A Minimalist Approach to Clausal Gerunds

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Abstract

This is a minimalist analysis of clausal gerunds – V-*ing* constructions where the subject is either a PRO or a lexical NP marked with accusative or nominative Case. It provides a deterministic account for the occurrence of PRO and NP in exactly the same context, deriving the full range of clausal gerunds and dispensing with the notions of Government and recategorization of X-bar projections necessary in Government and Binding. Clausal gerunds are analyzed as bare TPs. Their obligatory Control null subjects are argued to be the result of NP movement, whereas non-obligatory Control ones are analyzed as *pro*. Support for movement comes from quantifier, anaphor and pronoun binding. The binding domain corresponds to the matrix clause only when NP-movement takes place. It is also shown that gerunds in the complement of perception verbs are structurally more deficient than clausal gerunds and license their lexical subjects as in regular ECM constructions.

Introduction

Constructions headed by V-*ing* (e.g. gerunds) in English are divided into several types that pattern in some respects with DPs, and in others with clauses.[1] This paper proposes a minimalist analysis (cf. Chomsky, 1995, 1999, 2000 and references therein) of V-*ing* constructions (henceforth CGs – clausal gerunds) where the subject is either a PRO or a lexical NP marked with accusative (acc-ing) or nominative Case. Among the advantages of the highly derivational analysis developed here are: (i) it formally explains why PRO and NP can occur in exactly the same context; (ii) it accounts for the distributional properties of CGs, dispensing with the notion of recategorization of X' projections used in GB to handle the apparently special behavior of these constructions; (iii) it makes do

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[1] I will use the general term V-ing (where V stands for a verb root) to refer to a broad range of V-ing constructions, restricting the terms gerunds and clausal gerunds to the ones covered in detail in this paper.

without the use of Government, a concept that has been systematically dispensed with in the minimalist program (cf. Chomsky, 1993 for seminal arguments).

Section 1 presents the different contexts where CGs occur. In section 2, I discuss empirical evidence for analyzing CGs as bare TP/IPs, distinguishing them from poss-ing constructions (V-*ing* constructions whose subject is marked with genitive Case) and from regular DPs. In section 3 I summarize the most relevant aspects of Reuland's (1983) analysis of CGs and evidence for analyzing CGs as bare TPs.

In section 4 I analyze the behavior of null subjects in CGs (standardly analyzed as PRO). I argue that the null subject of CGs with properties of OC in complement position and in adjunct position can only be the result of NP movement. As for CGs in subject position, they show non-OC properties and their null subjects are not analyzed as the result of movement. In section 5, I analyze evidence from quantifier, anaphor and pronoun binding showing that the binding domain corresponds to the matrix clause only when NP-movement also takes place. That correlation supports a movement analysis of null subjects with OC properties in CGs.

In section 6, first I address the special distributional properties of CGs: except for adjuncts, they are restricted to positions where Case checking can take place and where regular clauses are not always licensed. Abney (1987), Milsark (1988) and Kaiser (1999), among others, use this evidence to argue that CGs project as VPs or IPs and are (re)categorized into a DP or NP in the syntax, by a process of (morpho)syntactic affixation. Reuland (1983) and Johnson (1988) do not assume such a process, but rely heavily on the properties of Government in order to account for the behavior of CGs.

I provide an alternative account for the distributional properties of CGs that dispenses both with the need for (re)categorization into a DP and with the concept of Government. This account handles the special properties of CGs by relating their licensing of both PRO and lexical DPs to their Case-marking requirement. I argue that CGs pattern into two types of constructions. One type, represented by absolute CGs, does not need to appear in a Case position, and is able to check the Case of the subject NP internally. The other types require Case marking for the whole CG and for the subject DP. The account for the latter is developed in detail in section 6.

In section 7 I provide independent evidence that gerunds in the complement of perception verbs are structurally more deficient than CGs and license their lexical subjects as in regular ECM constructions.

1 Clausal Gerunds

There are five different types of clausal gerunds, originally analyzed in detail by Reuland (1983). The lexical subject of types (i) to (iv) below is marked with accusative Case, thus the term acc(usative)-ing:

(i)   Acc-ing constructions as complements to verbs (1a);

(ii) Acc-ing constructions as complements to subcategorized prepositions (1b);

(iii) Acc-ing constructions in subject position (1c);

(iv) Acc-ing constructions in prepositional phrases in adjunct position (1d);

(v) Absolute constructions (1e).

(1)   a. Mary favored Bill taking care of her land.

         b. Susan worried about John being late for dinner.

         c. *Paul showing up at the game* was a surprise to everybody.

         d. Sylvia wants to find a new house *without Mark helping her.*

         e. Mike expected to win the game, he/him being the best athlete in the school.

Besides the cases in (1), V-*ing* constructions also occur as poss(essive)-ing constructions such as (2), where the lexical subject is marked with genitive Case:

(2)   Mary's winning the contest was a big surprise.

Although I discuss properties of poss-ing constructions below, I will put aside most aspects of their analysis aside. In the current paper I will focus specially on the CGs in (1).

2 Why Clausal Gerunds should be Clauses

CGs behave in most respects like clauses (cf. Reuland 1983; following Horn 1975) and Williams (1975). In this section I list several properties that distinguish CGs not only from regular DPs but sometimes also from poss-ing constructions. Poss-ing constructions have been shown to pattern with DPs in many respects (Abney, 1987; Milsark, 1988; Williams, 1975). Abney (1987) argues that both poss-ing constructions and certain CGs should be analyzed as D/NPs at some point in the derivation. I propose that this analysis is not necessary for CGs, which I will analyze as bare TPs.

2.1 When Clausal gerunds differ from DPs and behave like poss-ing

First, consider properties that distinguish CGs from DPs. CGs pattern with poss-ing and are distinct from DPs in a couple of respects:

i. Both V-*ing* constructions can be modified by (VP)-adverbs:

(3)   a. John's/John quickly leaving surprised everybody.
        b. *John's quickly departure surprised everybody.

ii. V-*ing* can directly select for a complement, without need for *of:*

(4)   a. Mary's/Mary revising the book.
        b. Mary's revision *of* the book.

