Moving verbal chunks in the low functional field.

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Abstract

The paper proposes a partial unification of two computational devices: the derivational option advocated in Cinque (2004) to account for the distributional difference between certain adverbs and the corresponding adverbial PPs; and "smuggling", the device proposed by Collins (2005, 2006), which circumvents minimality violations in passive and raising constructions. After reviewing certain cases of smuggling moving verbal chunks in passive, we propose to also extend this derivational technique to the analysis of psych-verbs.

Introduction

Cinque (2004) treats distributional differences between certain adverbs (fully natural in clause-internal position) and the corresponding adverbial PP's (only natural in clause-final position) by assuming leftward movement of a verbal constituent past the adverbial PP:

(1)a   Gianni ha rapidamente risolto il problema
        'Gianni has rapidly solved the problem'
    b Gianni ha risolto il problema con rapidità
        'Gianni has solved the problem with rapidity'

If the aspectual adverbials *rapidamente/con rapidità* appear in the specifier of a "celerative aspectual head" (Asp_{cel}), the order in (1)b is derivable by moving the verbal chunk *risolto il problema* to the left of Asp_{cel} P, as illustrated in (2):

(2)   Gianni ha   [con rapidità Asp_{cel} [risolto il problema]] ➔

      Gianni ha [risolto il problema] [con rapidità Asp_{cel} <risolto il problema>]

Cinque (1999) also proposes a similar analysis to deal with certain unexpected cases of violations of the adverbial hierarchy in the linear order. A similar analysis has been proposed for the distribution of the aspectual marker *done* in Jamaican creole (Durlemann (2006)). The completive aspect marker *done* may precede or follow the VP, a state of affairs that Durrleman analyzes as involving optional movement of the VP to the Spec of the aspectual head[1]:

(3)   a Im   done nyam i'
              'S/he finished eating it'

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[1] An anonymous reviewer points out that Italian Sign Language also has an aspectual marker corresponding to *done* in clause final position, a property presumably amenable to the same analysis presented in the text.

See also Koopman and Szabolcsi (2000) for an extensive use of movement of verbal chunks to accommodate variations in word order.

Clearly the movements of verbal chunks discussed in this paper involve the lower part of the clausal functional field, hence the v/Voice/Aspect complex and not the Tense/Mood complex. We will not elaborate here on the exact nature of the heads attracting the various verbal chunks in the different cases.

b Im nyam i' done
' S/he finished eating it'

In this paper we would like to propose a partial unification of this derivational option with *smuggling*, the device recently proposed by Chris Collins (Collins 2005), which allows the avoidance of minimality violations in passive and raising constructions. We would like to discuss the case of *smuggling* moving verbal chunks in passive, and also extend the technique to the analysis of psych-verbs.

1. *Verbal chunks across Adverbs and PPs*

Consider (4) and (5).

(4)   a Gianni ha rapidamente risolto il problema
          Gianni has rapidly solved the problem
        b Gianni ha risolto il problema rapidamente
          Gianni has solved the problem rapidly

(5)   a ?Gianni ha con rapidità risolto il problema
          Gianni has with rapidity solved the problem
        b Gianni ha risolto il problema con rapidità
          Gianni has solved the problem with rapidity

The *–mente* adverb naturally occurs in the position between the auxiliary and the past participle, while the adverbial PP gives rise to marginality in the same internal position. If the two adverbials are s-selected in the same position (Cinque (2002), this difference must be accounted for. Presumably the PP adverbial weakly intervenes in the Agree relation between the functional head bearing phi-features for subject agreement and the vP- internal subject, as schematized in (6).

(6)   … T_{phi} … con rapidità ... [vP Gianni ……]

The interference can be avoided by moving the verbal chunk past the PP. This movement is anyway optionally available, as the alternation in the case of the *-mente* adverb shows.[2]

Example (5)a is only mildly deviant. We would like to consider two possible accounts of the fact that the structure is not clearly ungrammatical.
A.   This might be due to the fact that the nominal part of the adverbial is embedded within the PP, hence it does not strictly intervene in terms of c-command. Perhaps, the nominal features tend to project to the PP node (as is shown by the fact that PP pied-piping is the norm is many languages). If the nominal features project, intervention takes place in (6). However, they may marginally fail to project, in which case the structure is (marginally) acceptable.

