Definite Articles As Relative Operators[*]

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1. Introduction

It is often the case that relative operators have other functions. Typically, a relative operator in a given language can also be either a question *wh*-word, as in English (cf. 1), or a definite article, as in German (cf. 2, taken from Wiltschko 1998). In Spanish, there are relative operators of both kinds, as shown in (3).

(1)   a. the man *who* Bill saw

        b. *Who* did Bill see?

(2)   Peter bewundert *den* Mann, *der* das Bier erfand.
    Peter admires   the man   the the beer invented
    Peter admires the man who invented beer.

(3)   a. *el* hombre con *el* que estuvimos hablando ayer
          the man   with the that we-were   talking   yesterday
          the man we talked to yesterday

        b. ¿Con *quién* estuvisteis hablando ayer?
           with who   you-were   talking   yesterday
          Who did you talk to yesterday?

        c. el hombre con *quien* estuvimos hablando ayer
          the man   with who   that   we-were   talking yesterday
          the man we talked to yesterday

Given that this phenomenon does not seem to be accidental, an analysis of these relative operators in which they are seen as homophonous with definite articles or question *wh*-words cannot be considered satisfactory. Rather, the strategy should be to assume that relative operators in these languages are what they appear to be (definite articles or *wh*-words) and find an explanation for the

fact that they, as opposed to any other type of word, can function as relative operators.

In this paper, I concentrate on definite articles that can function as relative operators, drawing mainly on Spanish data. Following the strategy suggested in the previous paragraph, I show that if we assume that these items are indeed definite articles, we can find a very natural explanation for their use as relative operators, and for why other determiners cannot have this use. Specifically, I argue that these facts follow directly from the copy theory of movement (see Chomsky 1993 and §3.1 below), and from certain independently motivated assumptions about the interpretation of lower copies of moved items. Thus, the analysis defended in this paper not only provides an explanation for the use of definite articles as relative operators, but it also provides strong support for the copy theory of movement.

As I show in more detail in §4, the structure I assume for relative clauses is the one represented in (4). In this structure, the phrase containing the definite article undergoes $\overline{\text{A}}$-movement to [Spec,CP].

(4) $[_{\text{DP}}$ D NP $[_{\text{CP}}$ [. . . el. . .] $[_{\overline{\text{C}}}$ . . . [. . . el. . .] . . .]]]

The only (semantic) purpose that this movement has is to make the sister of the upper copy (i.e. $\overline{\text{C}}$) a predicate. Furthermore, the relative clause (i.e. CP) must be interpreted as a predicate. Thus, in order to be able to interpret the CP as a relative clause, the phrase in [Spec,CP] must be deleted (i.e. 'reconstructed'). The result is that only the lower copy is interpreted. Since, within the copy theory of movement, lower copies of moved items must be interpreted as definite descriptions (see Fox 2000b, Elbourne 2000, and §3.1 below), the result is that the movement in (4) is only possible if the moved phrase is headed by a definite article. As shown in §4, phrases headed by other determiners, such as quantifiers, are not possible in this structure, due to an independently motivated identity condition on the deletion of higher copies of moved items (see §3.2).

The paper is organized as follows. The analysis of Spanish relative clauses, which was summarized above, is developed in §4. The preceding sections, §2 and §3, discuss the Spanish data and the theoretical assumptions needed for the analysis, respectively. Finally, §5 discusses other types of relative pronouns, and offers some suggestions as to how the analysis defended in §4 can be extended to them.

2.   Spanish Relative Clauses

As examplified in (3a) above, definite articles can be used as relative operators in Spanish. However, there are other types of relative operators in Spanish, as shown in (5).

