Spanish Reciprocals

Karlos Arregi

MIT

`karlos@mit.edu`

1.   Introduction

Two elements in Spanish reciprocals: *el uno* 'the one' and *el otro* 'the other':

(1)   Clodomiro y   Pancracio estuvieron hablando el   uno con   el   otro.
   Clodomiro and Pancracio were talking the one with the other
   Clodomiro and Pancracio talked with each other.

The analysis: these two elements do not form unit, i.e. they do not form together a 'reciprocal pronoun'. They are both (more or less) what they appear to be.

- *El uno* is interpreted as a definite description bound by the plural antecedent.

- *El otro* is interpreted as *el otro*, i.e. 'the other one'.

- Both *el uno* and *el otro* are singular.

- The reciprocal meaning is the result of the plurality of the antecedent and the meaning of *other*.

2.   Syntax

The intuition is that (1) is interpreted as

(2)   For each member of the set formed by Clodomiro and Pancracio, that one member
   of the set talked to the other member of the set.

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where *el uno* is interpreted as 'that one member of the set' and *el otro* is interpreted as 'the other member of the set'. I.e. *el uno* fills one argument slot of the predicate, and *el otro* fills the other one.

(3)   *The Syntax of Reciprocals*

```
                    TP
              _____|_____
           C&P            |
                      ____|____
                     1         T̄
                          _____|_____
                         T          VP
                    estuvieron    ___|___
                       were   [el uno]₁   V̄
                              the one   ___|___
                                   hablando  con el otro
                                   talking  with the other
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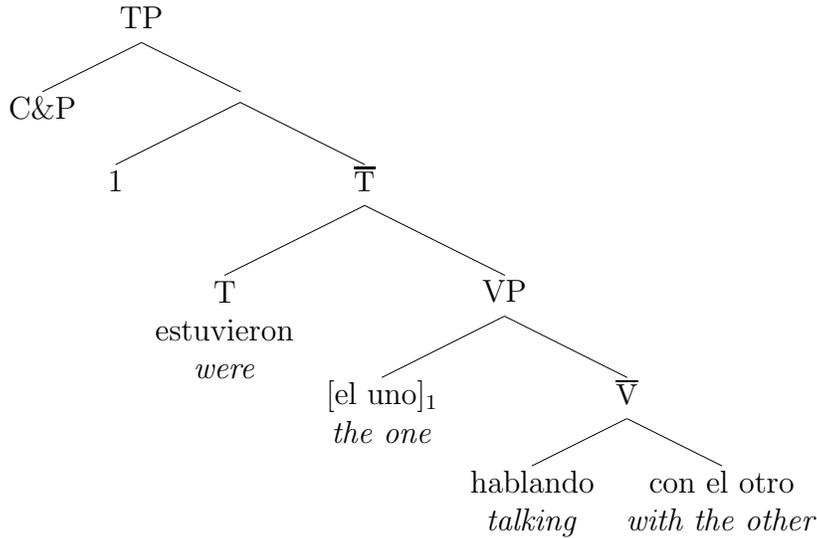
El uno is the spellout of the trace of the antecedent and is interpreted as a definite description bound by it (see below).

Two pieces of evidence that an analysis along this line is correct:

1. The antecedent and *el uno* agree in case.

2. *El uno* and *el otro* do not have to be adjacent.

(4)   **A Leocadia y Eusebia**, les   di   **a la una** la foto   de la   otra.
        to Leocadia and Eusebia   them I-gave to the one the picture of the other
        I gave Leocadia and Eusebia each other's picture.

3.   Semantics

Reciprocal sentences have two components: distribution and reciprocity. The plurality of the antecedent provides distribution, and *other* provides reciprocity. (Langendoen 1978, Higginbotham 1980, Heim, Lasnik and May 1991, Schwarzschild 1996, Beck 2001).

(5) Clodomiro y   Pancracio estuvieron hablando el   uno con   el   otro.
     Clodomiro and Pancracio were   talking   the one with the other
     Clodomiro and Pancracio talked with each other.

(6) For each member of the set formed by Clodomiro and Pancracio, that one member
     of the set talked to the other member of the set.

El uno does not contribute to reciprocity; it is just a definite description bound by the
antecedent. In particular, it is not a distributive Q (as *each* is in Heim, Lasnik and May
1991). If it were, a reciprocal meaning would need the distributive Q to bind *el otro*. However,
a reciprocal reading is available even when *el uno* is inside an island:

(7) Eulogio and Ifigenio are recent linguistics graduates, and have been looking for a job.
     They were hired by different departments. These departments have just realized that
     they made the wrong choice.

(8) Eulogio e   Ifigenio me han dicho que
     Eulogio and Ifigenio me have told   that

     [el   departamento que ha contratado al   uno] quiere contratar al   otro.
       the department   that has hired   to-the one   wants hire   to-the other

     *Eulogio and Ifigenio told me that the department that hired Eulogio wants to hire
     Ifigenio and the department that hired Ifigenio wants to hire Eulogio.*

(9) *El uno* 'the one'

$$\left[\!\!\left[\begin{array}{c} \text{DP}_i \\ \overgroup{\text{el} \quad \text{uno}_j} \end{array} \right]\!\!\right] = \text{the } x \text{ such that } x = g(i) \ \& \ x \in g(j)$$