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[2] As pointed out by an anonymous reviewer, the order PstPrt PP Object, as in i. is fully acceptable, with the object is interpreted as new information focus:
            i.   Gianni ha risolto con rapidità il problema
                      Gianni has solved with rapidity the problem
The derivation could run as follows: the object first moves to the vP peripheral focus position (Belletti (2004)); then, the vP remnant moves past the adverbial PP; from the derived position the subject is accessible to the establishment of the Agree relation without interference and the relevant order is obtained.

B.   Alternatively, if one assumes an analysis of PPs à la Kayne (2004), according to which the preposition is part of the extended projection of the verb and the PP is assembled derivationally, the structure of (5)a would be as indicated in (7):

(7) … T_{phi} … [con [rapidità ... [vP Gianni risolto……] …]…]

In this case the nominal part of the adverbial would strongly intervene on the Agree relation. One would then expect a strong interference effect. The mild character of the violation could be explained along the following lines. The derivation of (5)b should proceed as follows: first, leftward movement of the vP past the preposition; then, leftward scrambling of the assembled remnant PP constituent; finally, establishment of the Agree relation. The marginality of the example could then be ascribed to the marginal character of such a clause internal PP scrambling operation. The well formed (5)b would have the same derivation, without PP scrambling.

     That the relevant property is the nominal character of the adverbial and not its prepositional nature is shown by the minimal pairs in (8):

(8)   a Gianni ha di nuovo mangiato (la pasta)
              Gianni has of-new (again) eaten (pasta)
          b Gianni ha mangiato (la pasta) di nuovo
              Gianni has eaten (pasta) of-new (again)

          c ?*Gianni ha di corsa mangiato (la pasta)
               Gianni has of-run (rapidly) eaten (pasta)
          d Gianni ha mangiato (la pasta) di corsa
             Gianni has eaten (pasta) of-run (rapidly)

          e Gianni ha all'improvviso capito (il problema)
             Gianni has to the-sudden (suddenly) understood (the problem)
          f Gianni ha capito (il problema) all'improvviso
             Gianni has understood (the problem) to the-sudden (suddenly)

          h ?*Gianni ha alla rinfusa spiegato (il problema)
               Gianni has to the-disorder (roughly) explained (the problem)
          i Gianni ha spiegato (il problema) alla rinfusa
   Gianni has explained (the problem) to the-disorder (roughly)

In (8) a, e the prepositional adverbial contains (presumably) an adjective – *nuovo, improvviso* – and the interpolation between the auxiliary and the past participle is as natural as the corresponding *-mente* adverb. In contrast, in (8) c, h where the prepositional adverbial contains a noun – *corsa, rinfusa* - , the interpolation gives rise to marginality. We leave open here the issue of the different levels of marginality of the deviant structures.

2. *Movement of verbal chunks*

2.1 Passive

Movement of a verbal chunk has been proposed in the *smuggling* analysis of passive (Collins (2005)). Movement of the verbal chunk containing the verb + object (O) past the higher vP internal subject (S)

avoids interference of the latter in both the establishment of the Agree relation between T_{phi} and the object and in the subsequent movement of the object into the high EPP subject position of the clause. Collins assumes that the relevant verbal chunk moves into the Specifier of the preposition *by*, present within the functional structure of the clause as (part of) the realization of the passive voice. The relevant *smuggling* step of the derivation is illustrated in (9):

(9)

$$\ldots T_{phi} \ldots [\quad by \ldots \quad [_{vP} \; S \; [_{VP} \; V \; O\ldots\ldots] \ldots]\ldots]$$
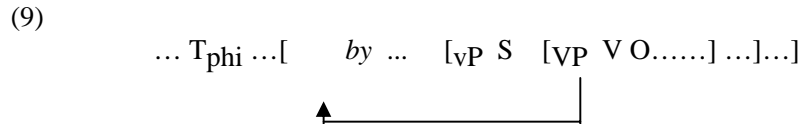
The passive case bears an obvious similarity with the adverb/PP case discussed earlier, except that here the verbal chunk that is preposed is the VP, a smaller verbal constituent than the whole vP.[3]