(5) a. *Definite Article*

la   mesa sobre *la* que está el   libro
the table on   the that is   the book

the table the book is on

b. *Definite Article* + Cual *'which'*

la   mesa sobre *la   cual* está el   libro
the table on   the which is   the book

the table the book is on

c. *The* Wh-*Word* Quien *'Who'*

el   hombre con *quien* estuvimos hablando ayer
the man   with who   that   we-were   talking yesterday

the man we talked to yesterday

d. *The* Wh-*Word* Donde *'Where'*

la   casa *donde* nació   Cervantes
the house where was-born Cervantes

the house were Cervantes was born

e. *The Relative Pronoun* Cuyo *'Whose'*

el   libro *cuyo* autor nació   en esa casa
the book whose author was-born in that house

the book whose author was born in that house

In this paper, I concentrate only on those which are or contain a definite article, i.e. those exemplified in (5a, b). As for the ones which are *wh*-words and can be used in questions (cf. 5c, d), no complete analysis is offered, but some suggestions are made in §5. Finally, *cuyo* 'whose' (cf. 5e) is, for the purposes of this paper, the least interesting of all Spanish relative pronouns, since it does not have any other use. In particular, even though it is derived from a Latin word (*cuius*) which could be used both as a relative pronoun and a question *wh*-word, in Spanish it does not have this latter use. Thus, I will have nothing to say about it in this paper.

It is important to note that, as in other languages, there are certain cases in which no overt relative operator is used. This occurs in subject and object relative clauses, as shown in (6, 7).

(6) a.   el   hombre que vino ayer
          the man   that came yesterday

b. *el   hombre el   que / el   cual   / quien vino ayer
         the man   the that   the which   who   came yesterday

(7) a.   el   libro que leí   ayer
          the book that I-read yesterday
          the book I read yesterday

b.　　* el　libro el　que　/ el　cual　leí　　ayer
　　　　　　the book the that　　the which I-read yesterday
　　　　　　the book I read yesterday

For the purposes of this paper, I adopt the standard assumption that this type of relative clause in fact does involve relative operators (i.e. the ones examplified in 5). In certain cases, this relative operator is deleted at PF (i.e. in 6 and 7, but not in 5).[1] The analysis of Spanish relative clauses developed in the next two sections assumes that a definite article can always be used as a relative operator in Spanish, and that in some cases, it is deleted at PF.

3.　The Syntax and Semantics of Movement

In this section, I present the basic assumptions on which the analysis of relative clauses in §4 is based. They have to do with the mechanisms by which movement chains are created in the syntax and intepreted by the semantics. The first two of these assumptions, which have been justified in the literature independently of relative clauses, are the following: (i) movement involves copying (cf. Chomsky 1993), and (ii) the lower copy of a moved item is interpreted as a bound definite description (cf. Fox 2000b, Elbourne 2000). The third assumption, which could be considered more controversial, is that scope ('total') reconstruction can be achieved by deleting the higher copy of a moved item (see Chomsky 1993, Fox 2000b).

In the following subsections, I present these assumptions, and the arguments that have been offered in the literature in favor of them. I will only discuss these topics to the extent that they are helpful for the analysis of relative clauses developed in §4. §3.1 concentrates on the copy theory of movement (i and ii above), and §3.2 is a discusssion on total reconstruction.

3.1.　The Copy Theory of Movement

Within the framework of the Minimalist Program, Chomsky (1993) proposes that movement does not leave traces. Rather, movement consists in making a copy of a constituent of the tree and merging it in some other position. The result is that, after movement, there are two copies of the same constituent in two different positions in the tree, and, typically, only one of the copies is pronounced at PF. Chomsky (1993) argues that this theory provides a natural explanation for certain cases of reconstruction. In particular, this analysis of movement can account for cases in which $\overline{\text{A}}$-movement cannot circumvent a violation of Condition C of Binding Theory, as exemplified in (8).

(8)　　　* Which claim that John$_1$ was asleep was he$_1$ willing to discuss.

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[1]See Kayne (1976), Chomsky (1977), Chomsky and Lasnik (1977), Chomsky (1980), Cinque (1981, 1982) and Pesetsky (1996). For a specific implementation of this analysis for Spanish, see Arregi (1998), which is based on suggestions made in Brucart (1992).

Under the copy theory of movement, the *wh*-phrase in (8) leaves a copy in its base position, as represented in (9). This copy contains a name c-commanded by a co-referring pronoun, which causes a Condition C violation.

