 (b) every teacher₂ [every girl₁ [v_{VP} t₁ admires t₂]

Consider now the following sentence:

- (14) Some boy admires every teacher and every girl does too

Again, according to the ESG, only the scopal order of the quantifiers in the source clause which is identical to their surface order, i.e. SUBJECT > OBJECT, is allowed, since the OBJECT > SUBJECT order of the quantifiers in the LF corresponding to the reconstructed clause (13b) would not have any semantic effect. It would not be semantically different from the scopal order that preserves the surface c-command order.

Fox claims that the ESG follows from two assumptions independently needed: (i) Parallelism and (ii) Economy. Economy dictates that the object can move by QR over the subject only if the movement yields an interpretation which would be unavailable otherwise. Parallelism dictates that an operation applies in one conjunct if and only if a parallel instance of the same operation applies in the other conjunct. In the cases that we have been considering, Economy prevents an application of QR raising the object quantifier over the subject quantifier and yielding the LF OBJECT > OBJECT scopal order if the resulting LF is truth-conditionally equivalent to an LF in which that operation has not applied. When a proper name or a definite quantifier subject interact with any other quantifier, an application of QR is semantically inert and violates Economy. When two universal quantifiers interact, any scope shifting operation is also semantically inert and, as a consequence, uneconomical. Parallelism prevents QR from applying in one conjunct without applying in the other conjunct. Therefore, if QR cannot apply in the reconstructed VP to avoid a violation of Economy it cannot apply in the source clause either to avoid a violation of Parallelism.

3. GLOBAL VS. LOCAL ECONOMY AND THE ORDERING ASYMMETRY PROBLEM

There are two kinds of objections that can be raised against Fox' theory: theoretical and empirical. From a theoretical point of view, Fox assumes a grammatical architecture which is quite controversial, as pointed out by Tomioka (1995). Fox defends that syntax "must see" the semantic effects of the relative scope of two quantifiers. The principle of Economy, as formulated by Fox and described in the previous section rules out as uneconomical LF representations in which a syntactic operation, such as QR, applies without having any interpretive effect. As he notes, this goes against the hypothesis of the autonomy of syntax or, for that matter, the symmetric hypothesis of the autonomy of semantics, but considers it "a very local amendment" because "syntax can see the semantic effects of quantifier scope (and perhaps other aspects of compositional semantics which form a natural class with the interpretation of scope) but nothing else" (Fox, 1995b: 289). Nevertheless, the determination of what constitutes a natural class in this case is too vague, and it seems reasonable to assume that matters of tense, mood and aspect, anaphora and pronoun resolution, etc. will be part of this class, since they interact with the interpretation of quantifiers. Therefore the most important part if not all of what we conceive as compositional

semantics will be part of the domain to which syntax has access and the amendment would be far from local. There are two potential solutions to the problem. The first one is to give up the hypothesis of the autonomy of syntax, which has been central to Generative Grammar from the earliest models to the Principles and Parameters (P&P) framework. This possibility has been raised by Marantz (1995) with respect to the Minimalist Program, because the multilevel architecture of P&P is drastically reduced to the interface levels (PF and LF) and the conditions that hold at these levels are of a phonological/semantic nature.²

Still, the problem remains of what concept of Economy is invoked, its generality and its impact in semantic interpretation. The relevant scheme of Economy would be the following: let all derivations that involve the same “Numeration” (or collection of lexical items) and terminate in LFs that have the same interpretation be compared; choose that derivation that involves the least number of steps, and whose steps are the shortest. There is no general procedure that I am aware of to decide between derivations that have few longer steps and those that have more shorter ones –so it is common in the literature on Economy to consider only cases pertaining one sort of Economy measure at a time. In the cases that are under scrutiny here, it is most often the shorter steps measure that is employed. Alternatively, it could be conceived of as employing the fewer number of operations measure. In most cases where the issue is whether an object may QR past a subject, this is probably not the right measure. When an object is a generalized quantifier and the verb selecting it is not intensional, QR will be forced in order to bring the semantic type of the object in line with that called for by the verb. As a consequence, in all of these cases, the derivations that are compared will each of them involve the object Q-Raising. What is at stake, then, is how far the object moves and, on Fox’s account, Economy will prevent it from moving farther than it has to, in order for the meaning that is aimed at to be achieved.

In sum, Fox’ view of Economy has two properties. On the one hand, it is considered a syntactic condition comparing derivations according to a “minimize steps” criterion. On the other, it seems to be a more general evaluation criterion comparing computations according to a mixture of syntactic and semantic criteria, including the semantic nature of quantifiers and equivalence of interpretation. The above properties are characteristic of a global conception of Economy (Chomsky, 1998a). Complete derivations of syntactic objects are compared according to an evaluation metric and with respect to a global property. This view of Economy has been convincingly criticized by Collins (1997), Yang (1997)

and Johnson and Lappin (1997), who defend a local conception of Economy on the basis of empirical issues –the analysis of *there*-insertion constructions– and computational concerns pertaining to the intractability of computations involving global constraints.

Even if one leaves these computational concerns aside, there are problems with the specific treatment of ellipsis proposed. If one assumes, following Chomsky (1993; 1995) a “copy theory” of movement and conceives of ellipsis resolution as a copy deletion process, a conflict with Economy arises. Consider (15a) as the expression generated before the copy deletion process that will derive (15b):

- (15) (a) Some boy admires every teacher and Mary did admire every teacher too
 (b) Some boy admires every teacher and Mary did too

If both conjuncts in (15a) have the same numeration and are convergent at LF, as predicted by Parallelism and Economy, then an application of a deletion operation in the second conjunct would be ruled out as uneconomical since it would not have any semantic effect. Even restricting ourselves to Chomsky’s notion of Economy, which is independent of semantic considerations, the application of the Deletion operation would be ruled out since it is not required by the derivation of the first conjunct. In other words, no notion of Economy based on pure syntactic considerations would justify a transition from (15a) to (15b), because (15b) requires an additional step and if Economy is conceived along the more/fewer steps dimension it would block deriving it from (15a). One could assume that VP ellipsis is a process that deletes VPs in that portion of the derivation that lies between S-structure and PF and then hypothesize that Economy does not need to consider steps in this portion of the derivation. A simpler hypothesis, which we will defend later, is to assume that both conjuncts are never compared in terms of Economy and their respective derivations do not have the same numerations –see also Nunes (1994) and Martins (1994). In section seven, it will be proposed that a sentence such as (15b) is not generated from (15a) by copy deletion and that ellipsis resolution takes place in the semantic component as an inferential mechanism.