Notice that the example below patterns with regular DPs, but it should not be collapsed with poss-ing constructions (cf. Abney 1987):

(5)   Mary's revising of the book.

The properties (i-ii) above indicate that both poss-ing and CGs behave like clauses in terms of adverb licensing and Case marking of their complement NPs. I

discuss in the next section evidence showing that CGs are distinct from poss-ing and similar to regular clauses in several other respects.

2.2. When clausal gerunds differ from poss-ing and behave like clauses

CGs and poss-ing have quite different distributions. In that respect, CGs are like regular clauses and different from poss-ing and regular DP's, which pattern together:

i. CGs accept certain sentential adverbs which poss-ing constructions not:

(6) Mary(*'s) probably being responsible for the accident, the attorney did not want to defend her.

ii. CG complements allow (long) wh-extraction, whereas poss-ing complements do not:

(7) a. What did everyone imagine Fred(*'s) singing?
b. Who did you defend Bill(*'s) inviting?

iii. There is a restriction on the subject of poss-ing that it be [+specific] (a) and [+animate] (b). That restriction does not apply to CGs, where the choice of the subject is almost as free as in the corresponding tensed clauses:

(8) a. Anyone(*'s) winning this prize would be unexpected.
b. The train(?'s) arriving late in New York upset everybody.
c. John('s) arriving late in New York upset everybody.

iv. The subject position of CGs, but not that of poss-ing, may be filled with an expletive, as indicated by the distribution of the pure expletive *there*:[2]

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[2] Examples with 'weather-*it'* in poss-ing may not be rejected in general. However, that may be related to their status as quasi-arguments (cf. Chomsky 1981):
(i)   I wouldn't count on it(*'s) raining tomorrow.

(9)   You may count on *there*(*'s) being a lot of trouble tonight.

If CGs are TPs, an appropriate expression needs to occur in [Spec, TP] of the gerund in order to check the EPP feature of T^0 (Chomsky 1995, 2000, but cf. Boeckx 2000a; Castillo et alii 1999; and Martin, 1999) for attempts to derive the EPP requirement from other properties of the grammar). Besides lexical DPs, pure expletive *there* and empty categories such as control PRO and arbitrary interpretation PRO can satisfy that requirement:

(10)   a. You$_i$ may count on PRO$_i$ winning the game tonight.
        b. PRO$_{Arb}$ arriving on time is what matters now.

Apparently, there is a different reason why poss-ing constructions also need to fill out their subject position, since that position can only be filled by lexical DPs. On the one hand, empty categories cannot fill that position because there is a morphological constraint on the occurrence of the bound morpheme *'s*, which needs to be affixed to an overt element in the subject position of poss-ing.

However, a further question arises why expletive *there* cannot occur in the subject position of poss-ing. One possible reason may be the restriction on the types of DPs that can occur in the subject position of poss-ing, as shown in property (iii) above. However, if one considers that the associate of *there* is somehow related to the subject position at LF (Chomsky, 1986, 1995), there is no explanation why the overt morphology constraint on the subject of poss-ing cannot be satisfied by *there,* whereas the semantic restriction of property (iii) is satisfied by the associate of *there*. A first way out of this problem is to assume that *there* is licensed only by the need to check an EPP feature. If poss-ing is like a regular DP and does not have an EPP feature to check, *there* cannot

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In this respect, consider the contrast below, based on observations by Howard Lasnik and Norbert Hornstein (p.c.), where *it* can behave as a controller:
(ii)   a. Look up! It is begging to snow.
        b. *There's trying to be a shower this afternoon.

occupy its subject position. However, other factors may play a role in ruling out *there* from the subject position of a poss-ing. That position may carry an extra θ-role or some semantic property such as in a possessor-possessed relation like *John's bike* that cannot be satisfied by *there* (N. Hornstein, p.c.).

v.   Poss-ing are like DPs with respect to Case assignment to their subjects, which are also assigned genitive Case. The CGs below license either a nominative (a) or an accusative Case marked subject, similar to inflected clauses and ECM constructions (c), respectively:

(11)   a. Jane expected to win the game, she being the best athlete in the school.
        b. Mary worries about him being tired of the trip.
        c. She believes him to be tired of the trip.

vi.   Many of the syntactic restrictions on the subject of a DP and on the subject of a poss-ing are the same. As the examples below indicate, CGs (c) are quite unlike regular DPs (a) and poss-ing (b), in that they freely allow complex subjects which have PPs or full relative clauses as complements:

(12)   a. ? The woman at the door's books.
        b. ? John counted on the woman at the door's reading the instructions.
        c. John counted on the woman at the door reading the instructions.

(13)   a. ?The player who struck out's bat
        b. ?The fans counted on the player who struck out's returning to the field.
        c. The fans counted on the player who struck out returning to the field.

The evidence reviewed up to this point is strong enough to support an analysis of CGs as regular clauses and not as DPs in any point of the derivation. In the next section, I

discuss evidence that has been used to support the view, which I argue against, that CGs should project into a DP at some point in the derivation.

2.3 When Clausal gerunds behave like DPs and not like clauses

As I have indicated above, CGs share several properties with regular clauses that distinguish them from DPs and, in most cases, from poss-ing as well. However, there are two facts about the distribution of CGs that show exactly the opposite picture, in which they pattern away from regular clauses and behave like DPs and poss-ing.

First, unlike other clausal complements below (a) (except indirect questions as in (b)), CGs constructions do occur headed by a preposition in a position subcategorized for by a verb (c). In that respect, CGs behave like poss-ing (d) and regular DPs:

(14)   a. *Mary talked about (that) John moved out.

       b. Mary talked about why John moved out.

       c. Mary talked about John moving out.

       d. Mary talked about John's moving out**.**

Reuland (1983) accounts for the distribution above by arguing that CGs are Case marked in the complement position of a subcategorized preposition. The argument goes through if indirect questions are also taken to allow Case marking. I postpone until section 6 a discussion about how to implement this special kind of Case marking within Minimalism.

