CASE, INCORPORATION, AND ECONOMY: AN APPROACH TO CAUSATIVE CONSTRUCTIONS

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In this paper it is argued that the causee behaves as a subject because it *is* a subject. It is shown that many different phenomena related to Binding, Control and Predication Theory may be accounted for under an analysis of Causative Constructions taking the causee as the subject of a V^{max} selected by the causative verb. Moreover, the proposed constituent structure interacts with both Case Theory and head movement, yielding a principled explanation of cross-linguistic variation of Causative Constructions with respect to Case and word order. Finally, it is claimed that a last resort rule, formulated as 'Discharge an unsatisfied case' and constrained by independently motivated economy principles, is responsible for the assignment of dative case to the causee in Catalan and many other languages.

Since the initial works in the seventies —Bordelois (1974) or Kayne (1975) for example—, many linguists have focused their attention on Causative Constructions (henceforth CC): Rouveret & Vergnaud (1980), Zubizarreta (1985), Burzio (1986), and Baker (1988) constitute an incomplete but relevant sample of works within the GB framework. The conclusions that every author has arrived at are extremely diverse in several points except in one: the causee *is* the structural subject of the causativized verb.[1] It can be said that this is an undiscussed point that underlies all works on CC, at least in the GB framework.

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[1] Bordelois (1974) and subsequent work as Bordelois (1988) are an exception within the GB framework. She claims that the causee is in fact an indirect object of the causative verb that controls the subject of the embedded sentence. However, she adopts such an analysis just for the *faire*-infinitive construction and only when the embedded verb is not ergative/unaccusative. In the other cases (*faire-par* and *faire*-infinitive with ergative/unaccusative verbs), the analysis she adopts is the 'classical' one, which represents the causee as the subject of the causativized verb. The exception is then relative.

Nevertheless, such an assumption has been called in doubt by Alsina (1991) from the LFG. He claims that no argument can be submitted to support it, and gives several arguments that point at considering the causee as an internal argument of the causativized verb. In this article I will give some piece of evidence that the causee must be represented as the higher argument of the embedded verbal projection, i.e., as a phrase-structure subject;[2] I will do it in section 1. In section 2, a principled account of CC in Catalan will be provided; I will argue that the interaction of Case Theory, Incorporation and Economy suffices to explain the behavior of CC with respect to case and word order. Section 3 attempts to show how the analysis outlined in section 2 might explain cross-linguistical variation in CC making use of independently motivated principles. Section 4 is devoted to addressing some of the remaining problems. Finally, a summary of the main conclusions will be given.

1. The Causee as a Phrase-Structure Subject

1.1. The Causee and Binding Theory (I): C-Commanding domains

Let us consider the following sentences:

(1) a. Els professors faran inscriure's$_i$ al Joan$_i$.

the teachers will-make enrol himself to-the John

'The teachers will make John enrol himself.'

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[2] It might be argued that the discussion is not on the correct track. As Baker (1988) suggests, notions such as 'subject' or 'object' cannot be further considered as primitives of the theory. Rather they should be defined with respect to the different principes and modules of the Universal Grammar. From this point of view, the causee can no longer be considered a 'subject' in the broad sense: it may be seen as a subject with respect to Thematic or Binding Theory, but as an object with respect to Case Theory, for example. However, systematizing such a theory of Grammatical Functions is beyond the scope of this article.

(1)   b.   *Els professors$_j$ faran inscriure's$_j$ al Joan.

the teachers will-make enrol themselves to-the John

'The teachers will make John enrol themselves.'

An interesting fact follows from (1): the anaphor in object position must be bound by the causee in order to be licensed, that is, the presence of a closer binder —the causee— prevents the main subject from binding the anaphor. In terms of Chomsky (1986)'s Theory of Binding, it may be assumed that the minimal Complete Functional Complex containing a BT-compatible index for the anaphor in object position includes the causee (in fact, it is the causee which provides a BT-compatible index to the anaphor), but excludes the main subject. Obviously, that amounts to saying that the causee c-commands the other arguments of the embedded verb, what is far from being surprising, if we assume the causee to be a phrase-structure subject. The causee behaves then like subjects, which c-command all the internal arguments even in their verb internal position (see Koopman & Sportiche (1991)).

Such a behavior is far from being a singularity of Romance languages. Grimshaw (1990) brings us evidence that this is so in Japanese. Japanese *zibun* 'self', only allows subjects as antecedents:

(2)   Taroo wa Hanako o zibun no kuruma kara oros-i-ta.

Taro-TOP Hanako-ACC self-GEN car from come down-PAST

'Taro brought Hanako out of his/*her own car.'

However, *zibun* allows a causee as antecedent:

(3)   Taroo wa Hanako o zibun no kuruma kara ori-sase-ta.

Taro-TOP Hanako-ACC self-GEN car from come down-CAUS-PAST

'Taro made Hanako come out of his/her own car.'

This contrast confirms the hypothesis in a sharp way: if *zibun* is, as it has been commonly accepted, a subject-oriented anaphora, then the causee must be a subject. Note moreover that, as Grimshaw (1990:168-169) points out, such a contrast is a very strong argument for rejecting lexical approaches to causative constructions.

It is needless to say that Japanese crucially differs from Catalan in allowing binding by any subject, not just the closest one. This seems to be true also for Italian. Guasti (p.c.) points out that the contrast in (1) does not hold in Italian:

(4)   a.   Maria ha fatto accusare se stesso$_i$ a Gianni$_i$.

                 Maria has made accuse himself to Gianni

                 'Maria has made Gianni accuse himself.'

     b.   Maria$_i$ ha fatto accusare se stessa$_i$ a Gianni.

                 Maria has made accuse herself to Gianni

                 'Maria has made Gianni accuse herself.'

It must be concluded that *se stesso/se stessa* 'himself/herself', like *zibun*, does not impose a closeness constraint on its antecedent.[3]

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[3] However, the facts are far from being clear. Benucci (p.c.) claims that only (4b) is possible in his dialect (Veneto). However, when the causee is realized as a clitic, both possibilities are perfect:

(i)   a.   Maria le ha fatto accusare se stesso/se stessa.

                 the Mary to-him/her has made accuse himself/herself

                 'Mary has made him/her accuse himself/herself.'

It might be argued that in this dialect the causee is in fact a PP instead of an NP. As he has pointed out to me, the causee, if realized as a clitic, may have the same form that the clitic which appears with some PPs. A detailed study of CC in Italian dialects is beyond the scope of this paper.

This conclusion is confirmed by other related phenomena. As Kayne (1975) and Burzio (1986) point out, idioms containing a possessive —(5)— and phrases expressing inalienable possession —(6)— have an anaphoric nature (the coindexation in (6c) is just an informal attempt to express the bound nature of the inalienable expression and '#' expresses that the sentence would be grammatical but with a pragmatically odd reading):

(5)   a.   La Maria porta la seva creu amb dignitat.

            the Mary carries the her cross with dignity

            'Mary puts up with her problem with dignity.'

        b.   #La Maria porta la teva creu amb dignitat.

            the Mary carries the your cross with dignity

            'Mary puts up with your problem with dignity.'

        c.   #La Maria li$_i$ porta la seva$_i$ creu amb dignitat.

            the Mary to-him/her carries the his/her cross with dignity

            'Mary puts up with his/her problem with dignity.'

(6)   a.   La Maria va ficar els nassos a l'assumpte.

            the Mary PAST put the noses in the business

            'Mary stuck her nose into the business.'

        b.   *La Maria va ficar els teus nassos a l'assumpte.

            'Mary stuck your nose into the business.'

        c.   *La Maria li$_i$ va ficar els$_i$ nassos a l'assumpte.

            the Mary to-him PAST put the noses in the business

            'Mary stuck his nose into the business.'

So then, a paradigm like (1) is expected to be repeated. The prediction is borne out:

(7)   a.   La Maria va fer portar la seva$_i$ creu amb dignitat al Joan$_i$.

            the Mary PAST make carry the his cross with dignity to-the John

            'Mary made John put up with his problem with dignity.'