In order to defend an alternative to the Economy hypothesis, it has to be shown that there are empirical reasons to discard the ESG as a valid generalization and, as a consequence, to not viewing the scopal restrictions in VP ellipsis constructions as a by-product of Economy in the way Fox does. First, there is the problem that the combined action

of Parallelism and Economy only holds when the potentially ambiguous clause is the source clause. Consider the following sentence:

(16) Bill praises every teacher and some girl does too

In this example, an application of QR in the source clause would be semantically uneconomical, since $BILL > EVERY\ TEACHER = EVERY\ TEACHER > BILL$. By Parallelism, the $SUBJECT > OBJECT$ order has to be the only possible one in the second conjunct. But this is not the case, because the interpretation in which *some girl* has narrow scope with respect to *every teacher* is also possible. (The interpretation with parallel $SUBJECT > OBJECT$ scopal order is the preferred one.) If the ESG follows from Parallelism and Economy, then from these two principles it also follows that the $SUBJECT > OBJECT$ scopal order is the only acceptable one in (16), contrary to fact. Therefore, there is an “ordering asymmetry” problem (Tomioka, 1995) with the ESG.³

It is also the case that some of the judgements that Fox presents are not clear cut, and may simply reflect scope preferences. As Tomioka points out with respect to an example with two universal quantifiers, such as (17), “for the interpretation of the first conjunct, the preferred reading is definitely the existential-wide-scope reading, but native speakers I consulted think that it is possible to have the universal-wide-scope reading” (1995: 342). My own fieldwork confirms Tomioka’s observation.

(17) At most ten boys admire every teacher while every girl does

4. THE ESG AND ELLIPSIS IN SPANISH

In this section, I will consider some data from Spanish showing that the ESG is not a valid generalization and needs non-trivial refinements. An additional limitation of Fox’ theory is that in most of the examples that he treats the participating operators are only QPs headed by *some* and *every*, definite descriptions, negation and intensional verbs.. But this represents only a small sample of English quantifiers and some of the specific properties of *some* and *every* may be responsible for part of the empirical facts covered by the ESG (see Beghelli [1995] for an analysis of the differential properties of existential and universal quantifiers). If we take into account a wider range of quantifiers, we can test whether the critical relation is surface c-command or a finer grained distinction

that is sensitive to the semantic properties of the quantifiers is needed. The examples considered involve bare argument ellipsis, which does not strand a finite auxiliary and is more common in Spanish as an ellipsis strategy. Nevertheless, the differences between these two types of constructions are irrelevant for the purpose of this paper.⁴ First, consider sentence (18):

- (18) Dos estudiantes del comité iban visitando a los profesores y María también
 two students of-the committee were visiting to the teachers and María too
 ‘Two students of the committee were visiting the teachers and María too’

In this sentence the preferred interpretation is one in which the students do not vary with the teachers. In other words, the same two students visited the teachers. This is the reading corresponding to the SUBJECT > OBJECT scopal order, which is identical to the surface c-command order. This interpretive fact is predicted by the ESG. Nevertheless, if we substitute the proper name in the elliptic clause by another cardinal quantifier, as in (19), the preferred interpretation is still one in which the directors do not vary with the athletes.

- (19) Dos dirigentes saludaron a los atletas y dos azafatas también
 two directors greeted to the athletes and two assistants too
 ‘Two directors greeted the athletes and two assistants too’

This may be so because of semantic/pragmatic considerations, i.e. this is the case in the standard situations in which athletes are being greeted, namely, award ceremonies after a competition, etc., but represents a problem for the ESG as formulated. It could be argued that the scope ambiguity in the first conjunct of these examples is not clearly a scope ambiguity because this type of sentences could be read as having two, non-quantificational, plural arguments. Under such an interpretation, it should be possible to understand the subject plurality, here ‘two directors’ as greeting not necessarily the same athletes. In particular, it should be possible to understand this sentence to say nothing more than that the plurality of directors stands in a greeting relation to the plurality of athletes. A reading in which the directors greet different athletes, therefore, would arise even if *dos dirigentes* does not fall within the scope of *los atletas*. Nevertheless, this type of counter-argument is radically flawed in

that it would imply an important asymmetry between singular and plural DPs. The latter would be always non quantificational, which is obviously false: they enter into numerous scope relations with other DPs, negation, intensional verbs, etc.

Notice also that the ESG predicts a sharp contrast between (19) and (20).

- (20) Dos dirigentes saludaron a los atletas y el presidente del gobierno también
 two directors greeted to the athletes and the president of-the government too
 'Two directors greeted the athletes and the president too'

The presence of the singular definite quantifier *el presidente* 'the president' in the elliptic clause of (20) makes uneconomical the OBJECT > SUBJECT scopal order in the antecedent clause because the interaction of a definite with any other quantifier will not produce differential interpretations depending on linear scope configurations. In (19), there is not such a restriction, because the scopal orders DOS 'TWO' > LOS 'THE_{pl}' and LOS 'THE_{pl}' > DOS 'TWO' are not equivalent. Nevertheless, it seems that the intended interpretation is the same in both cases: the same two directors greeted the athletes. The occurrence of a distributive adjective like *diferente* 'different' in (21) makes the OBJECT > SUBJECT reading obligatory –the athletes have to vary with the directors–, independently of the nature of the subject of the elliptic clause and its interaction with the definite plural object *los atletas* 'the athletes' (I am ignoring here the topic-linked reading of *diferente*, ie., different from a set of individuals mentioned in the previous discourse.) According to the ESG, the SUBJECT > OBJECT reading should be obligatory for the source clause in (21), because the subject of the second conjoined clause is a definite quantifier. What we get is exactly the opposite: the OBJECT > SUBJECT reading is the obligatory one. Thus, it has to be concluded that a quantifier phrase modified by *diferente* obligatorily has narrow scope with respect to any other quantifier in the clause.