Second, extraposition is usually possible with regular clauses (a), but it is not possible with CGs (b), with poss-ing (c) nor with regular DPs (d):

(15)   a. It was tragic that Paul lost the elections.

       b. *? It was tragic Paul losing the elections.

       c. * It surprised me Mary's leaving town. (Williams, 1975 (76)).

       d. * It surprised me Paul's loss.

If we assume that a Case marking distinction exists between regular clauses and CGs, we can account for the facts above. It is also necessary to accept Reuland's (1983) idea that expressions that require Case marking cannot undergo extraposition in English, in conjunction with the hypothesis that a tensed clause does not require Case. That is after all consistent with the fact that neither DPs nor poss-ing can be extraposed, because they are obligatorily Case marked.

Finally, consider two further positions where the occurrence of CGs ((a) below) and poss-ing (b) is accepted by most speakers, but where regular clauses are not accepted (c). Again, there is a straightforward account for the contrast between CGs and regular clauses if only the former can be Case marked, which seems to be the case in both situations below. First, CG occur in the subject position of direct questions with auxiliary inversion:

(16)   a. Did John kissing Mary bother her parents?
        b. Did John's kissing Mary annoy/bother her parents?
        c. *Did (that) John kissed Mary bother her parents?

Second, they may occur in the cleft focus position:

(17)   a. It was Mary leaving town that surprised me.
        b. It was Mary's leaving town that surprised me.
        c. *It was Mary to leave town that surprised me.

The facts above suggest that there is an obligatory requirement for CGs to be Case marked (I^0 as in (a) below, the main verb in (b), or a preposition in (c) and (d)):

(18)   a. *Paul showing up at the game* was a surprise to everybody.

         b. Mary favored Bill taking care of her land.

         c. Susan worried about John being late for dinner.

         d. Sylvia wants to find a new house *without Mark helping her.*

         e. Mike expected to win the game, he being the best athlete in the school.

However, adjunct cases such as (e) above indicate that CGs may not have a uniform behavior with respect to the requirement for Case marking. I suggest that the absolute CG example above is actually an instance where the embedded CG does not require Case marking. In (e) a lexical subject appears to be possible without any dependence on Case from a Case checking element. I do not address the licensing of lexical subjects in PP adjuncts and absolute clauses in detail in this paper. I assume that PP adjunct CGs behave in the same way as complement CGs. As for absolute CGs, I assume that they are clearly different from other types of CGs in how they allow overt subjects. There is evidence from Romance languages (French, Caribbean and European Spanish, and Italian) suggesting that appositive/absolute constructions license lexical subjects more freely than other non-finite clauses (cf. Torrego, 1998).

3 Reuland (1983)

Considering the behavior of CGs described in Section 2, Reuland (1983) proposes a GB account of CGs in which he argues these constructions are clauses that project up to IP. However, his account is grounded on the properties of Government, a concept that has been dispensed with in Minimalism. He emphasizes the need to answer the following questions:

(19)   i. How is Case assigned to the lexical subject of CGs?

         ii. Why can lexical NP alternate with PRO?

         iii. What explains the ways in which anaphors and pronouns in the subject position of this construction interact with Binding Theory?

The most relevant features of Reuland's analysis for the proposal developed here are:

(20) i. There are 2 kinds of clauses: tensed or infinitival, with marking realized on the inflection.

ii. Tensedness and finiteness are separate parameters.[3]

iii. Finiteness is realized by AGR − the agreement marker − which is syntactically present in the Infl of a finite clause and instrumental in the assignment of Case to the subject.

iv. CGs are taken to be tenseless finite clauses, thus [-TENSE, +AGR].[4]

v. *-Ing* in CGs is a nominal agreement marker appearing in Infl that realizes the properties usually associated with AGR.

vi. Case-marking follows GB: NP has Accusative Case if governed by V or P and Nominative Case if governed by Infl [+AGR].

AGR has two relevant properties: (i) it is nominal (its feature matrix is simply [N]); (ii) it assigns Case by transmission. In tensed clauses the presence of a [+tense] feature causes AGR to be assigned Case; this case can then be transmitted to the subject. In tenseless clausal gerunds there is no [+tense] feature to assign Case to AGR, so AGR has to be licensed by a higher domain. The subject can be lexical only if AGR is licensed, allowing Case transmission to apply.

In the current proposal I will try to answer the same major questions posed by Reuland. However, I will dispense with the concept of Government entirely. The only aspect of Reuland's analysis that will be required for the analysis implemented here is the idea that the head of a CG (I^0 for Reuland, T^0 here) carries a special feature that is instrumental in the assignment of Case to the subject DP. I assume with Reuland that such a feature is realized by the AGR marker in the head of the CG.

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[3] As pointed out by Reuland, other languages have been taken to have tensedness and finiteness as separate parameters (cf. George and Kornfilt (1981) for Turkish; Rouveret (1979) and Zubizarreta (1980), for Portuguese).

[4] Except for *while -ing* clauses, as argued by Reuland (1983).

3.1 Clausal Gerunds are bare TPs

Since CGs behave like regular clauses in many respects, arguing that they are CPs would be the simplest analysis. However, two important pieces of evidence suggest that there is no CP projection available in CGs, as proposed by Reuland (1983). First, they do not allow the occurrence of complementizers, differently from finite and *to*-infinitive clauses:

(21)   a. Ann wants very much for Mike to work at home.
        b. Ann wants very much (*for) Mike working at home.

(22)   a. Mark prefers that Mary travel with him.
        b. Mark prefers (*that) Mary traveling with him.

Second, CGs can never occur as indirect questions; that is, short wh-movement is always excluded (b' to e'):

(23)   a. John didn't remember [to buy groceries].
        a'. John didn't remember [what to buy t].
        b. John didn't remember [buying groceries].
        b'. * John didn't remember what [buying t].
        c. John didn't remember going to New York.
        c'. *John didn't remember where going to.
        d. Joan didn't remember visiting her relatives two years ago.
        d'. *Joan didn't remember when visiting her relatives.
        e. Joan remembered [visiting her relatives because she had two extra days in NY].
        e'. *Joan didn't remember why visiting her relatives.