2.2 Psych-verbs

2.2.1 The "piacere" class

Consider the following alternation in Italian:

(10) a A Gianni piacciono queste notizie
        To Gianni like(pl) these news
      b Queste notizie piacciono a Gianni
        These news like(pl) to Gianni

There are good reasons to analyse (10) a as a "quirky subject" structure (Belletti & Rizzi (1988)), with the inflected verb agreeing with the Theme argument, regardless of what argument fills the subject position. Hence, both (10)a and (10)b instantiate a subject-predicate articulation, with an apparent optionality in the selection of the "subject of predication" argument. This is also supported by the interpretive facts in the following discourse fragments:

(11) A A Gianni piaceva Maria
        To Gianni liked Maria
      B Però *pro* non lo voleva ammettere
        But (he) did not want to admit it

(12) A Maria piaceva a Gianni
        Maria liked to Gianni
      B Però *pro* non lo voleva ammettere
        But (she) did not want to admit it

Pro is known to pick out the "subject of predication" of the previous sentence as its preferred antecedent (Calabrese (1986); Belletti, Bennati, Sorace (2007)). In fact, in (11)B *pro* necessarily picks out "Gianni" as its possible antecedent, while in (12)B it necessarily picks out "Maria". Since the movement to the subject position is in this case partly dissociated from the satisfaction of the Case-Agreement system, we

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[3] The question arises as to why a *smuggling* derivation could not permit object movement to subject position across the thematic subject in a transitive active sentence. A solution could be phrased in terms of phase theory. Suppose that a transitive vP is a phase, then a non-phase constituent like VP may not be extractable from it if movement of non-phase constituents can only be strictly local, phase internal. VP movement would be possible in passive and unaccusative-like structures if small vP is not phasal in these cases as argued in Chomsky (2001).

assume that the relevant position filled by the "subject of predication" is not simply the specifier of T endowed with phi-feature, but rather the specifier of a dedicated Subj head, higher than T, as in Cardinaletti (2004), Rizzi (2006), Rizzi & Shlonsky (2007).

That the dative Experiencer asymmetrically c-commands the nominative Theme in the initial representation of the vP is suggested by the following binding facts:

(13)   a *?Ai suoi$_i$ genitori piace ogni$_i$ bambino

           To his parents likes every child

      b I suoi$_i$ genitori piacciono ad ogni$_i$ bambino

        His parents like (pl) every child

Backward binding is possible in the Nominative Verb Dative configuration (13)b, but not in the Dative Verb Nominative configuration (13)a. Assume the initial configuration of the verb phrase in (14):

(14)

                vP
               ／＼
        Exp   ／＼
          v_{exp} VP
               ／＼
             V Th
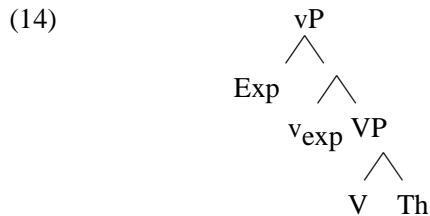
If the Experiencer is moved to Spec/Subj as in (13)a, at no level of the derivation is it c-commanded by the Theme, hence pronominal binding is impossible. In contrast, if (14) is the initial representation produced by external Merge in both cases, under Baker's (1988) UTAH, in (13)b the pronoun within the Theme can be bound by the Experiencer through reconstruction. Given these assumptions, the question arises as to why the Theme can reach the Spec/Subj position in cases like (10)b and (13)b in apparent violation of minimality since the Experiencer should intervene.