(7)   b.   #La Maria$_j$ va fer portar la seva$_j$ creu amb dignitat al Joan.

the Mary PAST make carry the her cross with dignity to the John

'Mary made John put up with her problem with dignity.'

(8)   a.   La Maria els$_i$ farà ficar els$_i$ nassos a l'assumpte.

the Mary to-them will-make put the noses in the business

'Mary will make them stick their nose into the business.'

b.   *La Maria$_j$ els farà ficar els$_j$ nassos a l'assumpte.

the Mary to-them will-make put the noses in the business

'Mary will make them stick her nose into the business.'

(7)-(8) confirm to us that the causee is an appropriate binder for an anaphoric element in object position, so it must occupy a higher position in the embedded predicate in order to c-command the object position. Note furthermore that examples like (8) are a good argument for treating the causee as a subject. As Zubizarreta (1985:272) points out, "it is a lexical property of a certain class of verbs to allow an 'Art + Body Part' object to be referentially dependent on the verb's subject by virtue of directly binding the determiner to the external argument." In other words, if inalienable possessors are usually referentially bound by a subject, then, having (8) in mind, it can be concluded that the causee is a subject (at least with respect to Binding Theory).

We arrive at a similar conclusion when other idioms are taken into account. As Kayne (1975) and Burzio (1986) have suggested, 'non-passivizable' idioms like *(fer) l'orni* 'wash one's hands' must be bound by a subject because of their anaphoric nature. If this assumption is correct, it is expected, under the adopted hypothesis, to have one of these idioms licensed by the causee. The prediction is borne out again:

(9)   a.   El Joan (es) fa l'orni.

'John washes his hands.'

b.   *L'orni és fet (pel Joan).

'His hands are washed by John.'

(10) a. La Maria farà fer l'omi$_i$ al Joan$_i$.

the Mary will-make do the-omi to-the John

'Mary will make John wash his hands.'

b. *La Maria$_j$ farà fer l'omi$_i$ al Joan.

the Mary will-make do the-omi to-the John

'Mary will make John wash her hands.'

1.2. The Causee and Binding Theory (II): Asymmetrical C-Command

As it has been shown in the previous paragraph, the causee clearly c-commands the other arguments of the embedded verb. However, this cannot be taken as a conclusive proof of its subjecthood, unless a stronger relation is met: asymmetrical c-command. In X-bar terms, a subject may be defined as the argument that asymmetrically c-commands the other arguments of a given head. So then, asymmetrical c-command is a step that the proposed hypothesis cannot skip.

Quantifiers like *cada* 'every' or *cap* 'none', unlike referential elements, must c-command a pronoun in order to share its index:

(11) a. Els alumnes que havien de visitar *el museu* l'han visitat de pressa.

'The students that should have visited the museum have visited it in a hurry.'

b. *Els alumnes que havien de visitar *cada museu* l'han visitat de pressa.

'The students that should have visited every museum have visited it in a hurry.'

c. *Els alumnes que no volien visitar *cap museu* l'han visitat de pressa.

'The students that wanted to visit no museum have visited it in a hurry.'

So, if the causee asymmetrically c-commands the arguments within the embedded VP, then a quantifier of the *cada/cap* class in the causee position is expected to bound a pronoun in the object position but not conversely. The prediction is borne out:

(12) a. Vaig fer castigar el *seu* professor a *cada alumne*.

'I made every student punish his teacher.'

   b. No vaig fer castigar el *seu* professor a *cap alumne*.

'I made no student punish his teacher.'

(13) a. *Vaig fer castigar *cada alumne* al *seu* professor.

'I made his teacher punish every student.'

   b. *No vaig fer castigar *cap alumne* al *seu* professor.

'I made his teacher punish no student.'

If the internal arguments of the embedded verb were able to c-command the position of the causee, sentences like those in (13) would be grammatical. However, the facts point to the opposite direction: at LF the trace left by the quantifier is locally bound by the pronoun yielding a Principle C violation. In other words, if sentences like (13) are instances of Strong Crossover configurations —and it seems to be the case—, then they give us evidence enough to conclude that the causee asymmetrically c-commands the internal arguments of the embedded verb.[4]

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[4] Sentences like these in (i) seem to pose a problem to the claim that the causee asymmetrically c-commands the object position.

(i) a. Vaig fer castigar *cada un dels alumnes* al *seu* professor.
        'I made their teacher punish each of the students.'
    b. No vaig fer castigar *cap dels alumnes* al *seu* professor.
        'I made their teacher punish noone of the students.'

If my claim is correct, the distributive phrase cannot c-command the causee, so no coreference relation is expected to hold. However, it is not clear that the distributive phrases in (i) are equivalent to the quantifiers in (13). Note that they enter into coreference relations even in contexts where no c-commanding relation is available:

(ii) a. Els alumnes que havien de visitar *cada un dels museus els* han visitat de pressa.
         'The students that should have visited each of the museums have visited them in a hurry.'
     b. Els alumnes que no volien visitar *cap dels museus* han acabat visitant-*los* de pressa.
         'The students that wanted to visit none of the museums have ended to visit them in a hurry.'

1.3. The Causee and Control Theory

I have hypothesized that the causee is a phrase-structure subject, at least with respect to Binding Theory. We may now look over Control Theory in order to test whether the hypothesis fits in with obligatory control. Let us firstly consider the following sentences, where an obligatory subject controller is required:

(14) a. El Joan desitja de tenir un cotxe per sortir els caps de setmana.
'John wants to have a car to go out on weekends.'

b. Carl Lewis intenta batre el rècord del món dels cent metres.
'Carl Lewis tries to beat the one hundred meters world record.'

Under my hypothesis, if we causativize a verb requiring control by a subject, the causee will be able to control the PRO in the mostly embedded sentence. The data confirm this prediction:

(15) a. La publicitat li va fer desitjar de tenir un cotxe per sortir els caps de setmana.
'Publicity made him want to have a car to go out on weekends.'

b. El fracàs als 'trials' li va fer intentar batre el rècord del món dels cent metres.
'The failure at the trials made him try to beat the one hundred meters world record.'

Even though the causee is realized as a *pro* bound to a dative clitic, it is still a phrase structure subject. Its controller properties remain thus unchanged. In other words, control brings us more evidence that the causee is indeed a phrase-structure subject.[5]

It must thus be concluded that distributive phrases are indeed referential, namely, they need not c-command a pronoun in order to corefer with it. So then, sentences like those in (i) do not contradict the claim that the causee asymmetrically c-commands the object position.

[5] Note that the presence of an overt causee makes the sentences considerably worse:

(i)   ??La publicitat va fer desitjar de tenir un cotxe per sortir els caps de setmana al Joan.
the publicity PAST make want to have a car to go-out the ends of week to-the John
'Publicity made him want to have a car to go out on weekends.'

1.4. The Causee and Predication Theory

It has already been shown that both Binding and Control Theory confirm the hypothesis that the causee is a phrase-structure subject. So does Predication Theory. Let us see it.

Primary predicates are selected by the verb as a lexical property:[6]

(16)   a.   La Maria es torna *(vermella).

          the Mary becomes (red+fem)

          'Mary blushes.'

      b.   El Joan considera *(estúpida) la Maria.

          the John considers (stupid+fem) the Mary

          'John considers Mary stupid.'

Moreover, primary predicates may be subject —(16a)— or object —(16b)— oriented depending on the lexical requirements of the verb. Now a prediction can be made: the causee

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However, the marginality of (i) might not be due to syntactical but to pragmatic reasons. The sentence is not seen as ungrammatical by the speakers, but they all acknowledge it cannot be easily processed. Note that the sentence improves if the causee appears before the infinitival sentence:

(ii)   ?La publicitat va fer desitjar al Joan de tenir un cotxe per sortir els caps de setmana.

       the publicity PAST make want to-the John to have a car to go-out the ends of week

       'Publicity made him want to have a car to go out on weekends.'

So then, the marginality of (i) might be due to any pragmatic constraint against concentrically nested structures. I leave the issue open.

[6] I will not take into account the kind of structural link that holds between the primary predicate and its subject, because it plays no role in the present discussion.