Given the facts above, I argue that CGs should be analyzed as bare TPs, without the projection of a CP layer. T^0 carries any tense or inflectional features that the CG may have, given that there is no separate AgrP below or above TP (Chomsky 1995, 2000).

Consider now a further piece of evidence involving A'-movement out of CGs. As seen before, long wh-movement applies freely out of CGs, either from subject or object position:

(24)   a. Linguistics is what we'd favor [him studying t]. ((a-b) from Kayne, 1981).
        b. The only one who we'd favor [t studying linguistics is John].
        c. The winter is when Sue prefers [staying at home t].
        d. They told me why they like [living in LA t].
        e. When would you favor [John studying t]?
        f. Where do you defend [Bill moving to t]?

If there were a need for an intermediate [Spec, CP] for successive cyclic wh-movement to take place, there would be no way to derive the wh-movement cases above, given the analysis of CGs as bare TPs. However, the moved constituent appears to raise directly from its base position inside the CG to the [Spec, CP] of the higher clause. That is consistent with the conception of phases in Chomsky (1999, 2000). If CG were a phase, the wh-element would need to move to the edge of that phase in order to be able to move later to [Spec, CP] of the higher clause. Chomsky argues that TPs are not phases, thus an element internal to a CG is accessible for movement without needing to move to the edge of the CG. In fact, if a CG is not a phase, it does not define an edge, either.

4 Obligatory Control in Clausal Gerunds

In this section I address the licensing of PRO in the subject position of CGs. The standard minimalist account for PRO is representational and preserves its status as an independent element in the lexicon and in the numeration, arguing that PRO is licensed by being assigned null Case (Chomsky and Lasnik, 1993; Martin, 1993, 1996; Boskovic, 1995, 1997). An alternative account takes obligatory control (OC) PRO to be just a copy created during the derivation by the movement of the NP standardly referred to as the controller (Hornstein, 1999 and references therein). Considering the conceptual advantages of the latter I apply it to account for PRO in CGs, arguing that the null subject of certain types of CGs is the residue of NP movement.

Hornstein (1999) lists a series of interpretive tests that have been proposed in the literature to support a distinction between obligatory Control (OC) PRO and non-obligatory control (NOC) PRO (cf. Williams, 1980). Then he analyzes instances of OC PRO in *to*-infinitives and *–ing* adjuncts as the result of movement.

CGs in general license non-overt subjects, which have been standardly analyzed as PRO. Furthermore, OC PRO is not restricted only to cases of CGs in PP adjuncts. By applying the tests discussed by Hornstein, we can see that four instances of CGs consistently show properties of obligatory control: (i) in the complement position of a verb (examples (b)); (ii) as the complement of a subcategorized preposition (c); (iii) in adjuncts introduced by a preposition (d); (iv) in nominative absolute constructions (e). The examples in (a) show similar instances of OC PRO with *to*-infinitives:[5]

i. OC PRO must have an antecedent:

(25)   a. *It was expected PRO to shave himself.
       b. *It was never liked PRO staying up late.
       c. *It was aimed at PRO hurting himself.
       d. *It wasn't expected PRO to start the play without PRO turning the lights off.
       e. *It was expected to start the concert soon, PRO having turned the lights off.

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[5] Tests (i-v) presented in Lebeaux (1985). Examples (a) from Hornstein (1999).

ii. The antecedent of OC PRO must be local:

(26) a. * $John_i$ thinks that it was expected PRO_i to shave himself.

b. *$Paul_i$ thinks that Mary enjoyed/preferred PRO_i shaving himself.

c. *$Peter_i$ thinks that Mary counted on PRO_i shaving himself.

d. *$Peter_i$ thought that Mary would leave without PRO_i shaving himself.

e. $John_j$ told $Peter_k$ that $Mary_m$ would arrive on time, $PRO_{?j/*k/m}$ being responsible for starting the conference.[6]

iii. The antecedent must c-command PRO:

(27) a. *$John_i$'s campaign expects PRO_i to shave himself.

b. *$John_i$'s mother favored PRO_i shaving himself.

c. *$Peter_i$'s girlfriend worried about PRO_i hurting himself.

d. *Bill's sister left without PRO_i having shaved himself.

e. $Peter_k$'s $daughter_j$ went on to college, $PRO_{j/*k}$ being the best student in the class.

iv. OC PRO only permits a sloppy interpretation under ellipsis:

(28) a. John expects PRO to win and Bill does too (= Bill win).

b. John hates PRO losing and Bill does too. (= Bill lose/*= Bill hates John losing).

c. John worried about losing and Bill did too. (= Bill lose/*= Bill hates John losing)

d. Peter left the party after kissing Mary and Bill did too. (= Bill kissed Mary)

e. Having kissed Mary at the door, Peter left the party with some friends, and Bill did too.(= Bill kissed Mary and left).

v. OC PRO <mark>cannot have split antecedents:</mark>

(29)   a. *$John_i$ told $Mary_j$ PRO_{i+j} to wash themselves/each other.

b. *$Bill_i$ knew that $Mary_j$ hated PRO_{i+j} hurting themselves/each other.

c. *$Bill_i$ believed that $Mary_j$ worried about PRO_{i+j} hurting themselves/each other.

d. *$Peter_i$ expected $Susan_j$ to break up with him without PRO_{i+j} hurting themselves/ each other.

e. PRO_{*j+k} Understanding the importance of a good education, $Peter_j$ expected his son_k to go to a good college.

vi. OC PRO <mark>only has a *de se*</mark> interpretation (cf. Higginbotham (1992), in that PRO only applies to the individual(s) referred to by the controller:[7]

(30)   a. The unfortunate expects PRO to get a medal.

b. Susan likes PRO playing games.

c. Mary worried about PRO buying a new house.