(9)   [Which claim that John$_1$ was asleep]
                    was he$_1$ willing to discuss [which claim that John$_1$ was asleep]

Although the copy theory of movement accounts for certain cases of reconstruction in an elegant way, it also raises certain questions about the interpretation of lower copies of moved items. Consider, for instance, the lower copies left by *wh*-movement and QR in (10, 11) respectively.

(10)   a.   Which book did Mary read?

        b.   [Which book] did Mary read [which book]

        c.   For which x, x a book, Mary read x.

(11)   a.   Mary read every book.

        b.   [every book] Mary read [every book]

        c.   For all x, x a book, Mary read x.

Intuitively, the sentences in (10a, 11a) should have the meanings in (10c, 11c), i.e. the lower copy of the moved item in (10b, 11b) should be interpreted as a variable bound by the upper copy, not as a quantifier or *wh*-phrase. Thus, we need a mechanism to interpret these lower copies as bound variables, or as expressions containing a bound variable. In Fox (2000b), it is suggested that these lower copies are in fact interpreted as bound definite descriptions. Thus, the interpretation of (10, 11) above would be (12a, 12b), rather than (10c, 11c).

(12)   a.   For which x, x a book, Mary read *the book x*.

        b.   For all x, x a book, Mary read *the book x*.

In Elbourne (2000), a formal mechanism is given to achieve this result. This analysis of the interpretation of lower copies of movement is couched within a more general theory of definite articles and their relation to pronouns. He proposes that the definite article takes two arguments, not just one as is standardly assumed. Thus, a definite DP such as *the book* has the structure in (13).

(13)   DP
              /   \
            D   NP
                      book
         /   \
       the   1
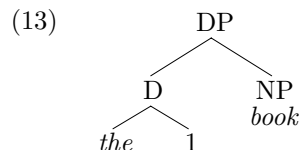
In fact, Elbourne proposes that the lexical entry for the definite article is the substructure headed by D in (13), which contains *the* and an index. *The* takes two arguments, the first of which is that index. Informally speaking, this index introduces a variable which can be bound from outside. Thus, the meaning of a definite article under this view is that shown in (14).

(14)   For any [*the i*] and assignment g,
        $[\![the\ i]\!] =$
        $\lambda f : f \in D_{\langle e,t \rangle}$ & there is exactly one x such that $x = g(i)$ & $f(x) = 1$.
        the unique x such that $x = g(i)$ & $f(x) = 1$

(14) is basically the Fregean definite article, with the addition of a variable ($g(i)$ in 14) which can be bound from outside. The sister of this D, NP in (13), is the outer argument of the definite article. The resulting DP is a definite description containing a variable, i.e. *the unique y such that y = g(1) and y is a book* in the example above.

Apart from allowing definite DPs to be bound (see Elbourne 2000 for details), this approach to definite articles allows us to formalize in a simple way the mechanism suggested in Fox (2000b) for the interpretation of lower copies of movement. Recall that what is needed is to interpret the lower copy of a moved DP as a bound definite description. Thus, Elbourne proposes that, within the lower copy of the DP, D is replaced with [*the i*] , whose meaning is (14), and where i is the same index as the one on the upper copy.[2] Following Fox (2000a), let us call this procedure *Trace Conversion*. Thus, after Trace Conversion, the sentences in (10a, 11a) above, repeated here as (15a, 16a) are interpreted as in (15c, 16c), respectively, which is the correct result.

(15)   a. Which book did Mary read?

        b. [Which book] did Mary read [which book]

        c. For which x, x a book, Mary read the unique y such that $y = x$ & y is a book.

(16)   a. Mary read every book.

        b. [every book] Mary read [every book]

        c. For all x, x a book, Mary read the unique y such that $y = x$ & y is a book.

As I show in §4 the copy theory of movement, together with the procedure presented above for the interpretation of lower copies, provides a straightforward analysis of relative clauses in Spanish. In particular, the fact that a lower copy has to be interpreted as a bound definite description goes a long way in

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[2]More precisely, i has to be bound by the lambda abstract created by the upper copy after movement.

explaining why definite articles can be used as relative operators. However, before we proceed with the analysis of relative clauses in §4, we must first consider the properties of total reconstruction in §3.2, which will also be an important ingredient in the analysis.