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might be the subject of a subject-oriented predicate, but could not be the subject of an object-oriented predicate. Consider the relevant data:[7]

(17) a. El Joan fa tornar vermella la Maria.
          the John makes become red+fem the Mary
          'John makes Mary blush.'

      b. *El Joan fa considerar estúpida els nens a la Maria.
          the John makes consider stupid+fem the children to the Mary
          'John makes Mary consider the children stupid.'

      c. El Joan fa considerar estúpids els nens a la Maria.
          the John makes consider stupid+pl the children to the Mary
          'John makes Mary consider the children stupid.'

We find once again the same pattern: the causee acts like a subject, so it can be the subject of a subject-oriented predicate, whereas it cannot be the subject of an object-oriented one.

To sum up, we have seen in section 1 that the causee behaves exactly like a subject with respect to different modules of Universal Grammar such as Binding, Control or Predication Theory. That allows us to consider it a phrase-structure subject. Now in section 2 an analysis taking all these arguments into account is provided.

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[7] Note that the NP *la Maria* in (i) cannot be considered the causee, but the object of the embedded verb, the causee being realized as an implicit argument (the someone of the translation).
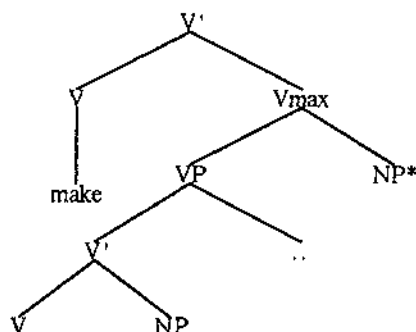
(i)   El Joan va fer considerar estúpida la Maria.
          the John PAST make consider stupid+fem the Mary
          'John made someone consider Mary stupid.'

2. A Principled Analysis of CC in Catalan

2.1. Constituent Structure

Let us assume as a point of departure that the (simplified) constituent structure of CC is that of (18) (order being irrelevant):

(18)

2.1.1. Causative Verbs Do Not Select a Clausal Complement.

Li (1990) claims that the lack of any kind of embedded inflection is a property that distinguishes CC from constructions involving CP complements. English provides us with a well-known example:

(19) a.   John makes him study more.

     b.   John wants him to study more.

     c.   *John makes him to study more.

     d.   *John wants him study more.

The particle 'to' has been commonly assumed to represent overt infinitival inflection, so then its absence in CC clearly suggests that no inflection node (nor clausal projection) is present at all. The same behavior is found in languages having morphological causatives (the Creek examples in (20) are quoted from Martin (1991) and the Oromo ones in (21) from Lloret (1987)):

(20) a.   Istoci-t osaafki-n homp-is.

        baby-NOM sofkey-ACC eat-DCL

        'The baby is eating sofkey.'

(20) b. Hononwa-t istoci osaafki-n hompe-yc-is.

          man-NOM baby sofkey-ACC eat-CAUS-DCL

          'The man is feeding the baby sofkey.'

(21) a. Terfaa-n fiig-e.

          Terfa-NOM run-P3ms

          'Terfa ran.'

      b. Terfaa-n Toltuu fiig-sis-e.

          Terfa-NOM Toltu run-CAUS-P3ms

          'Terfa made Toltu run.'   (where DCL= declarative; P= past)

As Li (1990) argues, if the causative verb selects a CP, any kind of trace of the embedded inflection is expected to appear in the complex verb. However, this is not so, as (20)-(21) clearly show. So then, it must be concluded that causative verbs do not select a clausal complement (see Li (1990) for other arguments supporting this idea).

Another empirical argument supporting the hypothesis is given to us by the following contrast:

(22) a. *El Joan fa haver-hi moltes cadires.

          the John makes be-there many chairs

          'John makes there be many chairs.'

      b. *El Joan fa ser necessari que vingui.

          the John makes be necessary to come

          'John makes it be necessary to come.'

(23) a. Déu va fer ploure durant quaranta dies.

          God PAST make rain for forty days

          'God made it rain for forty days.'

      b. L'onada de fred va fer nevar per sobre dels mil metres.

          the wave of cold PAST make snow by over of-the thousand meters

          'The cold wave made it snow over the one thousand meters level.'

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Whereas impersonal verbs cannot causativize, weather verbs can. In other words, the causee may be a quasi-argument but never a non-argument. How is this to be explained? Although it can intuitively be claimed that some kind of lexical restriction is at stake here, I will pursue another explanation, based on (some version of) the ECP. Let us follow Rizzi (1986,1990) and assume that (the content of) an empty category can be identified by two means: (a) a referential index, and (b) ϕ-features. A referential index, in turn, must be licensed by a theta role.[8] So then, the phonetically null quasi-argument in (23) bears a referential index (it is assigned a theta role), becoming identified. The non-argument in (22), however, receives no theta role nor consequently referential index. The only way for it to be identified is to share ϕ-features with some local binder. But, if the causative verb selects a verbal category as a complement, then there is no item bearing ϕ-features (i.e., there is no Infl at all) capable of binding the non-argumental empty category. So then, the sentence is ungrammatical. To sum up, under the hypothesis that the causee is the phrase-structure subject of a verbal category, the contrast between (22)-(23) can be accounted for by means of independently motivated principles.

2.1.2. *Causative Verbs Select a V^{max}.* As it has been shown in the latter paragraph, there is good evidence to assume that causative verbs do not select a clausal complement, but a verbal one. This has led many linguists to assume that causative verbs select a VP as a complement. I also claim that causative verbs select a verbal complement, but instead of considering it a VP I will assume it is a V^{max}, in the sense of Koopman and Sportiche (1991). As far as I can see, the choice between VP and V^{max} does not have empirical consequences, but it does have theoretical ones.

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[8] My proposal differs from Rizzi's in one point: he assumes referential indices to be licensed by a *referential* theta role. This is a crucial point because the distinction between referential and non-referential theta roles allows Rizzi to capture the fundamental argument/adjunct asymmetries. Under my proposal every kind of theta role licenses a referential index, an undesirable result as far as ECP effects are concerned. However, other independent factors might be at stake here distinguishing quasi-arguments from adjuncts (manner adverbs, nominal parts of idioms, measure phrases). Note that locative and temporal indices are also licensed in a different way referential indices are. Perhaps some similar mechanism is at stake here. Nevertheless, pursuing such an analysis is beyond the scope of this article.

Considering the complement of a causative verb as a V^{max} allows us to express the close parallelism between subjects and causees in a formal way: both are immediately dominated by V^{max} and are sisters of VP, namely, the causee is the NP* of Koopman and Sportiche (1991). The consequences that such a move leads to fit in with the behavior of the causee. First of all, the thematic properties of the causee stop being a mistery: the causee receives the external theta role from VP under sisterhood like internal subjects do.[9] Furthermore, the parallelism extends to case assignment: both subjects and causees may receive case across the V^{max} boundaries, at least in Romance languages. The difference is that, whereas subjects may receive nominative case from a functional head (see Rizzi (1990) and Zubizarreta (1992)), causees receive accusative or dative case from the complex verb formed by incorporation of the causativized verb into the causative one (see 2.2. below for the analysis).

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[9] Guasti (p.c.) suggests an alternative (see Guasti (1992)). She proposes that the causee is in fact selected by the causative verb, which also assigns it an extra theta role. Such an extra theta role would explain the following contrast (the examples are due to Guasti):

(i)   a.   Gianni prende la medicina.
             'John takes the medicament.'
       b.   Ho fatto prendere la medicina a Gianni.
             (I) have made take the medicament to John
             'I made John ingest the medicament.'
       c.   Ho fatto prendere la medicina da Gianni.
             (I) have made take the medicament by John
             'I made John take hold of the medicament.'

The extra theta role assigned to the causee by the causative verb would account for the benefactive interpretation of the causee in (i b). However, it is far from clear that such an analysis would hold in Catalan, where, even though the *faire-par* construction with an overt 'by-phrase' is almost unknown, both interpretations are still available:

(ii)   He fet prendre la medicina al Joan.
        (I) have made take the medicament to-the John
        'I made John ingest/take hold of the medicament.'