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[6] The fact that *Peter* in the higher matrix clause is marginally licensed as antecedent of the embedded null subject is related to the fact that the adjunct CG can attach either to the higher finite clause or to the intermediate one.

[7] Adjuncts introduced by a preposition and absolute constructions cannot usually be tested for the *de se* interpretation (N. Hornstein, p.c.), which requires a propositional attitude construction amenable to an analysis as below, where (b) is a predication that ascribes a reflexive property to the subject *Mary*:

(i)   a. Mary likes PRO playing games.

        b. Mary λx[x likes x play].

vii.   *Only NP* constructions (Fodor, 1975):

(31)   a. Only Mary remembered to return the book to the library.

b. Only Churchill remembers giving the BST speech. (Hornstein 1999, (4g)).

c. Only Columbus$_j$ was worried about PRO$_{j, *k}$ returning to the West Indies.

Cf.   c'. Only Columbus was worried about himself returning to the West Indies.

c''. #Only Columbus$_j$ was worried that he$_{j, k}$ would return to the West Indies.

d. Only Churchill$_j$ was congratulated after PRO$_{j, *k}$ giving the BST speech.

Cf.   d'. Only Churchill was congratulated after himself giving the BST speech.

d''. # Only Churchill$_j$ was congratulated after he$_{j, k}$ gave the BST speech.

e. PRO$_{j, *k}$ Having given the BST speech, only Churchill$_j$ was congratulated by everybody.

In the examples above, the binder of PRO must be the expression formed by *Only+NP*. Take for instance (c-d) above, which cannot be paraphrased with both interpretations available in (c''-d''). They can only be interpreted as in (c'-d'). The same interpretive restriction applies to examples (a-b) and (e).

Hornstein (1999) showed that the interpretive properties in (i-vii) above consistently applied to *to*-infinitive constructions, and argued that OC PRO in *to*-infinitives is the result of NP-movement. The same treatment can be given to all the instances of CGs that display the same interpretive properties. As a consequence, the null subject of these CGs can be analyzed as the residue of movement of an overt DP to a higher domain in order to check its Case feature. I will show later how this analysis can be coherent with the licensing of lexical DPs in the embedded subject position.

4.1 Non-Obligatory Control in Clausal Gerunds

Hornstein (1999) gives cases of CG in subject position as examples of constructions where OC PRO properties do not hold. As the examples below indicate, CGs in subject

position are the only instances of CGs where NOC PRO properties systematically hold: NOC PRO does not require an antecedent ((a) below); if it has an antecedent, the antecedent does not need to be local (b); the antecedent does not need to c-command NOC PRO (c); a strict reading of the elided VP is possible in (d); NOC PRO allows for split antecedents (e); a non-*de se* interpretation is available for NOC PRO with respect to the matrix subject (f); and finally, the binder of NOC PRO does not need to be interpreted as an *Only+NP* expression available in the matrix sentence in (g), since many other people did win the Second World War:

(32)   a. It was believed that shaving was important.

b. John thinks that it is believed that PRO shaving himself is important.

c. Clinton's campaign believes that PRO keeping his sex life under control is necessary for electoral success.

d. John thinks that PRO getting his resume in order is crucial and Bill does too.

e. John$_j$ told Mary$_k$ that PRO$_{j+k}$ washing themselves/each other would be fun.

f. The unfortunate believes that PRO getting a medal would be boring.

g. Only George Bush remembers that PRO winning the Second World War was crucial.

In Hornstein's account, instances of NOC PRO are distinct from OC PRO in that they cannot be analyzed as the residue of NP-movement. He assumes that they are instances of *pro*, in order to eliminate PRO as an element of the grammar. Standard instances of PRO are either copies left behind by NP-movement (OC PRO) or instances of *pro* (NOC PRO). If that is the case, what distinguishes *pro*-drop from non-*pro*-drop languages is not the lack of *pro* in the latter, but rather the fact that although *pro* is present across languages in general, its occurrence is much more widespread in standard pro-drop languages.

5 Binding and Clausal Gerunds

In this section I indicate that the occurrence of OC PRO in CGs is in general consistent with the behavior of these constructions with respect to binding, suggesting that the

matrix clause behaves as the binding domain for the embedded CG, when the CG is: in the complement position of a verb (a), in the complement position of subcategorized prepositions (b); in adjuncts PPs, in the complement position of a preposition (c); in absolute constructions (d). Consider first cases of pronoun binding by a referential expression in the matrix clause:[8]

(33)   a. The architects$_j$ favored [them$_{*j}$ being placed upon the investigations committee]. (Reuland, 1983: (28a)).

    b. John$_j$ counted on [him$_{*j}$ being elected] (Reuland, 1983: (74a)).

    c. John$_j$ left [without him$_{*j}$ having finished the report].

    d. [Mike and Paul]$_{*j}$ called for assistance, them$_{*j}$ being unable to fix the computer.

The examples above indicate that the subject pronoun in the embedded CG cannot be bound by the subject of the matrix clause. The four cases of CGs above are exactly the ones that display the interpretive properties of OC PRO, which was argued in the previous section to be the result of NP movement. The main motivation for NP-movement of the embedded subject in the OC PRO cases is the need for the embedded DP subject to check its uninterpretable Case feature in the domain of the matrix clause. In that respect, there is a correlation between movement and binding, since the matrix clause is not only the Case domain for the embedded CG subject, but also its binding domain.[9]

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[8] These facts about pronoun/anaphor binding in CGs were discussed by Reuland (1983). However, he shows data that suggest that CGs in PP adjuncts (c) and absolute constructions (d) do not pattern with CGs in V or P complement positions (a/b) with respect to binding. I indicate below that all these cases have a common behavior with respect to binding.