- (21) Dos directivos diferentes fueron saludando a los atletas y el presidente del gobierno también two directors different went greeting to the athletes and the president of-the government too
 'Two different directors greeted the athletes and the president too'

The scopal behavior of the universal quantifiers *cada* 'each' and *todos* 'all' in VP ellipsis constructions seems to be similar to its behavior

in non-elliptical contexts. In the following examples, two sentences with the [+universal] [+distributive] quantifier *cada* and two sentences with the [+universal] [-distributive] quantifier *todos* in object position are considered.⁵

- (22) (a) Un chico aduló a todos los profesores y una chica también
 a boy praised to all the teachers and a girl too
 'A boy praised all the teachers and a girl too'
 (b) Un chico leyó todos los libros y María también
 a boy read all the books and María too
 'A boy read all the books and María too'
- (23) (a) Un chico aduló a cada profesor y una chica también
 a boy praised to each teacher and a girl too
 'A boy praised each teacher and a girl too'
 (b) Un chico leyó cada libro y María también
 a boy read each book and María too
 'A boy read each book and María too'

In the examples in (22), only the SUBJECT > OBJECT reading of the source clause is available, despite the variation in the subject of the elliptic clause, which, in (22a) and according to the ESG, should allow for the OBJECT > SUBJECT reading, since *una chica* 'a girl' is an indefinite and when interacting with a universal quantifier both readings should be possible in principle. Nevertheless, the relevant factor seems to be here the feature [- distributive], that prevents the universal quantifier from taking wide scope.

The examples in (23) show a differential scope pattern. In principle, wide scope of the object quantifier should always be available, if distributivity were the only relevant factor. Nevertheless, in this case parallelism also plays a role. Sentence (23a) is ambiguous. Either the boys vary with the teachers or there is a specific boy that praises all the teachers. What is interesting is that when there is variation in the source clause, there is also variation in the elliptic clause, and when *un chico* is non-specific in the source clause it is not specific in the elliptic clause either. This suggests that the role of parallelism has to be emphasized, since what we are getting is scope parallelism in both clauses. Again, this undermines the role of Economy in scopal interactions and the validity of the ESG.

Fox discusses examples similar to these in his paper and suggests that what licenses the wide-scope QR of the object in (23a,b) is the presence of an existentially bound event variable. He suggests that, in

the case of stage-level predicates, it is possible for an object universal quantifier to be allowed to QR past a name-like subject (in apparent violation of his Economy condition) because doing so licenses a (new) distributive reading over events. A similar process, he argues, is not available to individual-level predicates because of the absence of an event variable in clauses of this sort. The problem that this type of analysis runs into is that it would imply that in the sentences in (22) there would not be quantification over events at all. But this is not the case, since the sentence can be interpreted as ‘there is an event such that...’ In addition, the predicates in (22) and (23) do not contrast along the stage-level/individual-level dimension.

Finally, pseudo-gapping and anaphora with *hacerlo* ‘do-it’ (the correlate of *do so* anaphora) provide additional evidence of how parallelism is the principle playing a leading role. Consider the following newspaper headline:

- (24) Hoy los EEUU lloran y España ríe. Un norteamericano no ganó la medalla de oro en cada prueba de velocidad, pero Miguel Induráin sí lo hizo en ciclismo
 ‘Today the USA cry and Spain celebrates. An American athlete didn’t win the gold medal in every track competition, but Miguel Induráin did so in cycling’

The most natural interpretation of (24) is one in which the American athletes vary with the track competitions, ie. the distributive determiner *cada* forces wide scope of the quantifier it heads. Again, this goes against the ESG, since the presence of the proper name *Miguel Induráin* as the subject of the elliptic clause should precisely block this reading. In sum, the facts considered in this section and the previous one indicate that the ESG is not an accurate generalization and should be dispensed with. In addition, we have sufficient evidence for the claim that Economy, understood in a global sense, does not play a significant role in ellipsis resolution.

5. THE EXTENT OF PARALLELISM

Semantic parallelism goes beyond identity of scopal order. It includes relations such as distributivity/collectivity that have to be identical in the source and in the elliptic clause. For instance, sentence (25) may receive a collective interpretation –one single pizza is eaten by three boys– or a

distributive interpretation —each one of the three boys ate his own pizza.

- (25) Tres chicos comieron una pizza
three boys ate a pizza

Sentence (26) has only two possible readings: either one single pizza is eaten by three boys and another one by three girls –collective reading of the source clause and collective reading of the elliptic clause–, or each one of the six boys and girls ate a pizza –distributive reading of the source clause and distributive reading of the elliptic clause. There are no mixed readings in which the predicate of one of the clauses is interpreted collectively and the predicate in the other clause is interpreted distributively –collective/distributive or distributive/collective.

- (26) Tres chicos comieron una pizza y tres chicas también
three boys ate a pizza and three girls too

The preposition *entre* ‘among/between’ forces the collective reading of the subject in (27). A distributive reading is not possible.

- (27) Entre tres chicos comieron una pizza
among three boys ate a pizza
‘Three boys ate a pizza’

Parallelism forces the presence of the collective marker in both conjuncts if the collective reading is to be preserved:

- (28) *(Entre) tres chicos comieron una pizza y entre tres chicas también
*(among) three boys ate a pizza and among three girls too

Another instance of parallelism is constituted by indexical identity in pronoun resolution. In (29), the pronominal clitic *lo* refers to some discourse referent available from previous discourse and not mentioned in the sentence (Gutiérrez-Rexach, 1997). The preferred interpretation of (30) is one in which both pronouns refer to the same individual, in parallel to (29).

- (29) María lo ama
María him loves
‘María loves him’

- (30) *María lo ama y Rosa también lo ama*
 María him loves and Rosa also him loves
 ‘María loves him and Rosa loves him too’

However, there is a possibility to escape parallelism here, namely when both pronouns are deictically interpreted. Then, the pronouns may have different referents, for instance, when the utterance is accompanied by different pointing gestures. In (31), there is not such a choice. The interpretation of the pronoun in the elliptic clause is fixed by the interpretation of the pronoun in the antecedent clause.

- (31) *María lo ama y Rosa también*
 María him loves and Rosa too

In sentence (32) we have another example of parallel pronoun resolution. Let us compare the interpretation of this sentence with (33), where there is no ellipsis.