2.1.3. The Causee as the Subject of V^{max}. The constituent structure in (18) accounts for all the examples quoted in section 1. Let us see the most relevant ones, repeated here as (24)-(26):

(24) a. Els professors faran inscriure's$_i$ al Joan$_j$.

the teachers will-make enrol himself to-the John

'The teachers will make John enrol himself.'

b. *Els professors$_j$ faran inscriure's$_j$ al Joan.

the teachers will-make enrol themselves to-the John

'The teachers will make John enrol themselves.'

(25) a. Vaig fer castigar el *seu* professor a *cada alumne*.

'I made every student punish his teacher.'

b. No vaig fer castigar el *seu* professor a *cap alumne*.

'I made no student punish his teacher.'

(26) a. *Vaig fer castigar *cada alumne* al *seu* professor.

'I made his teacher punish every student.'

b. *No vaig fer castigar *cap alumne* al *seu* professor.

'I made his teacher punish no student.'

First of all, the behavior of anaphors in object position —(24)— is not surprising. A governor (the causativized verb), a subject (the causee), and a BT-compatible index are provided within V^{max}. Moreover, V^{max} is a Complete Functional Complex (CFC) because all the functions required by its head are satisfied within it (in this case, V^{max} has both a subject and an object). So then V^{max} is the Minimal Governing Category (MGC) for an element in object position. The facts confirm this: an anaphor in object position must be bound within V^{max}. The same explanation holds for the other anaphoric expressions, i.e., idioms containing a possessive, constructions expressing inalienable possession, and non-passivizable idioms (see 1.1. for the relevant examples).

Let us consider now (25)-(26). It is obvious that if quantifiers, because of their non-referential status, must c-command a pronoun in order to corefer with it, the constituent structure in (18) accounts for (25)-(26) straightforwardly.

Another piece of evidence for the correctness of the analysis is given to us by clitic climbing. The obligatory adjunction to the causative verb of the clitic related to the causee position is a well known characteristic of CC, but it has not received a straightforward account in the literature. Consider the relevant data:

(27)   a.   El Joan la va fer venir.

           the John her PAST make come

           'John made her come.'

       b.   El Joan li va fer menjar patates.

           the John to-him/her PAST make eat potatoes

           'John made him/her eat potatoes.'

       c.   *El Joan va fer venir-la

           the John PAST make come-her

           'John made her come.'

       d.   *El Joan va fer menjar-li patates.

           the John PAST make eat-to-him/her potatoes

           'John made him/her eat potatoes.'

Such a compulsory movement only holds for clitics related to the causee position. The clitics related to internal arguments of the embedded verb may appear adjoined either to the causative verb or to the embedded one:

(28)   a.   El Joan va fer comprar-ne a la Maria.

           the John PAST make buy-of-it to the Mary

           'John made Mary buy some of it.'

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(28)   b.   El Joan en va fer comprar a la Maria.

the John of-it PAST make buy to the Mary

'John made Mary buy some of it.'

If we assume, following Torrego (1988), that cliticization is in fact Det incorporation, then the contrast in (27) can be accounted for straightforwardly. Having (18) in mind, it is clear that a Det in the position of the causee cannot incorporate to the embedded verb without violating the ECP: the trace would not be governed by the moved Det. The only possible landing site for such an incorporating Det must be outside V^{max}, that is, the causative verb or a higher functional category (see Villalba (in progress) for a more detailed analysis of clitic climbing in CC). So then the obligatoriness of clitic climbing when a causee is involved may be derived from the ECP.

Furthermore, the constituent structure in (18) explains why causees behave like subjects with respect to Control and Predication Theory: they *are* subjects.

To sum up, many facts related to Binding, Control, Predication or clitic climbing have been accounted for under the analysis that takes the causee to be the subject of a V^{max} selected by the causative verb.

2.1.4. Word Order. Since Stowell (1981), the informational content of phrase-structure rules has been replaced by a word order parameter, commonly formulated as 'head first' vs. 'head last'. That parameter has proved to be a fruitful approach to many of the typological generalizations Greenberg's framework on linguistic universals arrived at. However, it has recently been claimed that another parameter determining the order of the external argument is needed: the Head-Subject Parameter (see Giorgi and Longobardi (1991) and Georgopoulos (1991), who calls it the 'Specifier Parameter'). Giorgi and Longobardi argue that many word order differences between languages can be accounted for by means of the Head-Subject Parameter. Specifically, they suggest that Romance vs. Germanic differences with respect to

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the internal structure of NPs are due to a different setting of the Head-Subject Parameter: rightward in Romance vs. leftward in Germanic. Let us consider now the following contrast:

(29) a. El Joan va fer comprar un llibre a la Maria.

        the John PAST make buy a book to the Mary

        'John made Mary buy a book.'

     b. *El Joan va fer la Maria comprar un llibre.

        'John made Mary buy a book.'

(30) a. *John made buy a book (to) John.

     b. John made Mary buy a book.

Leaving aside the aspects concerning case, which will be addressed in the next subsection, it might be asumed that the main difference between CC in Catalan and English has to do with the position of the causee: whereas it must precede the embedded VP in English, it must follow it in Catalan. How is such a difference to be explained? The HSP might bring us a good chance of dealing with the contrast in (29)-(30) by means of assuming a different setting of the HSP, which has proved to be independently motivated for NPs. So then, the causee (i.e., the subject of V^{max}) falls under the HSP: it is generated to the left of VP in English but to the right in Catalan.

However, I am not pursuing such an analysis here for two reasons. First of all, in recent work by Kayne (invited lecture at the GLOW Colloquium, 1992, Lisbon) and Uriagereka (class lectures, GISSL 1992, Girona) it is argued that word order is not a property of UG but a condition imposed by the interfaces with other cognitive systems, especially by the interface with Phonetic Form. That is, Phonetic Form imposes linearization on the output of UG. If this approach to word order is correct, parameters dealing with word order, such as the HSP, may be dispensed with.

Empirical evidence supporting so may be found in the following contrast (the examples in (31) are quoted from Alsina (1991)):

(31) a. Farem creure/confiar la Maria en l'atzar.
          (we) shall-make believe/rely the Mary in/on the-chance
          'We shall make Mary believe in/rely on chance.'

      b. *Farem creure/confiar en l'atzar la Maria.
          (we) shall-make believe/rely in/on the-chance the Mary
          'We shall make Mary believe in/rely on chance.'

(32) a. Farem creure/confiar en l'atzar a la Maria.
          (we) shall-make believe/rely in/on the-chance to the Mary
          'We shall make Mary believe in/rely on chance.'

      b. *Farem creure/confiar a la Maria en l'atzar.
          (we) shall-make believe/rely to the Mary in/on the-chance
          'We shall make Mary believe in/rely on chance.'

If we assume the causee to be subject to the HSP, which takes the rightward value in Catalan, it is expected to appear to the right of the internal arguments. The facts seem then to contradict such a prediction. However, note that, in spite of surfacing between the complex verb and the embedded object, the causee still c-commands the arguments within the embedded VP in both cases:

(33) a. Farem creure/confiar la Maria en si mateixa.
          (we) shall-make believe/rely the Mary in/on herself
          'We shall make Mary believe in/rely on herself.'

(33)   b.   Farem creure/confiar en si mateixa a la Maria.

(we) shall make believe/rely in/on herself to the Mary

'We shall make Mary believe in/rely on herself.

In other words, it seems to be the case that the causee is not always generated to the right of the VP.[10] Furthermore, this also seems to be true for subjects in main sentences:

(34)   Els nens van confiar tots en si mateixos.

the children PAST rely all in themselves

'The children all rely in themselves.'

If Sportiche (1988)'s analysis of floating quantifiers is correct, then it must be assumed that subjects may generate to the left of the VP in Catalan (see Solà (1991) for a proposal along these lines).