[9] Hornstein & San Martin (2000) argue for a more direct correlation between the possibility of movement and the impossibility of coreference between a pronoun in an embedded non-finite clause and a matrix DP. When there is a derivation where movement of an embedded DP is possible (e.g. yielding a null subject), inserting a pronoun in the position of that DP is more costly. The only way for the derivation to take place with a pronoun is if the pronoun is disjoint in reference from the potential antecedent in the matrix clause. The CGs discussed here provide direct evidence for that proposal, given that they allow either a null category (as the result of movement) or a pronoun in the subject position. Since movement is an option, a pronoun can only be licensed if it is disjoint in reference from a potential antecedent in the matrix clause. This

Consider now pronoun binding in the only case of CGs that displays the interpretive properties of NOC PRO, which is being analyzed as not involving NP-movement. Differently from the other occurrences of CGs, the ones in subject position allow for coreference between the embedded subject pronoun and a matrix DP. That indicates that CGs in subject position are the only ones that function as a binding domain independent from the matrix clause, which is again consistent with the movement facts, since NP-movement from these CGs to the matrix clause is not allowed:

(34)   a. John$_j$ getting good results at work encouraged him$_j$ to stay in the company.

        b. Him$_j$ getting good results at work encouraged John$_j$ to stay in the company.

Facts involving pronoun binding by a quantifier are of stronger support to this correlation, as shown below. A universally quantified DP clearly cannot bind the embedded subject in any CG analyzed here as allowing NP-movement:

(35)   a. Every player$_k$ favored him$_{j/*k}$ playing in the finals.

        b. Every employee$_k$ counted on him$_{j/*k}$ being chosen as the new manager.

        c. He/him$_{j/*k}$ being a good actor, every student$_k$ wanted to be in the play.

        d. Every student$_k$ wanted to be in the play, he/him$_{j/*k}$ being a good actor.

Subject CGs pattern with finite clauses in that they allow the quantifier in the matrix clause to bind the embedded subject, because subject CGs function as independent domains for binding, differently from other CGs:

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explains why coreference is allowed in (i). Since adjuncts introduced by *with* require an overt subject, there is no requirement for *him* to be disjoint in reference from *James:*

(i)   James$_i$ got beaten at the game, with him$_i$ stupidly letting his rivals score several times. (Adapted from Reuland 1983: (69a)).

(36)   a. Every student$_k$ said that he$_{j/k}$ studied for the exam.

          b. Him$_{j/?k}$ winning the game was important for every player$_k$.[10]

Consider now the licensing of anaphors as subjects of CGs. Consistently with the facts involving pronoun binding, anaphors (reciprocals) are licensed in at least three types of CGs that are also analyzed here as allowing for NP-movement, namely, in verb complement position (a), in the complement of a subcategorized preposition (b) and as the complement of PP adjuncts (c):

(37)   a. The architects$_i$ favored [each other$_i$ being placed upon the investigations committee] (Reuland, 1983, (29)).

          b. The architects$_i$ counted on [each other$_i$ being placed upon the investigations committee].

          c. They$_i$ both disagreed with Bill [without each other$_i$ noticing it].[11]

In the cases above, the binding domain for the anaphor is the matrix clause, which suggests once more that there is a direct correlation between the possibility of NP-movement out of a CG and the fact that the matrix clause is the binding domain in such cases.

Before I discuss absolute constructions, which may look like a problem for the generalization suggested here, consider anaphor binding in subject CGs. The examples below show that an anaphor is not licensed in the subject position of a CG that occurs in a subject position. That may be taken as one more piece of evidence for the correlation proposed here. Since the embedded CG should be an independent domain for binding, an anaphor cannot be licensed by a DP in the matrix clause, in such cases:

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[10] The fact that binding of the subject pronoun by a matrix expressions is not entirely perfect may be related to the fact that the subject CG can actually be generated with a null subject, which allows for the bound reading. What is important is that only subject CGs allow their pronoun subject to be bound by a universal quantifier in the matrix clause, differently from other CGs.

[11] Reuland suggests that anaphors in the subject position of PP adjunct CGs are in general bad. Although examples such as (c) are difficult to construct, they are considered good by most speakers.

(38)   a. *Himself getting good results at work encouraged John to stay in the company.

b. *Each other having to sing the solo frightened the boys in the extreme. (Reuland, 1983:125).

Finally, let us discuss the only case of binding with CG which does not seem to fit in the picture presented above. Absolute CGs do not license anaphors in their subject position, contrary to what might be expected. If there is a consistent correlation between the possibility of NP-movement and binding domains, absolute CGs should allow anaphors in their subject position since they allow NP movement of their subjects. However, that prediction is not borne out:

(39)   *They both disagreed with Bill, each other having already noticed (it).

One possible explanation for the unexpected behavior of absolute CGs may be the fact that anaphors are not licensed at all in the subject position of absolute CGs, independently from the fact that the matrix clause functions as the binding domain for them. This constraint may be related to the *Anaphor Agreement Effect* proposed by Rizzi (1990):

(40)   Anaphors do not occur in syntactic positions construed with agreement.

Given the effect above, Woolford (1999) claims that the impossibility of anaphors in certain positions might be used at least as weak evidence for the presence of covert agreement, in combination with other evidence. That suggests that what may rule out the occurrence of anaphors in absolute CGs is actually the fact that covert agreement may occur with their subject position, differently from other CGs. As I will suggest in the analysis of the case properties of CGs in the next section, there may be a reason to believe that this is possible, given that Case assignment to the lexical subject of an absolute CGs might occur independently from the matrix clause, differently from other

types of CGs, and that may be related to some kind of covert agreement property that only shows up in absolute CGs and maybe in subject CGs, providing a different reason for why anaphors are not licensed with subject CGs either, besides the fact that they should behave as independent domains for binding.

6 A Minimalist Approach to Clausal Gerunds

The evidence summarized in previous sections strongly supports an account of CGs as clauses. Most generative accounts of these constructions have assumed that they share with finite clauses at least part of their structure. Abney (1987), Milsark (1988) and Kaiser (1999) argue that these constructions project as VPs or IPs and are (re)categorized into an NP or a DP in the syntax, by some process of syntactic affixation, in which -*ing* is affixed or adjoined to the IP/VP projection converting it into a D/NP. That view does not eliminate the inconsistency of the account with a bare-phrase view on category projection (Chomsky 1994). In that respect, Abney and Milsark argue that the −*ing* projection is underspecified for morphological or syntactic features, and that allows the recategorization to take place. Reuland (1983) and Johnson (1988) present two similar accounts that dispense with the need for a process of syntactic recategorization/affixation. However, the latter analyses rely heavily on the properties of Government in order to account for the behavior of CGs.