- (32) *María lo ama y cada uno de sus compañeros piensa que Rosa también*
 Mary him loves and each one of his companions thinks that Rosa too
 ‘Mary loves him and each one of his companions thinks that Rosa too’

- (33) *María lo ama y cada uno de sus compañeros piensa que Rosa también lo ama*
 Mary him loves and each one of his companions thinks that Rosa too him loves
 ‘Mary loves him and each one of his companions thinks that Rosa loves him too’

Sentence (33) has two readings: one in which the pronominal clitic *lo* in the second clause is correferential with the first occurrence of *lo*, and a second one in which *lo* is bound by the universal quantifier in the elliptic clause. In (32), the second reading is not possible. The elided pronoun cannot be interpreted as bound by the universal quantifier. Interpreting the VP anaphor just as *lo ama* ‘loves him’ with some free variable (trace) for the pronoun is obviously wrong since the pronoun may be perfectly bound by the universal quantifier, and two readings should be possible as in (33). This contrast would constitute an argument against a copy/deletion theory of ellipsis if a constraint like Parallelism were not assumed, because after copying the VP of the antecedent clause into the elliptic clause, the bound-pronoun reading would be possible.

In addition, it has to be noticed that it would be misleading to correlate ellipsis and parallelism too closely. A similar kind of scope disambiguation (or lack thereof) is observed in phonological deaccenting (or prosodic reduction) as well. For example:

- (34) (a) Some girl met every professor, and John *was introduced to every professor* too
(The first conjunct unambiguous)
- (b) Some girl met every professor, and some boy *was introduced to every professor, too*
(Both conjuncts ambiguous)

In these examples, the reduced italic signals prosodic reduction. These facts show that the parallelism which is responsible for scope (un)ambiguity in VP ellipsis is a wider mechanism that goes beyond ellipsis itself. In this respect, paying more attention to how parallelism works in the semantic component allows for a wider generalization.

In the next two sections, I will sketch a proposal that accounts for the data presented so far without using the ESG and eliminating the notion of global Economy. The main claim is that the variety of effects that can be observed are a product of the interaction of various constraints within the process of anaphora resolution. The central elements are: (i) the interpretable semantic features of the quantifiers and (ii) the effects of parallelism and focus that emerge at the conceptual-intentional component, ie. in the process of LF interpretation.

6. ELLIPSIS RESOLUTION AND PARALLELISM

In this section I will explore the role of parallelism and focus with respect to the scope phenomena considered previously. I take the process of ellipsis resolution to be essentially semantic, along the lines proposed in part by Rooth (1992), and more generally by Dalrymple (1991) and Dalrymple, Shieber and Pereira (1991). The two coordinates of an elliptic construction are different. Let us assume that the elliptic clause contains a predicate variable in its translation to a logical language, whereas the source clause does not. This amounts to the fact that the conjuncts do not have the same numeration and, therefore, cannot be compared in terms of global Economy, no matter whether we understand this evaluation metric along the fewer/more steps dimension or along the avoid/apply QR dimension. Consider, for instance, sentence (35a) and its “bare” LF representation in (35b).

- (35) (a) Juan admira a Pedro y Luis también
 Juan admires Pedro and Luis too
 (b) [Juan [Pedro [admira]]] y [Luis [P también]]

It can be immediately seen that the conjuncts in (35b) do not have the same numeration and are not comparable in terms of Economy: the first conjunct has two quantifiers and the second conjunct only one. Ellipsis resolution takes place “after” LF. This means that the representation that feeds the semantic computation is one that contains a variable (a lexical item with semantic features but with no phonological features). The variable P stands for a predicate-like element of type $\langle e,t \rangle$.⁶ The intended interpretation is obtained by a “matching” process. In computationally more formal terms, the matching process can be conceived of either as higher order unification, as done by Dalrymple, Shieber and Pereira (1991) or as generalization, as done by Prüst, Scha and van der Berg (1994).⁷ The matching process merely consists of solving a semantic equation and choosing the solution that satisfies a specific set of constraints. For instance, in sentence (35a) above, the interpretation of the elliptic sentence *Luis también* ‘Luis too’ is that some property P holds of *Luis*, as stated in the corresponding LF representation. Ellipsis resolution determines what property this is. One of the constraints that has to be satisfied is syntactic parallelism. In sentence (35a), the parallel elements are the subjects *Juan* and *Luis*. Property P represents what they have in common, in other words, P has to hold of the two parallel elements. When this property is applied to the argument *Juan*, we get the interpretation of the source clause. When it is applied to *Luis*, we get the interpretation of the target clause. In equation (36), one side corresponds to the source clause, and the other to the property that applied to the parallel element in the source clause would give as a result the source clause.

$$(36) P(\text{Juan}) = \text{Admira}(\text{Juan}, \text{Pedro})$$

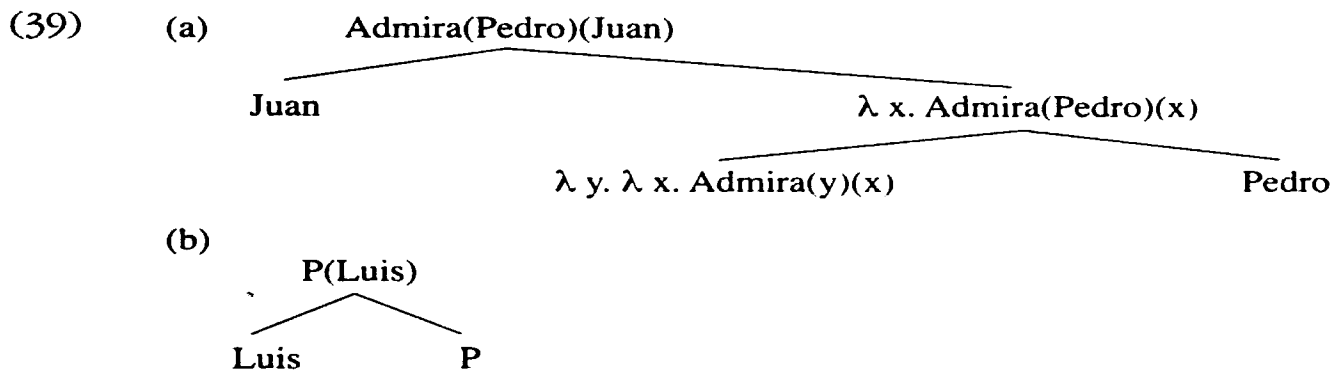
Applying unification, we arrive at the following solution:

$$(37) P = \lambda x. \text{Admira}(x, \text{Pedro})$$

The interpretation of the target clause is the solution P in (37) applied to *Luis*:

$$(38) \lambda x. \text{Admira}(x, \text{Pedro})(\text{Luis}) = \text{Admira}(\text{Luis}, \text{Pedro})$$

Ellipsis resolution is a computational process consisting of three steps (Dalrymple, Shieber and Pereira, 1991; Dalrymple, 1991): (i) determining the parallel elements in both conjuncts, (ii) solving an equation involving the parallel element in the source and the source clause, as in (36)-(37), and, finally (iii) applying the solution of the equation to the parallel element in the elliptic clause. What we are considering here are equations incorporating a higher degree of structure, since our inputs are translations of LF structures encoding scope asymmetries that cannot be directly read off from surface strings. Therefore, the structures to be matched in (35) are as follows: (39a) corresponds to the first conjunct in (35) and (39b) to the second conjunct.