El otro provides reciprocity:

(10) *El otro* 'the other'

$$\left[\!\!\left[\begin{array}{c} \text{DP} \\ \overgroup{\text{el} \qquad \text{NP}} \\ \overgroup{\text{otro}_i \quad \varnothing_j} \end{array} \right]\!\!\right] = \text{the } x \text{ such that } x \neq g(i) \ \& \ x \in g(j)$$

$$= g(j) - g(i)$$
'the member of the antecedent set which is not $g(i)$'

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Both *el uno* and *el otro* are singular.

The plurality of the antecedent provides distributivity:

(11)   a.   Clodomiro y   Pancracio han hablado con   Teófilo.
           Clodomiro and Pancracio have talked   with Teófilo.
       b.   For each member x of the set C&P, x has talked to Teófilo.

(12)   *Plurals and Distributivity*

$$\left\llbracket\ \overparen{\text{DP}_{PL}\quad \text{YP}}\ \right\rrbracket = 1 \text{ iff}$$

$$\text{for all members } x \text{ of } \llbracket\text{DP}_{PL}\rrbracket, \llbracket\text{YP}\rrbracket(x) = 1$$

[Link (1983), Landman (1989a,b)]

(13)   Agapito y   Bonifacio se conocen el   uno al   otro.
       Agapito and Bonifacio SE know   the one to-the other
       Agapito and Bonifacio know each other.

For all members x of AB,
x knows AB$-x$ ≡
Agapito knows Bonifacio and Bonifacio knows Agapito

[A y B]$_2$ $\lambda x[x \in \text{AB } \& \ x \text{ knows AB}-x]$

1   $g(1) \in \text{AB} \ \& \ g(1) \text{ knows AB}-g(1)$

[el uno$_2$]$_1$
the one   conoce   [al otro$_1$ Ø$_2$]
                      knows   *the other*
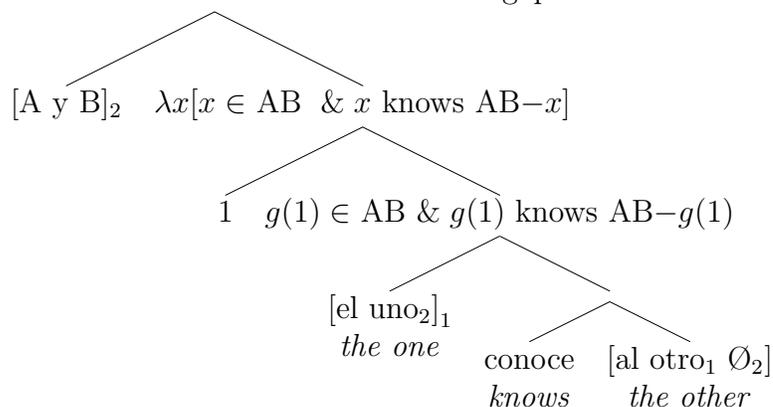
Since the antecedent set contains only two members, AB$-x$ denotes the other member of the antedent set.

4.   Antecedents with More Than Two Members

The analysis developed so far cannot handle examples in which the antecedent has more than two members, because *el otro* presupposes that the antecedent set contains only two members. This is due to the fact that *el otro* is singular.

(14) Los niños se conocen el   uno al   otro.
      the kids SE know   the one to-the other
      The kids know each other.

(15) For all members x of the set of kids, x knows the member of that set which is not x.

If we want to interpret *el otro* as singular, something else is needed.

Consider one of the possible readings of (14). Imagine the kids are Celso, Bonifacio, Agapito and Epifanio. (14) can be true in a context in which Celso and Bonifacio know each other and Agapito and Epifanio know each other. This type of reading is *Partitioned Strong Reciprocity*: the reciprocal predicate holds of pairs which are non-overlapping subsets of the antecedent set.

In order to get this reading, we need to distribute the antecedent set twice: once down to non-overlapping pairs, and then from each pair to its members.

First, distribution to individual members is not enough, we also need distribution to sub-sets of the original set. In fact, this is in general possible for plurals (Landman 1989a,b, Schwarzschild 1996):

(16) a. The cows and the pigs filled the barn to capacity.

      b. The cows filled the barn to capacity and the pigs filled the barn to capacity.

(17) *Plurals and Distributivity* (Schwarzschild 1996)

$$\left[\!\left[\; \mathrm{DP}_{PL} \; \; \mathrm{YP} \; \right]\!\right] = 1 \text{ iff}$$

for all members x of the salient cover of $[\![\mathrm{DP}_{PL}]\!]$, $[\![\mathrm{YP}]\!](x) = 1$

(18) *Covers*

      C is a cover of P iff:

      1. C is a set of subsets of P.
      2. Every member of P belongs to some set in C.
      3. $\varnothing$ is not in C.

Thus, in order to get Partitioned Strong Reciprocity, we can first distribute the antecedent set down to pairs (i.e. its salient cover contains non-overlapping pairs).

However, we also need to distribute each pair dowen to its members. This can be done by raising the antecedent and distributing both the antedent and its trace after raising. (The idea that some cases of reciprocity are parallel to double distribution in plurals is found in Langendoen 1978.)

(19)　For all members z of the salient cover of N,
　　　for all members x of the salient cover of z,
　　　　　x knows $z - x$

　　　[The kids]$_3$　　λz[For all members x of the salient cover of z