3.2. Total Reconstruction

In the previous subsection, we discussed certain cases of movement in which reconstruction was necessary in order to account for Condition C violations. As shown there, this type of reconstruction is explained once we assume the copy theory of movement. There are, however, other cases of reconstruction which cannot be handled in the same way. Consider the example in (17).

(17)   [An Austrian]$_1$ is likely to t_1 win the Gold medal.

In one of the possible readings of (17), the quantifier phrase *an Austrian* has scope under *likely*. One way to obtain the correct LF for this interpretation is to 'reconstruct' the whole phrase to its base position in the embedded clause. This is what in the literature has been called 'total' or 'scope' reconstruction (see May 1977, Fox 2000b, Sauerland and Elbourne 2000 and references cited there).
   Note that this case cannot be handled in the same way that the examples in the previous subsection were. In this case, it is not enough to leave the upper copy intact and apply Trace Conversion to the lower copy. That would still assign the QP scope over *likely*. The upper copy has to disappear completely, so that the QP is interpreted only in the base position. Following Fox (2000b) (and others), I assume that this can be achieved by simply deleting the higher copy at LF. Thus, (17) has the structure in (18b) at LF.

(18)   a.   [An Austrian] is likely to [an Austrian] win the Gold medal.

         b.   is likely to [an Austrian] win the Gold medal.

   However, this view of total reconstruction is too strong as it stands. In particular, some conditions under which deletion of a copy is allowed must be added. One such condition is that the two copies be identical. This might seem like a painfully obvious observation, but is nevertheless necessary, especially if one assumes operations like Trace Conversion, which alters the structure of lower copies. Consider, for instance, the sentence in (19).

(19)   John read every book.

If deletion of higher copies were not restricted in some way, we would predict that (19) could mean *John read the book*, which, of course, is not the case. Specifically, after applying QR to *every book* and applying Trace Conversion to the lower copy, deletion of the upper copy would yield this wrong interpretation. If, on the other hand, we add an identity condition, deletion in this case is not

possible, and the wrong reading is not predicted.[3] I conclude, then, that the identity condition is necessary for deletion of upper copies of movement.

As we will see in §4, total reconstruction, together with the identity condition proposed above, are an important part of the analysis of relative clauses defended here, in allowing us to explain why determiners like quantifiers cannot be relative operators.

4.   The Syntax and Semantics of Relative Clauses

As promised in the introduction, in this section I show that the independently motivated assumptions about movement that were presented in §3 are all that is needed for the correct analysis of Spanish relative clauses. Specifically, the assumption that lower copies of movement are interpreted as bound definite descriptions allows us to explain in an elegant way why definite articles can be used as relative operators. More importantly, it allows us to explain why other determiners, such as quantifiers, cannot have that use. Before I develop the analysis in §4.2, in §4.1 I present some evidence that relative clauses in Spanish have to be analyzed using the 'head-raising' analysis. Although this is not an important part of the account offered in §4.2, there is nevertheless important evidence for it in the literature, and I will therefore adopt it.

4.1.   A Head-Raising Analysis of Relative Clauses

In a head-raising analysis, the nominal head of the DP containing the relative clause is generated inside the relative clause, from where it moves to its external surface position. Several arguments have been offered in the literature in favor of this analysis (see, among others, Schachter 1973, Vergnaud 1974, Kayne 1994, Sauerland 1998, Bhatt 1999, Hackl and Nissenbaum 1999). The arguments I present below are adapted mainly from Bhatt (1999).

All the arguments have to do with cases in which the NP head needs to be interpreted inside the relative clause. All these cases receive a natural explanation in the head-internal analysis, but not in accounts in which the NP head is not generated inside the relative clause.

The first argument derives from Condition A of binding theory. As shown in (20), the reflexive pronoun *sí mismo* inside the head NP can be bound by a constituent inside the relative clause.

(20)   el   retrato de sí mismo del   que me habló Juan
        the portrait of himself   of-the that me talked Juan
        the portrait of himself Juan talked to me about

The possibility of scope reconstruction for numerals contained inside the head NP provide a further argument. Consider (21).