A natural solution is provided by the mechanism moving verbal chunks that we have previously discussed, a *smuggling* type operation. If the VP (14) moves past the Experiencer into a specifier position in the low functional space, further movement of the Theme to Spec/Subj would be unimpeded. In this respect, the derivation matches Collins' derivation of passive discussed in 2.1, as illustrated in (15)a, b:

(15)   a   … Subj … [X ... [$_{vP}$ Exp [$_{VP}$ V Theme …] …]…]

    b   … Subj …[[$_{VP}$ V Theme …] X [$_{vP}$ Exp <VP>] ..]
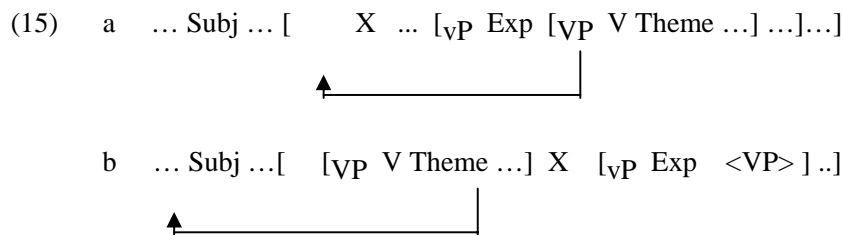
This yields the order Theme Verb Experiencer. As for the order Experiencer Verb Theme it may be derived directly from the initial configuration (14), via movement of the Experiencer to Spec/Subj.

2.2.2 The "preoccupare" class

In Belletti & Rizzi (1988) three classes of psych verbs are identified: the *temere* (fear) class displaying the regular behaviour of transitive verbs; the *piacere* (like) class with unaccusative properties; and the

preoccupare (worry) class with mixed properties. In particular, the *preoccupare* class is characterized by the capacity of the superficially lower Experiencer to bind an anaphor within the subject Theme, much as the *piacere* class and in contrast with normal transitive verbs (a problem also addressed in Platzack's paper in this volume):
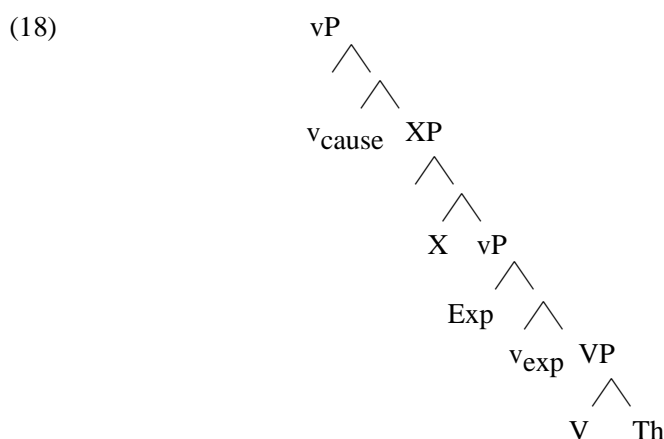
(15) a Questi pettegolezzi su di sé preoccupano Gianni più di ogni altra cosa
         These rumors about himself worry Gianni more than anything else
      b *Questi pettegolezzi su di sé descrivono Gianni meglio di ogni altra cosa
         These rumors about himself describe Gianni better than anything else

(16) Questi pettegolezzi su di sé dispiacciono a Gianni più di ogni altra cosa
      These rumors about himself dislike to Gianni more than anything else

In contrast with the *piacere* class, verbs of the *preoccupare* class do not allow the alternation shown in (10):

(17) a Queste notizie preoccupano Gianni
         These news worry Gianni
      b *Gianni preoccupano queste notizie
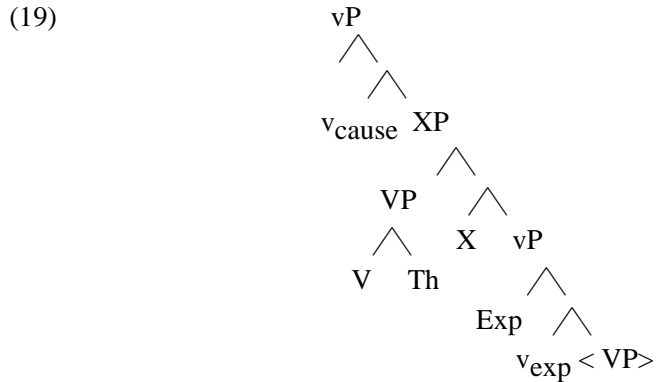   Gianni worry (pl) these news

The binding facts and other kinds of facts discussed in the reference quoted argue for an initial structure analogous to (14), with the Theme lower than the Experiencer, except that in this case movement of the Theme to the subject position is obligatory. Given our assumptions so far, the order in (17)a is naturally derived through a *smuggling* type derivation along the lines in (15). One may then think that the *smuggling* movement of the verbal chunk is obligatory in this case. Why should it be so?