　　　　　　　　　　　　x knows $z - x$]

　　　　　　　1　For all members x of the salient cover of $g(1)$
　　　　　　　　　　　x knows $g(1) - x$

　　　　　　　　t_1　　$\lambda x[x \in g(1)$ &
　　　　　　　　　　x knows $g(1) - g(2)]$

　　　　　　　　　　2　　　$g(2) \in g(1)$ &
　　　　　　　　　　　　$g(2)$ knows $g(1) - g(2)$

　　　　　　　　　[el uno$_1$]$_2$

　　　　　　　　　　　　knows　[al otro$_2$ $\emptyset_1$]

The salient cover of N (the kids) contains two non-overlapping pairs z, e.g.:

{Celso,Bonifacio} and {Adalberto,Epifanio}.

The first distribution is down two these two pairs. The salient cover of each pair contains two members. The second distribution is down to each member of the pair, i.e. the reciprocal predicate applies to each pair. Thus, the presuppostions of singular *el otro* are met.

If, on the other hand, the salient cover of N contains all possible pairs, we get *Strong Reciprocity*: every kid knows every other kid.

Intermediate Reciprocity can also be accounted for in this way:

(20)   Los jugadores estaban el   uno sentado al lado del   otro.
        the players   were   the one sitting   next   to-the other
        The players were sitting next to each other.

(20) has a salient reading which describes four players sitting in a row. The recirpocal relation holds between some overlapping pairs. If the players are Jacinto, Cipriano, Bartolo and Primitivo:

(21)   Jacinto↔Cipriano↔Bartolo↔Primitivo

In this reading, the salient cover of the antecedent set contains these overlapping pairs.

5.   Weak Reciprocity and Cumulativity

The analysis with raising of the antecedent cannot account for *Weak Reciprocity*:

(22)   Los niños se estan tocando el   uno al   otro.
        the kids SE are   touching the one to-the other
        The kids are touching each other

(22) can be used to describe a situation in which every kid is touching another kid and every kid is being touched by another kid. However, it is not necessarily true that if kid a is touching kid b, kid b is touching kid a too (i.e. it is not Intermediate or Partitioned Strong Reciprocity).

In the analysis with raising of the antecedent, this is not possible: once the antecedent set is distributed down to pairs, Strong Reciprocity holds for each pair.

Langendoen (1978), Sternefeld (1998), Beck (2001): Weak Reciprocity parallels *cumulativity* in plurals:

(23)   Baldomero y   Gilberto han leído *Lituma en Los Andes* y   *La casa verde.*
        Baldomero and Gilberto have read *Lituma en Los Andes* and *La casa verde.*

(24)   Baldomero has read *Lituma en Los Andes* and Gilberto has read *La casa verde.*

(25)   Each member of the set B&G has read a member of the set LA&CV, and each member of the set LA&CV has been read by a member of the set B&G.

Weak Reciprocity can be paraphrased in a similar way:

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(26)   Each member of the set of kids is touching a (different) member of the set of kids, and each member of the set of kids is being touched by a (different) member of the set of kids.

With Weak Reciprocity, cumulativity holds between the antedent set and itself.

(27)   *Cumulation*

$$\left[\!\!\left[\begin{array}{c} \text{DP1}_{PL} \\ \quad \text{DP2}_{PL} \quad \text{YP} \end{array} \right]\!\!\right] = 1 \text{ iff}$$
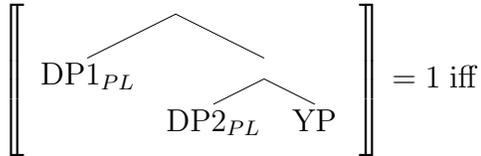
       i.   For all members x of the salient cover of $[\![\text{DP1}_{PL}]\!]$, there is a member y of the salient cover of $[\![\text{DP2}_{PL}]\!]$ such that $f(x)(y) = 1$, and

      ii.   For all members y of the salient cover of $[\![\text{DP2}_{PL}]\!]$, there is a member x of the salient cover of $[\![\text{DP1}_{PL}]\!]$ such that $f(x)(y) = 1$.

(28)   Baldomero and Gilberto have read *Lituma en Los Andes* and *La Casa Verde.*

For all $x \in$ B&G, there is a $y \in$ LA&CV s.t. x has read y, and

   for all $x \in$ LA&CV, there is a $x \in$ B&G s.t. x has read y

                  B&G

                        have read   LA&CV
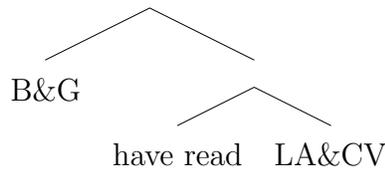
For Weak Reciprocity, we need cumulation between the antecedent set and itself. However, in our LF, the antecedent set is only represented once in the right place in the structure:

(29)