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[3]Fox (2000b, p. 190) reaches the same conclusion by looking at the interaction between movement and late insertion of adjuncts.

(21) Me preocupa las 25 personas con las que es probable que hablemos
      me worries   the 25 persons   with the that is probable that we-talk
      hoy.
      today
      I am worried about the 25 people it is probable we will talk to today.

A possible reading of (21) can be paraphrased as 'I am worried about the fact that it is probable that we will talk to 25 people today'. In this reading, the numeral has scope under the modal *probable*.[4]

Finally, another argument comes from possile readings that adjectives have when they are inside the head NP of a relative clause. (22) contains two relevant examples.

(22) a. la   primera persona con la   que Pedro dijo que había estado
          the first   person with the that Pedro said that had   been
          hablando Juan.
          talking   Juan
          the first person Pedro said Juan had been talking to

      b. la   única persona con la   que Pedro dijo que había estado
          the only   person with the that Pedro said that had   been
          hablando Juan.
          talking   Juan
          the only person Pedro said Juan had been talking to

In both these sentences, the adjectives *primera* 'first' and *única* 'only' can have either a 'high' reading or a 'low' reading. Under a high reading, the DP in (22a) refers to the first person mentioned by Pedro. Under a low reading, this DP refers to the first person that, according to Pedro, Juan talked to. Similarly, under the high reading, the DP in (22b) refers to the only person mentioned by Pedro; under a low reading, it refers to the only person that, according to Juan, Pedro talked to. The existence of the low reading provides evidence for the head-internal analysis. The low reading under this analysis can be generated by interpreting the head NP (including the adjective) inside the embedded sentence in the relative clause, as shown in (23) (for details, see Bhatt 1999).

(23)   the [$_{CP}$ Pedro said [$_{CP}$ Juan talked to first/only person]]

These three arguments argue for a head-raising analysis of Spanish relative clauses. Note, in particular, that all the examples in (20-22) contain relative clauses where the operator is the definite article. Therefore, I will adopt it in the analysis presented in the next section. Note that there are several possible analyses compatible with these arguments. What these arguments show is that

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[4]As pointed out by Bhatt (1999) it is not clear exactly how it is that in (21) the worry is about the fact that we will talk to 25 people, not about the people themselves. Probably related to this is the fact that, as shown in (21), the verb *preocupar* 'worry' has third person singular agreement, rather than the expected third person plural.

the head NP is generated in an internal position. Under standard assumptions, this NP, together with the relative operator, moves to [Spec,CP], as illustrated in (24).

(24) $[_{DP} \ldots [_{CP} [\ldots NP \ldots] [_{\overline{C}} \ldots [\ldots NP \ldots] \ldots]]]$

A different question is how the head NP gets to its CP-external position (if, indeed, it does). In the following section, I concentrate mainly on the CP-internal structure, and nothing hinges on this detail, so I will therefore remain agnostic (but see Kayne 1994, Sauerland 1998, and Bhatt 1999 for recent alternatives).

4.2. The Role of the Definite Article

Given that all the necessary assumptions presented in the previous sections have been made explicit, we are now in a position to offer an explanation for the fact that definite articles can be used as relative operators. Consider the relative clause in (3a), repeated here as (25), and whose structure after movement to [Spec,CP] is that shown in (26).

(25)   el   hombre con   *el*   que estuvimos hablando ayer
        the man   with the that we-were   talking   yesterday
        the man we talked to yesterday