As explained above, the semantic trees in (39) “match” only if the variable P is given the value in (37). Let us now consider cases involving scopal parallelism. Assuming a theory of the interpretation of scope asymmetries such as the one proposed by Hendricks (1993), one can deal with scope ambiguity by flexible typing the verb of the clause. The typings determine the attachment order of the quantifiers to the verb. The choice of the relevant type is triggered by the LF structure that serves as input to semantic interpretation, so it is sensitive to semantic features of quantifiers such as [+/-distributive] (Stowell and Beghelli, 1994), etc. as will be argued in the next section. In a flexible system, every expression is assigned a lexical translation of the lowest type. Translations of higher types are obtained by means of general rules of raising and lowering. Consider sentence (40) and the two potential LFs for the source clause in (41).

- (40) Algún estudiante vio a los profesores y alguna secretaria también
 some student saw to the professors and some secretary too
 ‘Some student saw the professors and some secretary too’

- (41) (a) [algún estudiante [los profesores [vio]]
 (b) [los profesores [algún estudiante [vio]]

According to my intuitions, sentence (40) is two ways ambiguous. The two interpretations are: (i) a specific student saw the professors and a specific secretary saw them too or (ii) all the members of a group of professors were seen by some student –not the same student saw all of the professors necessarily– and the professors were also seen by some secretary. Interpretation (i) corresponds to the scopal order (41a) of the source clause, and interpretation (ii) corresponds to the order in (41b). Interpretation (i) is preferred, but (ii) is not completely unavailable. A sentence like (42) lacks interpretation (ii), so the only LF input for semantic interpretation is similar to (41a):

- (42) Un estudiante vio a los profesores y una secretaria también
 ‘A student saw the professors and a secretary too’

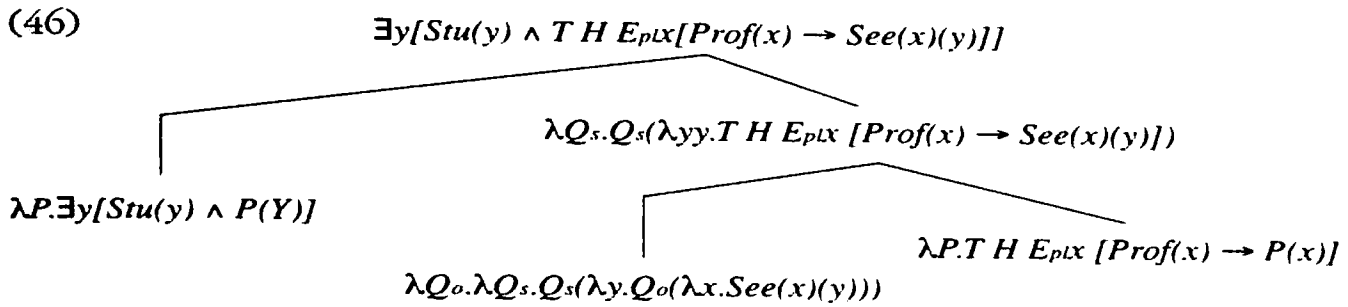
Let us see how the two interpretations of (40) are obtained. The basic translations for the constituents are the following:

- (43) Algún estudiante ‘some student’ $\Rightarrow \lambda P. \exists y$ [Student(y) \wedge P(y)]
 los profesores ‘the professors’ $\Rightarrow \lambda P. \text{THE}_{pl} x$ [Professor(x) \rightarrow P(x)]
 ver ‘see’ $\Rightarrow \lambda x. \lambda y$ [See(x)(y)]

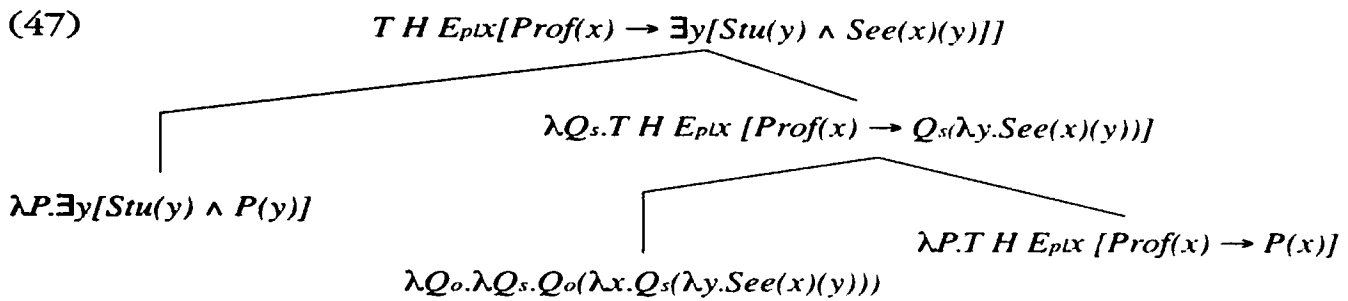
There are two ways of raising the type of the verb that yield scopally non-equivalent translations:

- (44) $\lambda Q_{obj}. \lambda Q_{subj}. Q_{subj}(\lambda y. Q_{obj}(\lambda x. \text{Ver}(x)(y)))$
 (45) $\lambda Q_{obj}. \lambda Q_{subj}. Q_{obj}(\lambda x. Q_{subj}(\lambda y. \text{Ver}(x)(y)))$

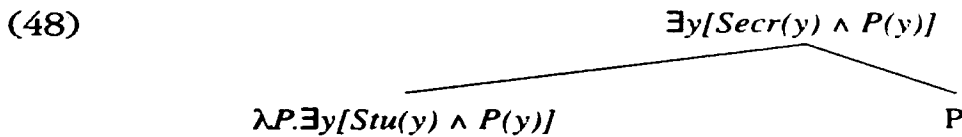
In the translations above, Q_{subj} and Q_{obj} are variables that stand for the generalized quantifier denoted by the subject and object noun phrases respectively. The LF in (41a) forces the choice of the type in (44) for the verb, corresponding to the subject wide scope reading, and (41b) forces the choice of (45), corresponding to the object wide scope reading. The semantic tree that shows the semantic computation of the subject wide scope reading is as follows:



The semantic tree of the object wide scope reading is:



Following our proposal, the semantic tree corresponding to the second conjunct of (40) contains a variable P of type $\langle\langle e,t \rangle, t \rangle, t \rangle$:⁸



The matching process first establishes that *algún estudiante* 'some student' and *alguna secretaria* 'some secretary' are the parallel elements in the semantic trees. The choice of the relevant semantic equation is a non-deterministic process, because we have two candidate structures for the source clause, namely (46) and (47). If the semantic tree of the SUBJECT > OBJECT reading is selected, the relevant equation is as in (49a) and the solution as in (49b), where Q is obviously a generalized quantifier variable.