```
                    TP
         ┌──────────┴──────────┐
   [The kids]₄                 ┊
              ┌────────────────┴────┐
              1                    T̄
                        ┌───────────┴────────┐
                       are                  VP
                                   ┌──────────┴──────┐
                              [el uno₄]₁            V̄
                                            ┌────────┴────────┐
                                        touching    [al otro₁ Ø₄]
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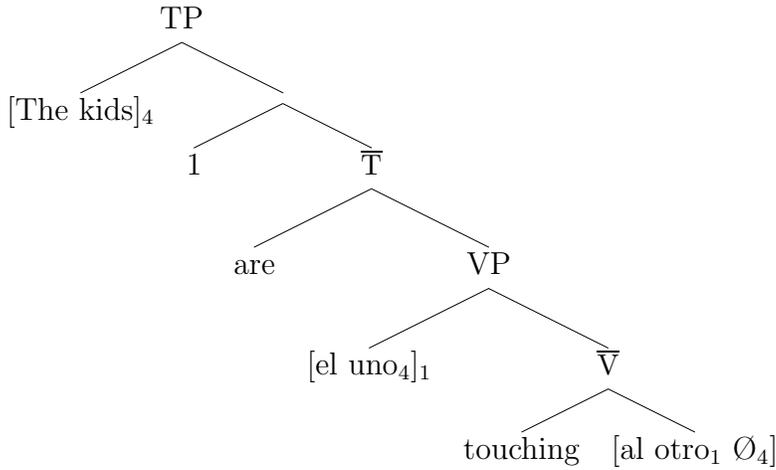
Beck (2001): by raising $\varnothing_4$ (from *el otro*), we have two constituents referring to the antecedent set in the right place in the structure:

(30)

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                       TP
          ┌────────────┴────────────┐
   [The kids]₄                      ┊
                 ┌──────────────────┴─────────────────────────────┐
              Ø₄     λy.λx.x ∈ y & x is touching y − x
                              ┌─────────────────────┴──────┐
                              2                            ┊
                                        ┌──────────────────┴────┐
                                        1                      T̄
                                                   ┌────────────┴──────┐
                                                  are                 VP
                                                          ┌────────────┴──────┐
                                                     [el uno₄]₁             V̄
                                                                    ┌─────────┴─────────┐
                                                                touching    [al otro₁ t₂]
                                                                              g(2) − g(1)
```
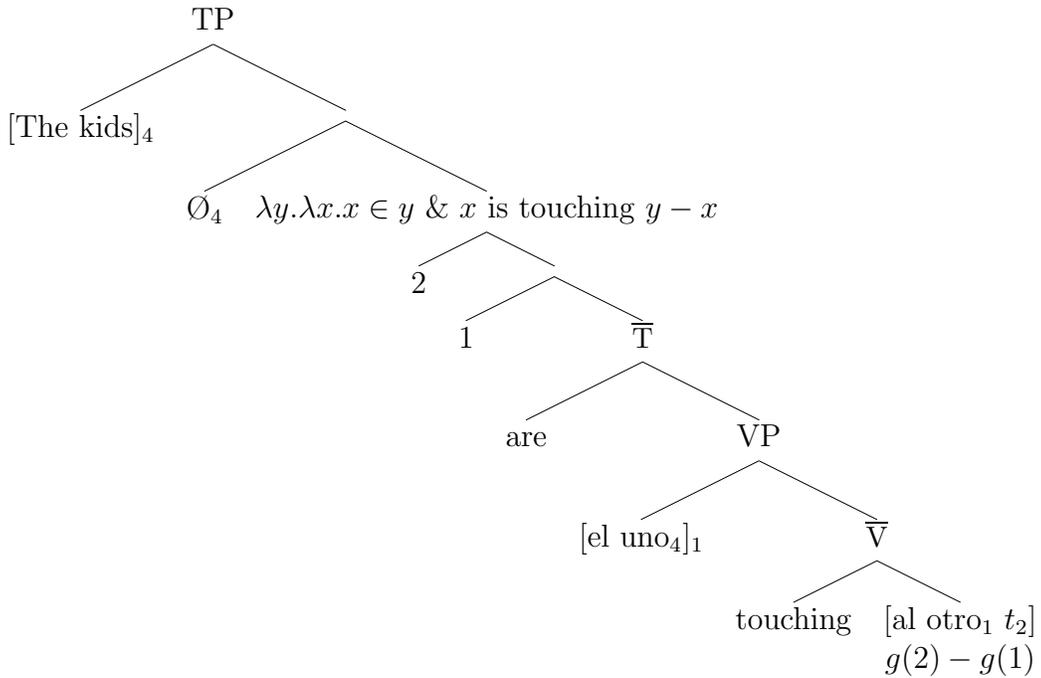
The resulting reading can be paraphrased as:

(31)   For each member x of a cover of N, there is a member y of a cover of N s.t. x is a member of y and x touches the other member of y, and

for each member y of a cover of N, there is a member x of a cover of N s.t. x is a member of y and x touches the other member of y.

In this case, the antecedent set needs two different covers. The reciprocal predicate requires y to range over pairs, and x to be one of the members of that pair. Thus, one of the covers contains the individual members of N, and the second cover contains pairs such that for each individual member of N, that individual is also a member of a pair in the second cover. For instance:

(32)   If the set of kids N contains kids a, b, c and d:

      i.   The members of the first cover are a, b, c, and d.

      ii.   The members of the second cover are {a,b}, {b,c}, {c,d} and {d,a}.

Cumulation pairs these covers as:

(33)   {a,{a,b}} (a is touching b)
      {b,{b,c}} (b is touching c)
      {c,{c,d}} (c is touching d)
      {d,{d,a}} (d is touching a)

However, with other covers of N, other pairings are also possible:

(34)   {a,{a,b}} (a is touching b)
      {b,{b,c}} (b is touching c)
      {c,{c,a}} (c is touching a)
      {d,{d,b}} (d is touching b)

This satisifies the LF posited for the sentence, but it does not represent Weak Reciprocity as defined above: kid d is touching someone, but is not being touched by everyone. This is in fact also possible for reciprocals (*One-way Weak Reciprocity*).

References

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