(26)
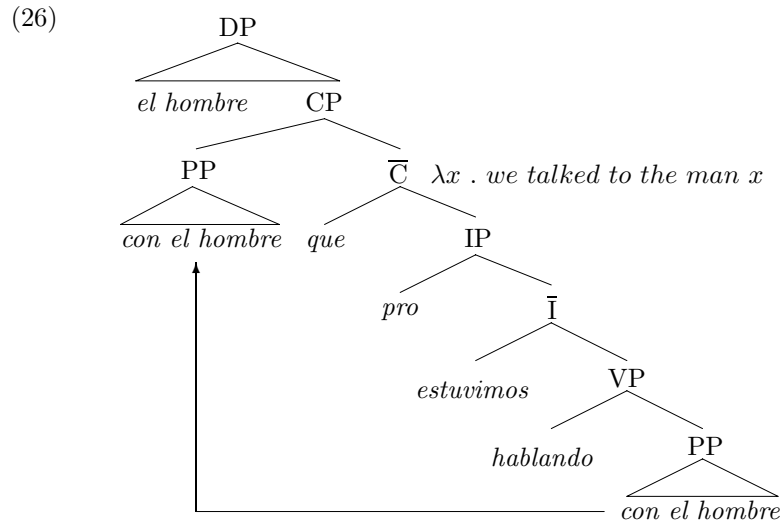
I adopt the fairly standard assumption that movement of an XP makes the sister of the higher copy a predicate (see Heim and Kratzer 1998, Nissenbaum 1998). Thus, movement of the PP to [Spec,CP] makes its sister, i.e. $\overline{C}$, a predicate,

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i.e. λx . *we talked to the man x*. Furthermore, this is precisely the interpretation that is needed for the CP. As is standardly assumed, relative clauses are interpreted as predicates. However, if the PP remains in that position at LF, that would not be the denotation of the CP. Rather, it would have the meaning of a proposition, which is not the right type for a relative clause. Therefore, the upper copy of the PP must be deleted at LF. The only (semantic) role that the movement has in relative clauses is to create the predicate, as is standardly assumed (see Heim and Kratzer 1998).

Note that this deletion essentially results in total reconstruction of the moved phrase (cf. §3.2). The only difference with the cases of total reconstruction we saw in §3.2 is that, crucially, in relative clauses the predicate created after the movement remains a predicate after deletion of the upper copy.[5],[6]

The fact that in relative clauses reconstruction is obligatory explains why definite articles, as opposed to other determiners, can be used as relative operators. Note that in (26), it is not necessary to apply Trace Conversion (cf. §3.1), since the moved phrase is already a definite description, i.e. *the man x*. If, on the other hand, some other determiner, such as quantifiers like *each* or *a*, were to be used, Trace Conversion would be necessary. Trace Conversion in this case would in effect destroy the chain created by movement, since the two copies would now be different. As shown in §3.2, total reconstruction is blocked in this context, due to the identity condition. Since, as shown above, total reconstruction is obligatory in relative clauses, we obtain the desired result that quantifiers cannot be used as relative operators.[7]

One possible objection to this analysis might go as follows. In the example above, the lower copy must be interpreted as a definite description. Since it is the internal argument of *hablar* 'talk', it must be of type e. However, consider the case in (27), in which the quantifier *each* is used as a relative operator, and it is heading a DP in subject position.[8]

(27) $[_{CP}$ [each boy] $\lambda x[_{\overline{C}}$ that [each boy] read his$_x$ copy of *El Quijote*]]

Since the lower copy is in subject position and QPs can be interpreted in this position, one might argue that Trace Conversion in this case is not necessary in this case. Thus, deletion of the upper copy would not be blocked by the identity condition on total reconstruction. Furthermore, in this specific example, the lambda abstract created by the movement is binding a variable, i.e. the one

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[5]On this difference between standard cases of total reconstruction and the one argued for here, see §4.3

[6]This means that whatever operation makes $\overline{C}$ a predicate must take place before deletion. A straightforward way to implement this is to assume, following Heim and Kratzer (1998), that, as part of the movement operation itself, an index is adjoined to $\overline{C}$ which turns it into a predicate.

[7]This raises the obvious question of how we can account for other kinds of relative operators, such as *wh*-words (cf. §1 and §2). Although, at the moment, I do not have a full answer to this question, see §5 for some suggestions.

[8]For the purposes of the argument, I am ignoring the movement of the subject from the VP-internal position.

introduced by the pronoun *his*, so we cannot appeal to some kind of prohibition on vacuous binding. Thus, the argument would go, we seem to be predicting that, at least in subject relativization, it is possible to use *each* as a relative pronoun in certain cases.