To sum up, both theoretical and empirical evidence allows us to dispense with the HSP. But, how is word order in CC to be explained? I claim that the causee may freely generate either to the left or to the right of the VP. However, even though no parameter nor constraint regulates the position in which the causee may appear, the conditions on case assignment will rule out some structures. In other words, I am having the work usually done by parameters fixing word order done by independently motivated conditions on case assignment. As far as I can see this is a highly desirable result on conceptual grounds. Nevertheless, I am not going into this analysis in detail until conditions on case assignment are introduced (see 2.2.2. below). So I will turn back to this issue later.

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[10] Guasti (p.c.) suggests that PP scrambling would explain the contrast without assuming free generation of the causee. However, it is difficult to see how a scrambling-based analysis would account for the binding facts in (33).

2.2. Case Assignment and Verb Incorporation

The behavior of CC with respect to case is exemplified by the following sentences:

(35) a. El Joan fa plorar la Maria.

          the John makes cry the Mary

          'John makes Mary cry.'

      b. El Joan l'ha feta plorar.

          the John her-has made+fem cry

          'John made her cry.'

(36) a. El Joan fa menjar patates a la Maria.

          the John makes eat potatoes to the Mary

          'John makes Mary eat potatoes.'

      b. El Joan li ha fet menjar patates.

          the John to-him/her has made eat potatoes

          'John made him/her eat potatoes.'

The causee is assigned accusative case (as cliticization and past participle agreement show) when the embedded verb selects one argument, whereas dative (as cliticization and lack of past participle agreement show), if more than one argument is selected. Three questions immediately arise:

A. Why two different cases are involved?

B. Why does the causee receive dative case?

C. How are the number of cases and the number of arguments to be related?

Before answering these questions, a further refinement of the analysis of CC is needed.

2.2.1. Verb Incorporation. Let us assume that the causative verb and the embedded verb form a complex verb (see Burzio (1986)). Let us further assume, following Guasti

(1991,1992), that such a complex verb formation is in fact a subcase of Verb Incorporation. The formation of complex words in the syntax poses many interesting problems. For example, if two case assigners become a new complex word, will their case assigning properties be added or not? In other words, how is syntax related to morphology? The null hypothesis consists of applying to complex words the same principles that hold for simple words. That amounts to saying that cases cannot be added. Baker (1988) also adopts such a hypothesis and states the following principle:

(37)   *Case Frame Preservation Principle (CFPP)*

A complex X^0 of a category A in a given language can have at most the maximal case assigning properties allowed to a morphological simple item of category A in that given language.

As a result, no more than two cases, one accusative and one dative, are available in CC, because verbs in Catalan are able to assign only two cases (for the sake of simplicity I am leaving nominative case aside). The following sentence confirms such a prediction:

(38)   *El Joan va fer comprar un cotxe als nens a la Maria.

the John PAST make buy a car to-the children to the Mary

'John made Mary buy a car for the children.'

The complex verb must license three NPs, but there is no way for a verb to assign three cases in Catalan. So then (38) is ruled out as a Case Filter violation (see 2.2.2).[11] Note that this

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[11] The sentence in (38) sharply contrasts with that of (i), where the causee is not lexically realized:

(i)   El Joan li va fer comprar un cotxe als nens.

the John to-him/her made buy a car to-the children

'John made him/her buy a car for the children.'

The wellformedness of (i) is unexpected. A solution based on Noun Incorporation will be provided in 3.1.

constraint on complex words does not hold in languages that do not trigger Verb Incorporation (the Dutch example in (39b) is quoted from Koster (1987)):

(39) a. John made Mary give him a book.

  b. Jan liet Peter Marie een boek geven.

  John let Peter Mary a book give

  'John let Peter give a book to Mary.'

Even though no verb is able to assign three accusative cases neither in English nor in Dutch, the sentences are perfectly grammatical: the embedded verb assigns accusative case to its complements and the causative verb to the causee (see section 4 below for a more detailed account of CC in Germanic languages).

Verb Incorporation gives us a good answer to question C: the relation between the number of cases and the number of arguments follows from the CFPP, i.e., from the constraints that UG imposes on the formation of complex words. However, a crucial point is still to be explained: Why is Verb Incorporation necessary? Let us assume, following Larson (1988) and Li (1990), that verbs must be governed by Infl in order to assign case. If this assumption is correct, a principled account of Verb Incorporation is provided. The embedded verb cannot assign case, because it is not governed by Infl but by the causative verb. So then, the only way for it to license its complements is VI (note that the embedded verb is a closer governor that prevents case-marking of the complements by the causative verb). Once incorporated, Infl governs the complex verb, allowing it to assign case.[12]

2.2.2. Case Assignment. Questions A and B remain unanswered:

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[12] Guasti (1991, 1992) adopts a morphology-based analysis: it is the morphological subcategorization of the items that triggers Verb Incorporation. As far as I can see, her proposal is perfectly compatible with the analysis just outlined.

A. Why two different cases are involved?

B. Why does the causee receive dative case?

From a pre-theoretical point of view it is easy to see that causativization poses a case problem. Causativization increases the value of a predicate (the embedded verb), so the number of arguments becomes higher than the number of cases that such a predicate could assign. It is then necessary for the complex verb to have at least one case more than the embedded verb in order to avoid a Case Filter violation. I am thus assuming the causative verb may assign both an accusative and a dative case. Such an assumption is far from being implausible if sentences like the following are taken into account:

(40) a. El Joan (li) va fer els deures a la seva germana.
          the John (to-him/her) PAST do the homework to the his sister
          'John did the homework for his sister.'

      b. El Joan (li) va fer un poema d'amor a la seva xicota.
          the John (to-him/her) PAST do a poem of-love to the his girlfriend
          'John did a love poem for his girlfriend.'

However, even though a dative case is available, it may not be assigned because there is no argument receiving also a theta role from the causative verb. In other words, if a dative case were assigned either to the the embedded object or the causee, it would be a violation of the Uniformity Condition because inherent case must be linked to a theta role and obviously this is not the case in CC. Nevertheless, a dative case is assigned to the causee in transitive CC. How is this paradox to be solved? We have two options: (a) dispensing with the Uniformity Condition or (b) assuming the dative case of causees not to be an inherent case. I am pursuing the latter.

Let us consider the nature of the dative case that appears in CC (the accusative case poses no special problem, let us assume without justification that accusative case must be assigned under

adjacency at S-Structure; see Chomsky (1981) and Stowell (1981)). Its main properties are the following:[13]

(a)   A complement must appear.

(b)   It is assigned by means of an inserted case assigner *a* 'to'.

(c)   It is not associated to a theta role or semantic interpretation, i.e., it is not an inherent case.

Let us see the relevant sentences:[14]

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[13] Baker (1988) argues that sentences like the Malayalam one in (i) confirm the claim that the last resort case is not structural:

(i)   *Ammayaal kuṭṭi aanaye ṇuḷḷ-ikk-appeṭṭ-u.
        mother-INSTR child-NOM elephant-ACC pinch-make-PASS-PAST
        'The child was made to pinch the elephant by the mother.'

He argues that if the case borne by the causee were structural, the causee would be able to raise and hence (i) would be grammatical. However, such a proof is weakened by the existence of Italian sentences like (ii):

(ii)   Gianni è stato fatto riparare la macchina.
        John was been made repair the machine
        'John was made to repair the machine.'

[14] (41b) is very frequent in spoken Catalan. However, the causee still receives accusative case:

(i)   *El Joan li va fer plorar.
        the John to-him/her PAST make cry
        'John made him/her cry.'

In other words, the presence of an *a* 'to' in spoken Catalan CC with one argument does not mean that the causee receives dative case. The *a* is a definiteness marker similar to the *a* we find in Spanish:

(ii)   Juan hizo llorar a María.
        John made cry to Mary
        'John made Mary cry.'

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(41)   a.   El Joan va fer plorar la Maria.

            the John PAST make cry the Mary

            'John made Mary cry.'

       b.   *El Joan va fer plorar a la Maria.

            the John PAST make cry to the Mary

            'John made Mary cry.'

       c.   *El Joan va fer comprar patates la Maria.

            the John PAST make buy potatoes the Mary

            'John made Mary buy potatoes.'

       d.   El Joan va fer comprar patates a la Maria.

            the John PAST make buy potatoes to the Mary

            'John made Mary buy potatoes.'

       e.   *El Joan va fer parlar del temps la Maria.

            the John PAST make talk of-the weather the Mary

            'John made Mary talk about the weather.'

       f.   El Joan va fer parlar del temps a la Maria.

            the John PAST make talk of-the weather to the Mary

            'John made Mary talk about the weather.'