- (49) (a) $P(\lambda P.\exists y[Student(y) \wedge P(y)]) = \exists y[Student(y) \wedge THE_{pl}x[Professor(x) \rightarrow See(x)(y)]]$
 (b) $P = \lambda Q.Q(\lambda y.THE_{pl}x[Professor(x) \rightarrow See(x)(y)])$

Substituting the value of P in the semantic tree of the elliptic clause yields the following full semantic tree, where the generalized quantifier

denoted by *alguna secretaria* ‘some secretary’ is construed as having wide scope:

$$(50) \quad \begin{array}{c} \exists y[\text{Secr}(y) \wedge \text{TH E}_{pl}x[\text{Prof}(x) \rightarrow \text{See}(x)(y)]] \\ \hline \lambda Q.Q(\lambda y.\text{TH E}_{pl}x(\text{Prof}(x) \rightarrow \text{See}(x)(y))) \\ \hline \lambda P.\exists y[\text{Secr}(y) \wedge P(y)] \end{array}$$

If the semantic tree of the OBJECT > SUBJECT reading is selected, then the relevant equation would be as in (51a) and the solution as in (51b):

$$(51) \quad \begin{array}{l} (a) \quad P(\lambda P.\exists y [\text{Student}(y) \wedge P(y)]) = \text{THE}_{pl} x [\text{Professor}(x) \rightarrow \\ \quad \rightarrow \exists y [\text{Student}(y) \wedge \text{See}(x)(y)]] \\ (b) \quad P = \lambda Q. \text{THE}_{pl} x [\text{Professor}(x) \rightarrow Q(\lambda y. \text{See}(x)(y))] \end{array}$$

When we substitute this solution for the variable in (48), we obtain the object wide scope interpretation of the elliptic clause.

$$(52) \quad \begin{array}{c} \text{TH E}_{pl}x[\text{Prof}(x) \rightarrow \exists y[\text{Secr}(y) \wedge \text{See}(x)(y)]] \\ \hline \lambda Q.\text{TH E}_{pl}x [\text{Prof}(x) \rightarrow Q(\lambda y.\text{Ver}(x)(y))] \\ \hline \lambda P.\exists y[\text{Secr}(y) \wedge P(y)] \end{array}$$

The process of ellipsis resolution precisely derives the two readings of sentence (40) that we described above. There is a fact which is missing in this derivation process for the moment. The fact that the subject wide scope reading is the preferred one. There are two options at this point. One of them is to mark the object wide scope derivation as less economical and feed the semantic ellipsis resolution process only with the subject wide scope LF. More or less, this is the essence of Fox’ solution. But, as we have argued in previous sections, this hypothesis seems to be too strong and involves the use of global Economy criteria. An alternative solution is to link the choice of one or the other reading to different focus patterns of the source clause, as proposed by Rooth (1992) and Tomioka (1995). In other words, it seems that the choice of the relevant structure is conditioned by something which is independent of purely syntactic considerations: it is semantically motivated and

syntactically encoded.⁹ When the subject of the source clause is focused, we get the subject wide scope reading. When the object is focused, we obtain the object wide scope reading. In elliptic constructions there is a strong tendency to focus the parallel elements of the source and the target clause. In sentence (40), repeated here as (53), this amounts to focus marking of both subjects:

- (53) (Algún estudiante)_[+Focus] vio a los profesores y (alguna secretaria)_[+Focus] también
 ‘Some student_[+Focus] saw the professors and some secretary_[+Focus] too’

In Rooth’s (1985) theory of focus, a sentence with a focused constituent has two semantic values. An ordinary denotational value and a focus value. The focus value is calculated by substituting the focus element by a variable. In other words, it is the set of alternatives to the ordinary semantic value that we get when we substitute other semantic values for the variable. For any constituent α , we can define the ordinary value $[[\alpha]]^o$ and the focus value $[[\alpha]]^f$. Thus, the focus value of the first conjunct of (49) is the set of propositions of the form *y vio a los profesores* ‘y saw the professors’ where *y* is a member of the set of contextually determined alternatives to *algún estudiante* ‘some student’.

- (54) $[[[\text{Algún estudiante}]_{[+Focus]} \text{ vio a los profesores}]]^f =$
 $\{ p \mid \exists Q \in \text{ALT}(\lambda P. \exists y[\text{Student}(y) \wedge P(y)]) \text{ such that } p =$
 $= Q (\lambda y. [[\text{Saw the professors}]](y)) \} =$
 $\{ p \mid \exists Q \in \text{ALT}(\lambda P. \exists y[\text{Student}(y) \wedge P(y)]) \text{ such that } p = Q (\lambda y.$
 $[[\text{the professors}]](\lambda x. \text{See}(x)(y))) \}$

All the propositions p in the focus value of the sentence satisfy the SUBJECT > OBJECT scopal order. This squares with the intuition that when the subject of (53) is focused, the inverse scope reading is absent, i.e. we are talking about a specific student. Now, if we add the condition that the result of applying the solution of the ellipsis equation to the designated parallel element in the source clause has to be a member of the focus value of the sentence, it follows that only the semantic equation in (49a) will derive the intended result. In less formal terms, focusing of the subject in (53) introduces a focus-related denotational requirement that can be satisfied only if the ellipsis resolution steps apply to the SUBJECT > OBJECT semantic tree. If the subject is not

focused, the requirement disappears and the inverse scope reading becomes available because ellipsis resolution can be applied to the semantic tree corresponding to the OBJECT > SUBJECT scopal order.