The answer to this objection is obvious: Trace Conversion is always obligatory (although vacuous in the case of definite descriptions). The trick that apparently allowed to derive the previous example as a relative clause was to not interpret the lower copy of the moved phrase as bound by the lambda abstract created by the movement, and to let a pronoun be bound by the lambda abstract. That this is indeed a trick is shown by the simple fact that movement must always result in binding of the lower copy by the upper copy. This can be seen in very simple examples of movement, as in (28).

(28)   a.   Each boy seems to have read his copy of *El Quijote*.

   b.   [Each boy] λx [seems [each boy] to have read his$_x$ copy of *EQ*] .

   c.   For all x, x a boy, it seems that for all y, y a boy, y read x's copy of *El Quijote*.

In this example, *each boy* raises from the subject position of the embedded clause to the subject position of the main clause. Trace Conversion does not apply, so the lower copy is not interpreted as bound by the upper copy. Furthermore, the lambda abstract created by the movement binds the pronoun *his* in the embedded clause. This derivation for (28a) is represented in (28b), and would yield the meaning in (28c), which is paraphrasable by *every boy seems to have read every boy's copy of El Quijote*. This is obviously the wrong result. The only way to block this derivation is to apply Trace Conversion obligatorily, so that the lower copy is interpreted as bound by the upper copy. Therefore, the possible objection mentioned above rests on obviously false assumptions.

It is important to stress that the crucial difference between the definite article and other determiners is precisely its definiteness. In relative clauses, only the lower copy is interpreted, and lower copies must be interpreted as definite descriptions. Note also that all the independently motivated assumptions presented in §3 are crucial in the argument. In particular, the copy theory of movement forces us to have the rule of Trace Conversion, which, due to the identity condition on deletion, results in the impossibility of total reconstruction if a definite article is not used. Therefore, these assumptions find additional support by the facts studied here, since they allow us to explain the facts without added stipulations.

In the following subsection, I discuss certain problems that the analysis of total reconstruction assumed here might have. Specifically, I review the arguments found in Sauerland and Elbourne (2000) in favor of accounting for total reconstruction phenomena in terms of PF-movement. As I show below, these arguments do not apply for total reconstruction in relative clauses, which in fact makes the claims made in Sauerland and Elbourne (2000) perfectly compatible with the analysis defended here.
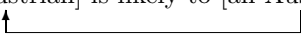
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4.3. On Total Reconstruction in Relative Clauses

As discussed in §3.2, I assume that total reconstruction can be achieved by deleting the higher copy of a moved item. Furthermore, as shown in §4.2, this assumption is crucial in the analysis of relative clauses presented there. However, Sauerland and Elbourne (2000) (henceforth S&E), drawing on total reconstruction phenomena found in different cases of A-movement, argue that total reconstruction should be viewed as the result of PF-movement.

In order to exemplify their analysis, consider example (17) from §3.2, repeated below as (29).

(29)   [An Austrian]$_1$ is likely to t_1 win the Gold medal.

As was noted in §3.2, (29) has a reading in which the raised subject has scope under *likely*. This reading is possible if the raised subject is interpreted only in its base position, as represented in (30b).

(30)   a.   [An Austrian] is likely to [an Austrian] win the Gold medal.

b.   is likely to [an Austrian] win the Gold medal.

S&E argue that (30b) is the LF structure of (29) because the movement occurs at PF and therefore does not feed semantic interpretation.

S&E give convincing arguments that this is the right approach to total reconstruction phenomena in A-movement.[9] Unfortunately, the empirical arguments presented there are not applicable to relative clauses. One of the main arguments that they give is that the PF-movement theory of total reconstruction derives Barss' Generalization (see Barss 1986), according to which total reconstruction of a QP to a position X is blocked when the QP does not c-command X in the overt form. In the structures relevant to this generalization, a phrase containing the lower copy of the raised QP moves to a position above the QP. In these cases, total reconstruction is not possible. Obviously, Barss' generalization is not testable in relative clauses, since it would involve extraction of the consituent containing the lower copy of the relativized XP outside the relative clause island.[10]

S&E also give a conceptual argument against the LF-deletion analysis of total reconstruction. They observe that the assumption that movement makes the sister of the higher copy a predicate poses a problem for the LF-deletion theory. This is because deletion of the higher copy of a moved item would leave the lambda abstract intact, which would make the wrong prediction that,