(42)   a.   Vaig fer castigar el *seu* professor a *cada alumne*.

            'I made every student punish his teacher.'

       b.   No vaig fer castigar el *seu* professor a *cap alumne*.

            'I made no student punish his teacher.'

(43)   a.   Les males notícies li van fer témer una guerra. (experiencer)

            The bad news made him be afraid of a war.'

       b.   El Joan va fer trencar el vidre al nen. (agent)

            'John made the child break the glass.'

In (41) it is shown that the presence of dative case is related to the previous presence of a
complement. The sentences in (42) show, as it has been proved in 1.2., that the quantifiers in

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the position of the causee c-command the object position. It must be assumed then that they head a NP, in other words, that the *a* is not a preposition, but an inserted element with no semantic content. (43) confirms the latter conclusion: the causee is not associated with a fixed theta role.

These properties make very difficult to relate the dative case assigned in CC with the one assigned by main verbs. Let us then follow an idea from Baker (1988) and assume that the dative case is assigned to the causee by means of a last resort rule in order to prevent a Case Filter violation. It is well known that CC pose case problems and that languages have different means to solve them. There are languages that have no problems because of their case properties: it is the case of languages with double object constructions, i.e., languages where verbs may assign two structural cases (see 3.2.). Catalan and Romance languages do not have verbs assigning two structural cases, so they must use a marked rule of case assignment in order to avoid a Case Filter violation. The use of a last resort rule is attested in many different languages. In a dialect of Chichewa, the causee must be strictly adjacent to the embedded object in order to receive case (examples from Baker (1988)):

(44)   a.   Ana a-na-ik-a mtsuko pa mpando.
            Children SP-PAST-put-ASP waterpot on chair
            'The children put the waterpot on the chair.'
       b.   *Amayi a-na-ik-its-a mtsuko pa mpando kwa ana.
            the woman SP-PAST-put-CAUS-ASP waterpot on chair to children
            'The woman made the children put the waterpot on the chair.'

The constraint imposed on case assignment to the causee fits in with marked case rules. However the most illustrative use of a marked case rule is given to us by Gilyak. According to Baker (1988), the case assigned to the causee has no other use in this language. This is obviously a extremely marked situation.

Let us return now to Catalan. We have evidence enough to make use of a last resort rule assigning case to the causee, but it is necessary to constrain its application.

Economy is an aspect that must be taken into account. Conceptually, it is highly desirable to constrain the scope of a last resort rule to the cases where less marked options are not available. In other words, operations applying in UG are to be constrained by Chomsky (1992)'s Last Resort Principle. Put in more concrete terms, if a CC does not need to use a last resort rule to converge, then it *cannot*. The prediction is borne out:

(45)   a.   El Joan fa venir la Maria.

          the John makes come the Mary

          'John makes Mary come.'

      b.   *El Joan fa venir a la Maria.

          the John makes come to the Mary

          'John makes Mary come.'

The causee may receive (accusative) case without making use of a last resort rule, so then (45b) is derivationally more costly than (45a), being ruled out by the Last Resort Principle.

Another factor to be considered arises from the following contrast:[15]

(46)   a.   El Joan fa menjar les patates a la Maria.

          the John makes eat the potatoes to the Mary

          'John makes Mary eat the potatoes.'

(46)   b.   *El Joan fa menjar a les patates la Maria.

          the John makes eat to the potatoes the Mary

          'John makes Mary eat the potatoes.'

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[15] (46b) is acceptable under the pragmatically odd reading that takes *a les patates* 'to the potatoes' as the causee.

Descriptively, the facts are quite clear: only the causee may receive case by means of a last resort rule. Thus, we must rule out a sentence like (46b), where the causee is left generated, receiving accusative case from the complex verb, and the embedded object receives case *in situ* by means of a last resort rule. That is, the last resort rule must be made sensitive to the position of the NP needing case in order to guarantee it only affects the causee. The rule would be formulated as follows:

(47)   *Last Resort Rule (1)*

    Assign a dative case iff

    (i) the assigner governs the assignee at D-Structure, and

    (ii) the Last Resort Principle is satisfied.

Condition (i) unambiguously identifies the NP receiving the last resort case with the causee: because of its position, the causee is the only argument of the embedded verb that is governed by the causative verb at D-Structure (see paragraph 2.1.2. above). The rule correctly predicts the contrast in (46): the embedded object is not governed by the causative verb at D-Structure, so it cannot receive a last resort case.

But why would this be so? In other words, is condition (i) something else than an *ad hoc* stipulation? My claim is that it may be dispensed with because its effects may be derived from Economy, namely from the Earliness Principle. Epstein (1992) adopts Pesetsky (1989)'s Earliness Principle in the following way:

(48)   *Earliness Principle*

Satisfy filters as early as possible in the hierarchy of levels (D-Structure) > S-Structure > LF.

If (48) is taken into account, a simple solution follows. The causee is already governed by the causative verb at D-Structure, so nothing prevents case-marking from taking place, satisfying the Case Filter. Otherwise the Earliness Principle would be violated, because a filter would have been satisfied and it was not. The last resort rule may be reformulated:

(49)   *Last Resort Rule (2)*

Assign a dative case iff

(i) economy principles are satisfied.

However, (49) is far from being completely satisfactory. Firstly, it implicitly assumes it is the causative verb that assigns the last resort rule. Moreover, it remains to be explained why a dative case should be involved at all. The answer might be as follows. The last resort rule 'borrows' the dative case from the case frame of the causative verb. This is possible because, as we have seen at the beggining of this paragraph, the dative case has not been satisfied before. (49) is thus properly formulated as (50):

(50)   *Last Resort Rule (3)*

Discharge an unsatisfied case iff

(i) economy principles are satisfied.

In spite of making no reference to the kind of case involved, (50) still guarantees that the last resort case would be dative anyway. Accusative case, the other candidate, is not specified for the distinction satisfied/unsatisfied when the last resort rule applies (D-Structure). This is so because accusative case, unlike dative, is expected to be satisfied (at least) at S-Structure, never before.

Secondly, the last resort rule poses a conceptual problem: condition (i) states that economy principles must be satisfied *by the rule*. But this is nonsense, for when the rule applies (D-Structure), there is no way to evaluate how costly a derivation would be. The crucial point here is that economy principles are not conditions on rules but *on derivations* (see Chomsky (1992)). So condition (i) may also be dispensed with:

(51)   *Last Resort Rule (Final Version)*
        Discharge an unsatisfied case.

The outputs of such a rule would be constrained by economy principles. The Earliness Principle makes the rule apply at D-Structure, preventing the embedded object from receiving a last resort case. Afterwards, the Last Resort Principle will evaluate whether the rule was necessary for the derivation to converge. In case it wasn't, the derivation would be ruled out.

Let us see how this analysis accounts for the whole pattern of CC in Catalan.

(52)   a.   El Joan fa bullir la llet.
              the John makes boil the milk
              'John boils the milk.'

        b.   El Joan fa sortir la Maria.
              the John makes go-out the Mary
              'John makes Mary go out.'

        c.   El Joan fa plorar la Maria.
              the John makes cry the Mary
              'John makes Mary cry.'

        d.   El Joan fa menjar patates a la Maria.
              the John makes eat potatoes to the Mary
              'John makes Mary eat potatoes.'

(52) e.   *El Joan fa comprar un cotxe als nens a la Maria.

the John makes buy a car to-the children to the Mary

'John makes Mary buy a car for the children.'

f.   *El Joan fa telefonar als nens a la Maria.

the John makes phone to-the children to the Mary

'John makes Mary phone the children.'

(52a, c) behave identically: the only one argument receives accusative case under adjacency from the complex verb. The last resort rule cannot apply, otherwise a violation of the Last Resort Principle would follow.