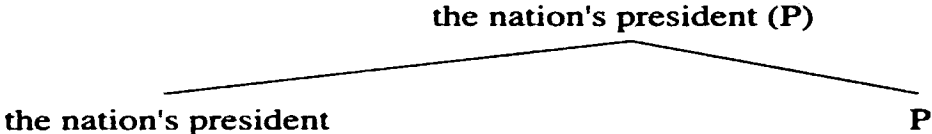
7. ELLIPSIS RESOLUTION AND DISTRIBUTIVITY

As has been observed in previous sections, the scopal requirements of a quantifier may apparently override parallelism requirements. But this is not problematic if we do not assume that Economy blocks applications of QR that are semantically inert. For instance, in (55) *cada* ‘each’ may scope over *un* ‘a’ –yielding the interpretation: a different member of the executive committee greets each athlete– whereas a parallel object wide scope configuration in the elliptic clause is banned as uneconomical by the ESG, since *el N* ‘the N’ > *cada N* ‘each N’ = *cada N* ‘each N’ > *el N* ‘the N’.

(55) Un miembro del comité ejecutivo saludó a cada atleta y el presidente del gobierno también ‘A member of the executive committee greeted each athlete and the nation’s president too’

The most salient reading of (55) is not problematic for the theory developed in this paper because the LF of the elliptic conjunct consists of one quantifier and a variable.

(56)

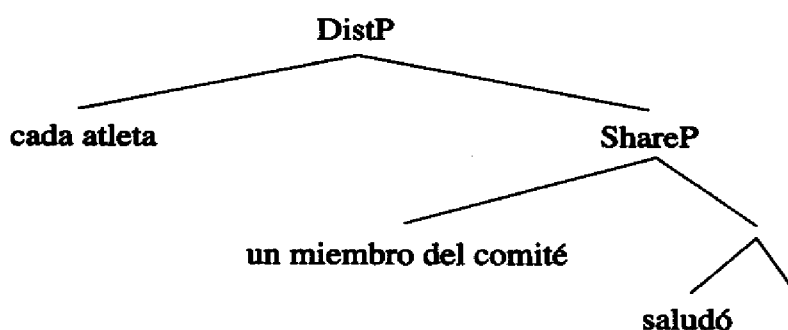


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graph TD
    A[the nation's president (P)] --- B[the nation's president]
    A --- C[P]
  
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Let us assume that *cada N* ‘each N’ is an intrinsically distributive quantifier, and that the interpretation of the [+distributive] feature obligatorily triggers wide scope of the quantifier it is associated with. This requirement can be properly formulated within Stowell and Beghelli’s (1994) and Beghelli’s (1995) theory of quantifier scope. According to these authors, the [+distributive] feature of a quantifier is checked at LF by raising of the quantifier to a designated projection DistP whereas the quantifier that acts as the distributive “share” (Gil, 1995) raises to Share P. Thus, a distributive quantifier obligatorily has wide scope over the share quantifier. In this case the LF corresponding to the first conjunct of (55) would be as follows:

(57)



Then, only one derivation of the first conjunct reaches LF and the application of the ellipsis resolution steps to the relevant semantic trees yields the intended interpretation, as spelled out in the previous section. On the other hand, modification of a noun by the adjective *diferente* 'different', illustrated in (21), triggers movement of the quantifier phrase to ShareP, explaining why in this sentence the OBJECT > SUBJECT reading was the only one available: if the quantifier phrase modified by *diferente* moves to ShareP, then it has narrow scope with respect to the other quantifier phrase in the sentence, which may move either to DistP or to RefP (Stowell and Beghelli, 1997).

The facts considered in section five, pertaining to parallelism effects involving symmetric collective/distributive readings also follow straightforwardly from the theory presented so far, assuming that collective/distributive readings require checking of a relevant feature at LF in the source clause. The parallelism effect follows in the semantic component when ellipsis resolution takes place. The same can be argued with respect to the identity of pronoun reference in examples (30-33).

In other cases, such as Hirschbühler-type sentences, the role of semantics/pragmatics is more important: the structure of the intended models (situations) filters out the relevant semantic tree. Consider the following contrast:

- (58) (a) Hay una bandera municipal en el balcón de todas las casas y una bandera de la comunidad autónoma también
 'There is a city flag in the balcony of every house and a regional flag too'
- (b) Hay una bandera municipal en el balcón de todas las casas y una bandera de España también.
 'There is a city flag in the balcony of every house and a Spanish flag too'

In sentences (58a) and (58b), the only reading possible is one in which every house has a city flag, i.e. the object quantifier obligatorily scopes over the subject, no matter what the nature of the quantifier in the remnant is. The quantifier *todos* 'all' is not obligatorily distributive, so it is not the case that only one LF feeds the semantic representation. Two LFs may be constructed and two different semantic trees corresponding to the SUBJECT > OBJECT and OBJECT > SUBJECT scopal order may be derived. The reason why the SUBJECT > OBJECT semantic tree gets eliminated is because the corresponding logical statement will be true only in models in which houses have the same (token) flag. Since this is not possible in the actual world, the only acceptable representation is the one that conforms with possible state of affairs.

8. CONCLUSIONS

In this paper, it has been shown that a successful account of scope ambiguities in VP ellipsis and bare argument ellipsis constructions can be built dispensing with the notion of (global) Economy and generalizations based on it. The proposed explanation relies heavily on mechanisms that operate at the syntax-semantics interface and in the semantic component of the grammar properly. This allows for a simplification of the role of syntactic computation in the determination of scope ambiguities.

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NOTES

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1. LF (11c) is true in a model in which every teacher is admired by a different girl, whereas (11b) is false in that model.

2. In sign-based approaches to grammar, such as European structuralism, categorial grammar and feature-unification formalisms (GPSG, HPSG) syntax has not been essentially conceived as an autonomous component. The Minimalist Program may be viewed as a convergence step between generative formalisms and sign-based ones (Morill, 1994).

3. Fox offers a partial account of the contrast between (2b) and (16) that involves a standard belief about how coordinate structures are parsed and the Principle of the Cycle.

4. Reinhart (1991) argues that bare argument ellipsis is not ellipsis at all and that it involves LF movement forming a derived conjoined phrase. Under the minimalist view of movement as a combination of copy and merger, the derivational difference between the two constructions becomes irrelevant.

5. See Gutiérrez-Rexach (1996a) for a study of the scopal behavior of universal quantifiers in Spanish interrogative sentences, and a description of the relevant features of Spanish universal quantifiers.