In this section I propose an account of the special properties of CGs that is consistent with current views of the minimalist program (Chomsky, 1999, 2000) and captures Reuland's and Johnson's idea that they project as clauses and do not need to be converted into D/NPs in the syntax. Furthermore, the analysis in this paper dispenses with the need for any reference to the notion of Government.

6.1 Special Properties of CG

There are five empirical facts about the behavior of CGs that I try to account for in this paper (cf. Reuland, 1983, among others):

i.   The subject of a CG may be an empty category (standardly analyzed as a PRO) or a lexical DP marked with Accusative or Nominative Case:

(41) a. The manager preferred [PRO being considered for the position in the downtown office].

b. The managers preferred [them being considered for the new positions in the downtown office].

ii. CGs need to occur in Case marked positions:

(42) a.* It is expected John reading the book.

b.* John is preferred reading the book.

c.* John is impossible reading the book.

d. John reading the book was preferred.

e. I prefer John reading the book.

iii. CGs do not behave as ECM complements, which is indicated by the fact that they do not occur as complements of standard ECM verbs like *believe* nor allow raising of their subjects to the subject position of a passive structure:

(43) a. Paul is believed to be smart.

b. *Mary is believed being smart.

(44) a. Mary prefers Paul swimming in the morning.

b. *Paul is preferred swimming in the morning.

iv. CGs do not occur as complements of subject raising verbs:

(45) a. *There seems being a man in the room.

b. *John appears liking Mary.

As I will show later, properties (ii) to (iv) can all follow from the Case requirement (i) imposed on the CG.

v.   The subject position of a CG must be filled out in the derivation, either by a lexical DP that may further move, as I suggest here, or by a pure expletive *there*. In standard terms, that means that a CG of needs to check an EPP feature in the [Spec, TP]:

(46)   Bill enjoys there being many people in the party.

6.2 Conceptualizing a Derivational Account of CGs

There are two different sets of descriptive observations that can be made about the empirical data above. In both instances, I give emphasis to the role played by Case marking of the CG subject and of the CG itself. The first set of observations takes into account similar phenomena in other languages, and the second explores an alternative view on how Case checking takes place:

i.   Basque and Portuguese related facts:

CGs behave very much like infinitives in Portuguese and arguably in Basque, where infinitival clauses need to occur in a Case position in order to be licensed.[12] Some GB accounts of this phenomenon suggested that the whole subordinate clause received Case and that Case could then be transmitted to its subject. That operation was referred to as Case Percolation or Case transmission (See Ortiz de Urbina, 1989, for discussion).

Furthermore, Basque has what appears to be overt Case marking on the whole infinitive clause, whereas Portuguese displays overt person/number agreement inflection on infinitives. In Portuguese, only non-inflected infinitives display properties of OC

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[12] If this requirement does hold for Basque, it applies only to a subset of infinitival clauses (Itziar San Martin, p.c.). For detailed discussion and further references on these matters see San Martin (1999) and Ortiz de Urbina (1989) for Basque, Pires (in press) and Raposo (1987) for Portuguese.

PRO, whereas only inflected ones license a lexical DP.[13] In Basque, only structurally Case marked infinitival clauses license a lexical DP as their subjects. Both languages need special overt morphological marking (inflection or structural Case) on the infinitive as a whole in order to license a lexical DP as the subject of the infinitive. If the infinitive lacks structural Case (Basque) or inflectional morphology (Portuguese), OC interpretation is required and lexical DPs are not allowed.

CGs differ from infinitives in the languages above by the fact that they do not display any overt morphological marking for Case/Inflection. However, the Case requirement on the whole clause holds, together with the possible occurrence of a lexical subject. This might suggest that CGs may license lexical subjects in a way similar to how Portuguese and Basque infinitives do. The difference would be then that CGs carry covert morphology in order to do that (covert Case or agreement marking) whereas Portuguese and Basque have an overt counterpart for that marking.

One further question arises, though. Remember that by virtue of their overt morphology, both Basque and Portuguese display two types of infinitives. One type displays special overt morphology that licenses lexical subjects or null subjects with NOC properties (analyzed as pro). The other type lacks that overt morphology and only licenses null subjects with OC properties (standardly analyzed as PRO). If English is supposed to be analyzed in a similar way, it is necessary to assume that in an example such as (a) below the CG carries some special morphology in order to license a lexical subject, whereas in (b) it lacks that morphology entirely and licenses only a null subject with OC properties (a PRO that is analyzed in this paper as the residue of NP-movement):

(47)   a. Mary likes [her children traveling to Rome].
         b. Mary likes [PRO traveling to Rome].

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[13] Pires (1999, in press) presents an analysis of OC PRO null subjects as the residue of NP-movement in Portuguese infinitives. In general infinitives in Colloquial Brazilian Portuguese have lost their overt inflection, but they can still license lexical subjects alongside null ones, behaving similarly to English clausal gerunds.

In a representational description of the facts, that would amount to saying that English CGs optionally display covert morphology that is able to license a lexical subject in the embedded position. If that morphology is not present, NP-movement takes place so that the embedded DP can check its features in the matrix clause.

There is clearly some similarity between the behavior of English CGs and infinitives in other languages. The problem is how to distinguish a CG with a null subject from one with a lexically overt subject, given that they are morphologically identical and in general have the same distribution. I want to avoid the optionality that results from a representational view of these facts.