We have dealt with (52d) before. If the causee were generated to the left of VP, it would receive accusative case, leaving the embedded object with no case because the application of the last resort rule would violate the Earliness Principle (the Case Filter would be satisfied at S-Structure, instead of at D-Structure). If the causee is generated to the right, no problem arises: the embedded object receives accusative case from the complex verb and the causee dative by means of the last resort rule.

(52e, f) are indirectly ruled out by the CFPP. We have seen that complex verbs must behave indentically to simple ones with respect to case. So then the case frame of the complex verbs in (52e, f) contains just one dative case, which is to be assigned either to the indirect object, leaving the causee with no case, or to the causee, rendering the indirect object with no case. In other words, the last resort rule has no unsatisfied case to borrow, both sentences being thus ruled out as Case Filter violations.

Finally, two more sentences must be accounted for:

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(53)   a.   Farem creure/confiar la Maria en l'atzar.

(we) shall-make believe/rely the Mary in/on the-chance

'We shall make Mary believe in/rely on chance.'

b.   Farem creure/confiar en l'atzar a la Maria.

(we) shall make believe/rely in/on the-chance to the Mary

'We shall make Mary believe in / rely on chance.

The difference here is that the causee is generated to the left of VP in (53a), but to the right in (53b). As we have seen above, accusative case is available in (53a), preventing the last resort rule to apply because of the Last Resort Principle. In (53b) instead, accusative case is not available (the adjacency requirement is not met), allowing the last resort rule to apply without violating any economy principle.

3.   Cross-linguistical Variation in Causative Constructions

Leaving aside the aspects related to morphological variation (see Guasti (1991, 1992)), causativization falls into two patterns cross-linguistically. In Type 1 causatives, the embedded object functions like the object of the whole sentence: it triggers object agreement —(54a)— and may raise when the sentence is passivized —(54b). The causee, however, cannot. On the other hand, in Type 2 causatives, it is the causee that functions like the object of the whole sentence, so then it triggers object agreement —(55a)— and may raise when the sentence is passivized —(55b).

(54)   a.   Anyani a-na-wa-meny-ets-a ana kwa buluzi. (Chichewa; from Baker (1988))

baboons SP-PAST-OP-hit-make-ASP children to lizard

'The baboons made the lizard hit the children.'

b.   Ana a-na-meny-ets-edw-a kwa buluzi ndi anyani.

children SP-PAST-OP-hit-make-PASS-ASP to lizard by baboons

'The children were made to be hit by the lizard by the baboons.'

(55) a. Mwa:limuø-wa-andik-ish-ize **wa:na** xati. (Chimwiini; from Baker (1988))

     teacher SP-OP-write-make-ASP children letter

     'The teacher made the children write a letter.'

   b. Wa:na wa-andik-ish-iz-a: xati na mwa:limu.

     children SP-write-make-ASP/PASS letter by-teacher

     'The children were made to write a letter by the teacher.'

3.1. Type 1 Causatives

3.1.1. CC and Noun Incorporation. We have seen in section 2 how Type 1 causatives are to be analyzed: a last resort rule assigns an oblique case to the causee, which otherwise would not pass the Case Filter. However, not all languages having Type 1 causatives make use of this option. Let us consider the following contrast found in Southern Tiwa (example quoted from Baker (1988)):

(56) a. I-'**u'u**-kur-'am-ban.

     1sS:2sO-**baby**-hold-CAUS-PAST

     'I made you hold the baby.'

   b. *U'ude i-kur-'am-ban.

     baby 1sS:2sO-hold-CAUS-PAST

     'I made you hold the baby.'

The only way to have a transitive CC in Southern Tiwa is by means of incorporating the embedded object to the complex verb. Baker suggests that NI is a licit means to satisfy the Case Filter (which he understands as an instance of Chomsky's (1986) Full Interpretation Principle). So it seems to be the case that even though something blocks case assignment in (56), the language has a way of avoiding a Case Filter violation without making use of a last resort rule, namely Noun Incorporation.

Compare the sentences in (56) with the following Catalan ones:

(57) a. El Joan li va fer comprar un cotxe als nens.

the John to-him/her PAST make buy a car to-the children

'John made him/her buy a car for the children.'

b. *El Joan fa comprar un cotxe als nens a la Maria.

the John makes buy a car to-the children to the Mary

'John makes Mary buy a car for the children.'

It is the presence of an overt causee what makes (57b) ungrammatical: the complex verb cannot assign case to the four arguments because of the CFPP, that bars out complex verbs assigning more cases than simple verbs could do. In (57a) the situation seems to be identical, but I claim that here the causee has incorporated to the complex verb, satisfying the Case Filter without receiving any case. So then the Catalan and the Southern Tiwa examples are similar: in both cases an argument incorporates to the complex verb in order to avoid a Case Filter violation.[16]

3.1.2.   CC and Argument Demotion.   But NI doesn't make an end of the ways languages having Type 1 causatives solve the case problem posed by transitive CC. Consider the following Malayalam example quoted from Baker (1988):

(58)   Amma kuṭṭiyekkoṇṭə aanaye swaɜnɜtam wiiṭṭil weccə ṇuḷḷ-icc-u.

mother-NOM child-ACC by elephant-ACC self's house at pinch-make-PAST

'The mother made the child pinch the elephant at mother's/*child's house.'

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[16] Note furthermore that this analysis if combined with independently motivated economy principles may also explain why the clitic must always be unambiguously understood as the causee. Incorporating the causee, we are dispensing with the last resort rule, a costly (i.e., marked) way of assigning case. But, if instead of the causee, the indirect object incorporates, then the last resort rule is needed anyway in order to assign case to the causee, yielding a more costly derivation that is ruled out by the Last Resort Principle. That is, the unambiguity of (57a) is a direct result of economy principles operating in UG.

The reflexive *swa-* 'self', which always takes a subject as an antecedent, cannot be bound by the causee but by the main subject. This is unexpected under the analysis of CC developed in section 2. Larson (1988) proposes that a theta role assigned by a head may be assigned to an adjunct of that head. He calls such a mechanism *Argument Demotion*. I claim that Argument Demotion is at work in Malayalam CC, yielding the described binding properties. The causee, being realized as an adjunct, cannot bind the reflexive nor provide it with a BT-compatible index within V^{max}. The reflexive must thus be bound by the main subject. However, binding phenomena are not the crucial point here. What is really important is that Argument Demotion may be regarded as a way to solve the case problem posed by transitive CC:

(59)   Amma kuṭṭiyekkoṇṭə annaye ṇuḷḷ-icc-u.

mother-NOM child-ACC-by elephant-ACC pinch-make-PAST

'The mother made the child pinch the elephant.'

Note that as (60) proves the complex verb is able to assign a dative case (it must be pointed out that inanimate direct objects receive nominative in Malayalam):

(60)   Acchan (ammayekkoṇṭa) kuṭṭikkə pusʹtakam koṭupp-icc-u.

father (mother-ACC-by) child-DAT book-NOM give-make-PAST

'The father make the mother give the book to the child.'

The contrast between (59) and (60) may be accounted for if we assume that Malayalam lacks the last resort rule formulated in (51). Then, even though a dative case might be available in the case frame of the causative verb, it could not be discharged anyway. The only way for transitive CC to be grammatical is thus Argument Demotion.

Such a mechanism is also found in languages having a last resort rule (the Turkish example in (61a) is quoted from Comrie (1981)):[17]

(61) a. Ali Hasan-a mektub-u müdür tarafindan göster-t-ti.

Ali Hasan-DAT letter-ACC director by show-make-PAST

'Ali made the director show the letter to Hasan.'

b. Gianni fa scrivere una lettera a Mirna da Maria.

John makes write a letter to Mirna by Maria

'John makes Maria write a letter to Mirna.'

3.1.3. CC and the Limits of Markedness. Finally, let us take into account a possibility: What would happen to transitive CC in a language having none of the mechanisms just described? The answer is quite simple: such a language would not allow transitive CC. Berber is one of these languages (examples quoted from Baker (1988)):

(62) a. Y-ss-jen Mohand arba.