6. It might seem that the inclusiveness requirement (Chomsky, 1995) is being relaxed, since the presence of a variable P in the initial numeration or multiset of lexical items is being postulated. But this is unproblematic, since P is assumed to lack ϕ -features but is specified as having categorial features, among them its semantic type: $\langle e, t \rangle$. An alternative that is also consistent with the principle of inclusiveness would be to claim that the variable P is not present in the initial numeration or multiset of lexical resources, and that it is inserted in the semantics by a coercion process (Pustejovsky, 1995).

7. Generalization is the dual of the computational operation of unification. They were both proposed by Robinson (1965).

8. Notice that the type of the argument has been raised to the type of a generalized quantifier.

9. An anonymous reviewer points out that sensitivity to a focus feature in the syntax would amount to a violation of the Inclusiveness Principle, since it does not seem reasonable to assume that focus is a feature in the initial feature specification of a lexical item (Zubizarreta, 1998). Nevertheless, it would be consistent with a minimalist architecture to assume that lexical items may enter the initial numeration or multiset of resources with such a specification and that convergence would be dictated by checking criteria (whether the feature is checked in the derivational process or not). In the case of wide or constituent focus, the stage of the derivation at which the feature is checked would

determine the scope of the focus feature. Alternatively, one may assume that the Inclusiveness Principle prevents the occurrence of empty categories in the initial numerations but features are allowed to be part of that initial multiset.

REFERENCES

- Beghelli, F. (1995) *The Syntax of Quantifier Scope*. Ph.D. diss. UCLA.
- Brucart, J. M. (1986) *La Elisión sintáctica en español*, Bellaterra: Universitat Autònoma.
- Chomsky, N. (1995) *The Minimalist Program*. Cambridge, Mass.: MIT Press.
- Chomsky, N. (1998a) "Some observations on economy in generative grammar", in P. Barbosa et al. (eds.) *Is the best good enough?*. Cambridge, Mass.: MIT Press. 115-128.
- Chomsky, N. (1998b) "Minimalist inquiries: the framework", *MIT Occasional Papers in Linguistics*.
- Collins, C. (1997) *Local Economy*. Cambridge, Mass.: MIT Press.
- Dalrymple, M. (1991) "Against reconstruction in ellipsis". Ms. CSLI, Stanford University.
- Dalrymple, M., Shieber, S., Pereira, F. (1991) "Ellipsis and higher-order unification", *Linguistics and Philosophy* 14, 399-452.
- Fox, D. (1995a) "Economy, scope and semantic interpretation –evidence from VP ellipsis", *Proceedings NELS* 25, 143-158.
- Fox, D. (1995b) "Economy and scope", *Natural Language Semantics* 3, 283-341.
- Gil, D. (1995) "Universal quantifiers and distributivity". In E. Bach et al. (eds.) *Quantification in Natural Language*. Dordrecht: Kluwer Academic Publishers. 321-362.
- Gutiérrez-Rexach, J. (1996a) "The scope of universal quantifiers in Spanish interrogatives". In K. Zagana (ed.) *Grammatical Theory and Romance Languages*. Amsterdam/Philadelphia: John Benjamins. 87-98.
- Gutiérrez-Rexach, J. (1996b) "Parallel scope and ellipsis," in J. Gutiérrez-Rexach & Luis Silva-Villar (eds.) *Perspectives on Spanish Linguistics*, Vol.1, Los Angeles: Department of Linguistics, UCLA.
- Gutiérrez-Rexach, J. (1997) *Quantification, Context Dependence and Generalized Minimalist Grammar*. Ph.D. diss. UCLA
- Gutiérrez-Rexach, J. (1998) "Generalized minimalist grammars," forthcoming in C. Martín-Vide (ed.) *Issues in Mathematical Linguistics*. Amsterdam/Philadelphia: John Benjamins, 1999.
- Hendricks, H. (1993) *Studied Flexibility*. PhD. diss. ILLC, University of Amsterdam.
- Hirschbühler, P. (1982) "VP-Deletion and across the board quantifier scope". *Proceedings NELS* 12, 132-139.
- Johnson, D. & Lappin, S. (1997) "A critique of the minimalist program", *Linguistics and Philosophy* 20, 272-333.

- Marantz, A. (1995) "The minimalist program". In G. Webelhuth (ed.) *Government and Binding Theory and the Minimalist Program*. Oxford: Basil Blackwell. 349-382.
- Martins, A. M. (1994) "Enclisis, VP deletion and the nature of Sigma", *Probus* 6, 173-206.
- May, R. (1985) *Logical Form*. Cambridge, Mass.: MIT Press.
- Morrill, G. (1994) *Type Logical Grammar*. Dordrecht/Boston: Kluwer.
- Nunes, J. (1994) "Linearization of non-trivial chains at PF". *University of Maryland Working Papers in Linguistics*.
- Pustejovsky, J. (1995) *The Generative Lexicon*. Cambridge, Mass.: MIT Press.
- Prüst, H. et al. (1994) "Discourse grammar and verb phrase anaphora", *Linguistics and Philosophy* 17, 261-327.
- Reinhart, T. (1991) "Non-quantificational LF". In A. Kasher (ed.) *The Chomskyan Turn*. Oxford: Blackwell.
- Robinson, J. A. (1965) "A machine-oriented logic based on the resolution principle", *Journal of the ACM*, 12(1).
- Rooth, M. (1985) *Association with Focus*. Ph.D. diss. University of Massachusetts, Amherst.
- Rooth, M. (1992) "Ellipsis redundancy and reduction redundancy". In S. Berman, A. Hestvik (eds.) *Proceedings of the Stuttgart workshop on ellipsis*. University of Stuttgart.
- Sag, I. (1976) *Deletion and Logical Form*. Ph.D. diss. MIT.
- Stowell, T., Beghelli, F. (1994) "The direction of quantifier movement". Ms. UCLA.
- Stowell, T., Beghelli, F. (1997) "Distributivity and negation". In A. Szabolcsi (ed.) *Ways of Scope Taking*. Dordrecht: Kluwer Academic Publishers.
- Tomioka, S. (1995) "[Focus]F restricts scope: quantifier in VP ellipsis". *Proceedings SALT V*, 328-345.
- Williams, E. (1977) "Discourse and Logical Form". *Linguistic Inquiry* 8, 101-139.
- Yang, Ch. (1997) *Minimal Computations*. M.Sc. thesis. MIT.