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[9]Specifically, they offer three arguments, based on the interaction between raising and *wh*-movement in English, facts from agreement with group terms in British English, and multiple scrambling in Japanese

[10]The other empirical arguments presented by S&E are also irrelevant for relative clauses. One of these arguments involves verbal agreement in number with the raised XP in subject position. The other argument involves Japanese sentences in which two instances of scrambling target multiple specifiers of the same head. As far as I can tell, these arguments are not testable in (Spanish) relative clauses.

for instance, the sentence in (29) above could be interpreted as a predicate, rather than a proposition. Although this argument is relevant for other cases of movement, it is clearly not so for relative clauses. As we saw in §4.2, in relative clauses, total reconstruction must in fact leave the predicate created by movement intact, since relative clauses are interpreted as predicates, not propositions. Furthermore, this kind of reconstruction cannot be achieved via PF-movement, since this kind of movement has no effect on interpretation. This is the crucial factor that distinguishes total reconstruction in relative clauses from other cases of total reconstruction.

To conclude, even if we accept the PF-movement analysis for the cases of total reconstruction examined by S&E, the arguments presented by them are not relevant in relative clauses, which makes their proposal compatible with the analysis of relative clauses defended here.

5. Conclusion

In the previous sections, I have offered an explanation for the fact that definite articles can be used as relative operators. Given that the analysis explains the facts, it is to be preferred to alternative accounts in which they are due to accidental homophony. Furthermore, the analysis derives the facts directly from the copy theory of movement, together with certain assumptions that are necessary within this theory. Thus, the analysis defended here can be seen as offering further support for the copy theory of movement.

Although the analysis explains why definite articles can be used as relative operators in Spanish (and other languages, like German), there are several questions that still remain open. As we saw in §2, definite articles are not the only type of relative operators in Spanish. These other relative operators are some *wh*-words, the definite article followed by *cual* 'which', and *cuyo* 'whose', which can only function as a relative operator. As for *el cual*, the fact that it contains a definite article is, of course, predicted by the analysis defended here. The fact that *cual* can also be used as a question *wh*-word does not seem to be particularly problematic, since these two *cual*'s have different syntactic properties: in relative clauses, it seems to behave like a noun, since it is preceded by a definite article; in questions, it is not preceded by an article, and seems to behave like a determiner. Thus, I tentatively assume that *cual* in relative clauses is simply a semantically empty noun.

The other types of relative operators seem more problematic. The analysis presented here seems to make the strong prediction that only definite articles should be used as relative operators. However, this is not the case. What the analysis predicts is that, if the relative operator has other uses, the DP headed by the relative operator can be interpreted as a (bound) definite description in those other uses. Thus, the analysis is not contradicted by operators like *cuyo* 'whose', which can only be used as a relative operator, since there is no reason to suppose that a DP headed by it is not definite. As far as I can tell, this argument also applies to relative operators in other languages which have no

other use.

This brings us to the more serious problem of explaining the use of *wh*-words as relative operators, especially given the fact that their use as relative operators is also possible in other languages like, for instance, English. Under standard assumptions, *wh*-words are interpreted as quantifiers, which the analysis defended here predicts should not be able to function as relative operators. One possible solution is to assume, contrary to the standard assumption, that *wh*-words, or, at least the ones that can be used as relative operators, are definite determiners. In fact, this is precisely what is suggested for *wh*-words like *which* in Rullmann and Beck (1998). Although this seems like a promising approach, more work is needed in this area, and I leave it as a question for further research.

Finally, I would like to mention languages that use personal pronouns as relative operators. One such language is Modern Hebrew. Probably, the solution to this problem will come from a better understanding of the relation between personal pronouns and definite articles. It has often been proposed in the literature that personal pronouns and definite articles are in fact the same lexical item (or, at least, different 'varieties' of the same lexical item; see Elbourne 2000 and references cited there). It seems that the right path to follow in this case is to investigate the differences in distribution of personal pronouns and definite articles in both Spanish and Hebrew, and use this to find an explanation for the difference between these two languages in their choice of relative operators.

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