3sS-CAUS-sleep Mohand boy

'Mohand made the boy sleep.'

b. *Y-ss-wt wryaz aggzin i-wrba.

3sS-CAUS-hit man dog to-boy

'The man made the boy hit the dog.'

c. *Y-ss-icr wryaz tacurt i-wrba.

3sS-CAUS-steal man ball to-boy

'The man made the boy steal the ball.'

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17 Neither Catalan nor Spanish easily allow Argument Demotion (i.e., the *faire-par* construction). I cannot see any reason distinguishing these languages from Italian in that point. A detailed analysis of Romance CC dealing with the kind of variation just pointed out is still to be done. Obviously, such an analysis is beyond the scope of this paper.

3.2. *Type 2 Causatives*

Consider the following sentences involving Type 2 causatives (both the Swahili example in (63a) and the Chichewa one in (63b) are quoted from Baker (1988)):

(63) a.   Musa a-li-m-pik-ish-a mke wake chakula.

Musa SP-PAST-OP-cook-make-ASP wife his food

'Musa made his wife cook food.'

b.   Catherine a-na-mu-kolol-ets-a nwana wake chimanga.

Catherine SP-PAST-OP-harvest-make-ASP child her corn

'Catherine made his child harvest the corn.'

It has been suggested above that the main difference between Type 1 and Type 2 causatives had to do with case, namely with the ability of assigning two structural cases. The problem Type 1 causatives had with case was due to the fact that one of the cases the complex verb was able to assign was an inherent one. Type 2 causatives do not have this problem, because all the cases the complex verb is able to assign are structural (for the sake of concreteness, henceforth I will call ACC1 the first accusative case and ACC2 the second). Obviously case assignment conditions applying in Type 1 causatives are supposed to hold in Type 2 causatives: ACC1 will be assigned under adjacency at S-Structure. But what happens with ACC2? I will assume that ACC2 is assigned under Spec-Head Agreement in the Spec of the main VP, henceforth [Spec,VP] (see Johnson (1991)). The interaction of these two case assignment conditions with the free generation of the causee either to the left or to the right of the embedded VP brings us the correct results.

If the causee is generated to the right of the VP, it will never be adjacent to the complex verb at S-Structure, so it will not receive ACC1. It must raise to [Spec,VP] in order to receive ACC2 by means of Spec-Head Agreement. The embedded object instead will be adjacent to the complex verb at S-Structure, receiving ACC1. Afterwards the complex verb will raise to Infl, following the correct order.

If the causee is generated to the left, it will be adjacent to and receive ACC1 from the complex verb at S-Structure. The embedded object must then raise to [Spec,VP] in order to get ACC2, but this movement would be blocked by Relativized Minimality: the causee would be a typical potential governor in an A-Spec for the trace left by the embedded object.[18] Thus, generating the causee to the left of the VP would always yield an ungrammatical result.

4. Some Remaining Problems

In spite of being very appealing and fruitful, this analysis has to deal with many problems. The first one has to do with the binding properties distinguishing type 1 from type 2 causatives. It has been shown in 1.1 that the causee was able to license an anaphor in object position in Catalan and Italian (but see note 3), languages that have type 1 causatives. However, Li (1990) quotes the following example from Yupik, a language having type 1 causatives, where an anaphor in object position cannot be bound by the causee but by the matrix subject:

(64)   Arna-m annga-ni tuqute-vlar-aa ing'u-mun. (Yupik)

       woman-ERG brother-REFL kill-CAUS-3sS/3sO guy-DAT

       'The woman made the guy kill her own/*his own brother.'

Li (1990) argues that such a behavior is due to the fact that a relation of symmetrical c-command holds between the causee and the object, yielding a binding violation in case they share the same index. (48) is a mistery for my analysis.

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[18] Such an analysis apparently would fail to explain why the embedded object may raise to [Spec,IP] when the complex verb passivizes. However, it might be argued that a different kind of movement would be involved here, namely, A'-movement (see Diesing (1990) and Koopman and Sportiche (1991), where it is argued that [Spec,IP] may be either an A or an A'-position). So then, the causee, an A-specifier would prevent the embedded object from moving to an A-position ([Spec,VP]), but not to an A'-position ([Spec,IP]).

Another problem has to do with CC in Germanic. Let us consider the relevant English and Dutch examples (=(39)):[19]

(65)   a.   John made Mary give him a book.

       b.   Jan liet Peter Marie een boek geven.
            John let Peter Mary a book give
            'John let Peter give a book to Mary.'

It has been suggested that the embedded verb was unable to assign case because it was not governed by Infl. This was assumed to trigger Verb Incorporation in CC (besides any morphological factor). But, even though no Verb Incorporation applies at all in (65), the internal arguments of the embedded verb receive case. Moreover, (65) poses a problem for the CFPP, because there exists no verb assigning three structural accusative cases. Obviously Verb Incorporation cannot be proposed for CC in Germanic languages, otherwise the CFPP would be violated. I claim that the solution to this puzzle should be based on reanalyisis. Baker (1988) argues that reanalysis may be seen as abstract incorporation, that is as a coindexing relation between two heads that, even though it satisfies the conditions on head movement, involves no movement at all (possibly for morphological reasons). If we assume the sentences in (65) to

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[19] Dutch also presents CC very close to the Romance ones:

(i)   Marie liet de taart proeven aan Peter.
        Mary let the pie taste to Peter
        'Mary let Peter taste the pie.'

However, as Koster (1987), from where all the Dutch examples are quoted, points out, it has a very limited range. In fact, it can only function with stative verbs of cognition. Verbs of action are not allowed:

(ii)   *Zij lit de boerderij bezoeken aan haar ouders.
        she let the farm visit to her parents
        'She let her parents visit the farm.'

See Koster (1987:302ff) for a detailed description.

involve reanalysis, then it might be said that Infl governs the reanalyzed pair and hence the embedded verb, allowing it to assign case. Furthermore, reanalysis, unlike incorporation, does not create a complex word, so it is not subject to the CFPP, which is conceived as a condition on word formation.

Finally, the analysis proposed here has to deal with a conceptual problem: How is the last resort rule to fit in with standard assumptions about case assignment? On the one hand, a case that is neither structural nor inherent can hardly be nothing but an annoying guest for a theory of case conceived in the current terms. On the other hand, it has been shown that assuming such a last resort case is motivated on both empirical and conceptual grounds. Here I can only point out this tension. Deciding the way in which this tension is to be solved exceeds the scope of this paper.

5.   Summary

In this paper, a principled account of CC has been provided. Firstly, I have assumed the causee to be the phrase-structure subject of a V^{max} (the NP^* of Koopman and Sportiche (1991)) selected by the causative verb. Such a constituent structure has proven to be empirically adequate: it easily accounts for many facts related to binding, control, predication and clitic climbing. It has also proven to be conceptually adequate, because it formally expresses the close parallelism between causes and subjects. I have also suggested that causees may freely generate either to the left or to the right of the embedded VP, depending on whether the resulting structure fits in with case assignment conditions.

The special properties of CC in Catalan have been derived from four main factors: incorporation, the adjacency condition on accusative case assignment, the existence of a last resort rule formulated as 'Discharge an unsatisfied case', and economy principles. Incorporation of the embedded verb to the causative one creates a complex verb, which assigns accusative case under adjacency at S-Structure. Moreover, a dative case present in the case

frame of the causative verb is assigned to the causee by means of the last resort rule. Furthermore, the derivations such a rule produces are constrained by independently motivated economy principles, namely the Last Resort Principle and the Earliness Principle.

Such an analysis proposed for Catalan may easily be extended to Type 1 causatives in general. However, it has been show that languages have other ways of dealing with CC without making use of a last resort rule. It was the case of Southern Tiwa and Malayalam.

With respect to Type 2 causatives, I have suggested that the complex verb was able to assign two structural accusative cases, one under adjacency at S-Structure and the other under Spec-Head agreement in [Spec,VP]. No last resort rule has thus been postulated for Type 2 causatives.

Finally, some remaining problems have been addressed.

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