Pesetsky (1995) observed that the interpretive status of the Theme is not identical in the "piacere" and "preoccupare" classes. In particular, the Theme of "preoccupare" type verbs contains an element of causation which is absent in the "piacere" class. This can be expressed in a lexical decomposition approach à la Hale & Keyser (1993) (see Cinque (2004a), Ramchand (2008)) by assuming an extra little "v" = Cause, in the functional structure of the clause:

(18)

```
        vP
       /\
      /\
  v_cause  XP
          /\
         /\
        X  vP
          /\
        Exp /\
          v_exp  VP
                /\
               V   Th
```

The little "v_{cause}" takes a (small) clausal complement, notated as XP in (18), analogous to the one normally taken by a causative verb, e.g. "fare" in Italian. Here, X attracts VP to its Spec, much as in the overt causative construction (Kayne (1975), Rouveret & Vergnaud (1980), Burzio (1986), Guasti

(1993), etc.). Once movement of the verbal chunk has occurred, the derivation continues with a representation like (19):

(19)

$$
\begin{array}{c}
vP \\
\diagup\!\!\!\!\diagdown \\
\diagup\!\!\!\!\diagdown \\
v_{cause}\quad XP \\
\diagup\!\!\!\!\diagdown \\
VP\quad \diagup\!\!\!\!\diagdown \\
\diagup\!\!\!\!\diagdown\quad X\quad vP \\
V\quad Th\quad \diagup\!\!\!\!\diagdown \\
Exp\quad \diagup\!\!\!\!\diagdown \\
v_{exp}\ <VP>
\end{array}
$$

In this case the interpretive element of causation can be thought of as an "adjunct Th role", in the sense of Zubizarreta (1985). The Theme argument moves to Spec/ v_{cause} to pick up this interpretive property. At this point, the Theme argument is necessarily closer to the Subj head, hence it is always attracted to its Spec. In order to exclude in full generality the possibility of deriving the inverse order, we must rule out the possibility of moving the Experiencer to Spec/ v_{cause} . This may be due to an inherent requirement of the cause element to be associated with the Theme argument, or to a refined definition of closeness, e.g. in terms of number of tree branches, giving the result that the Theme is closer to v_{cause} than the Experiencer once the VP chunk has moved to Spec of X. In (19) four branches separate v_{cause} Theme while five branches separate v_{cause} and Exp.

This analysis makes the structure of the "preoccupare" class very similar to the causative construction overtly involving the causative verb "fare", as in e.g.:

(20) a   Questi pettegolezzi su di sé[i] fanno arrabbiare Gianni[i]
           These rumors about himself make angry Gianni

      b   Questi pettegolezzi su di sé[i] rendono nervoso Gianni[4][i]
           These rumors about himself make nervous Gianni

Here we must assume that the cause argument starts off as the Theme of the embedded predicate – "angry/nervous about/for these rumors about himself" – and then it moves to the Spec position of the causative head.

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[4] Note that also the order in i. is possible, much as in the English case in ii.:
   i.   Questi pettegolezzi (su di sé) rendono Gianni nervoso
   ii.   This makes John happy
Perhaps, what happens in these cases is that the lexical (adjectival) predicate head moves, and then the remnant containing the Theme is smuggled in the familiar way.

Conclusion

Various problematic cases of syntactic analysis can be solved by assuming leftward movement of a verbal chunk in the low functional structure of the clause: vP movement to avoid interference by a nominal adverbial in the T_{phi} – Subject Agree relation; VP movement to avoid interference by the external argument in passive and by the Experiencer with psych verbs in the T_{phi} – Object Agree relation. The derivational mechanics is the same in all these cases, but what varies is the size of the verbal chunk and the landing site in the low functional field.

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