In order to do that, the account I propose here requires the CG to obligatorily check certain features in the course of the derivation. The CG is also able to transfer those features to its own subject. This is basically the intuition behind the process of Case transmission/percolation proposed in GB. The embedded subject can still either check its own features inside the embedded CG or it can move to the matrix clause in order to do that. However, the need for the derivation to converge imposes a restriction on the possibility of movement, as I will show in the derivation of several instances of clausal gerunds. What determines how the feature checking for subject DP is going to take place is the history of the derivation. The embedded subject can only move out (yielding a CG with a null subject and OC properties) in case the host CG has not yet checked its own features. If that has already happened, the embedded subject can only check its features internally to the CG, and freezes in its embedded position, yielding a CG with a lexical subject.

ii.   Asymmetric Case checking:

Watanabe (1993) presents a detailed analysis of structural Case checking in which after a DP checks its Case, the head that checks that Case needs to move to a higher functional position to discharge a feature of its own. For instance, when a DP checks its nominative Case in [Spec, TP], a residual feature F is created on T^0 that also needs to be checked by a higher projection (e.g. CP in the case of TP) for the derivation

to converge. If a theory like Watanabe's is on the right track, a CG should also have such a residual feature. That feature would be directly related to the need of the whole CG to occur in a Case position, Given that a CG does not project a CP, its T^0 would have to check the residual feature F on v or T^0 of the matrix clause. A slightly different view on Watanabe's account may be that Case checking is asymmetric: a functional head that checks Case needs to check Case itself, in a higher projection.

I try to implement below an account of the special properties of CGs by trying to formalize the view of percolation from GB and by using the idea of an extra (Case) feature that needs to be checked, as argued by Watanabe. Although the idea of Case percolation/transmission does not fit straightforwardly with minimalist expectations, the evidence seems to be consistent that such a process exists in the grammar. Depending on the way it is technically implemented, it may be possible to make it fully consistent with the way the grammar works in general, with respect to feature checking and derivation.

6.3 Deriving CGs

In the analysis of the second type of CGs (i.e. the ones that occur in a Case marked position) it is proposed that not only the subject of a CG, but also its (inflectional) head T^0 carries an uninterpretable Case feature that needs to be deleted. That is enough to relate two GB ideas: (i) the inflectional head of CGs carries a special feature that licenses its distribution in Case marked contexts; (ii) the derivation yields a process described in GB as Case percolation/transmission. If the NP can move out of the CG before Case feature on T^0 is checked (which must happen by the end of the derivation), a standard OC PRO construction is licensed.

In the derivational account I develop here, I try to capture the special intuitions about the behavior of CGs. First, a restriction on their distribution (they need to occur in a Case position) determines whether the derivation converges. A technical take on this requirement is to propose that the head of the CG interacts with a Case checking head in the course of the derivation. Second, the CG can potentially check the features of its own subject (crucially Case). The intuition is that the T^0 of a CG can delete the Case of its subject, preventing it from further moving and blocking the occurrence of a null subject

(as in (a) below). Third, if a landing site for a DP exists in the matrix clause and the CG itself has not yet acquired the properties necessary to check the Case feature of the embedded subject, the embedded subject can check its Case feature by moving to the matrix clause (yielding an embedded null subject with OC PRO properties as in (b)):

(48)   a. I prefer John swimming.

         b. John prefers swimming.

Crucially, since I analyze instances of OC PRO as the result of NP-movement, I assume that theta roles can be satisfied through movement and not only by first merge (cf. Boskovic, 1994; Lasnik, 1995; Hornstein, 1999; Boeckx 2000b). The idea is that θ-roles can also be assigned in the course of the derivation, and are not satisfied in a configuration, but in a set of configurations (i.e. transformationally).

Here are the properties the head of a CG (its T^0) displays in the derivational account proposed below:

(49)   i)   It carries an uninterpretable Case feature that needs to be checked.

         ii)   It has an EPP feature that needs to be checked.

         iii) It enters the numeration as ϕ-defective.

         iv)   When DP merges in the Spec TP of the CG to check the EPP feature, the DP transfers its ϕ-features (by agree) to T^0.

         v) T^0 of a CG cannot check the uninterpretable Case feature of the embedded subject while its own uninterpretable Case feature is still unchecked.

Property (i) is a direct formalization of a special property of CGs: the fact that they need to occur in Case marked position. In minimalist terms, CGs share only one property with regular DPs: they have a Case requirement that needs to be satisfied for the derivation to converge. The idea that the inflectional head of a CG is in some way special has been previously translated into the idea that it carries a [+N] or an AGR feature that has a nominal import (Reuland, 1983; Abney, 1987; Milsark, 1988).

Properties (ii) and (iii) do not represent any departures from a standard minimalist view, and they relate the behavior of clausal gerunds to the one of *to*-infinitives.

Properties (iii) and (iv) are necessary only because of the implementation of feature checking in Chomsky (1999). Under that implementation, functional heads (v and T) carry only ϕ-features and not a Case feature. The uninterpretable Case feature of a DP is deleted after that DP enters into agree/match with a functional head that is ϕ-complete. Both the head and the matching DP have to be active in order to enter into an agree/match relation. Only uninterpretable features (ϕ-features on functional heads and Case on DPs) activate a probe and a goal, thus inducing Agree. In finite clauses once the functional head T^0 (the probe) and the subject DP (the goal) enter into agree/match, the probe should delete the uninterpretable Case feature of the goal DP, whereas the ϕ-features of probe and goal should match. In the case of clausal gerunds, T^0 is ϕ-defective, but it can still attract its subject DP in order to satisfy its EPP requirement. It is very likely that the transfer of ϕ-features may then take place as stated in (iv). If EPP is also checked under an agree/match relation, it is possible for the matching relation to have as a side effect a transfer (through match) of the ϕ-features of DP to T^0. A question arises why that cannot happen in other instances of EPP checking. A straightforward explanation is that T^0 of a CG may get the ϕ-set of a DP in its Spec because it has a nominal character, formalized here by the fact that it carries an uninterpretable Case feature that needs to be checked (property (i)).

Property (v) can be seen simply as a direct consequence of property (i). Once T^0 and the DP enter into match/agree, they should undergo the different feature interactions. However, property (v) ensures that T^0 of a CG does not enter into agree/match with the DP in its Spec for the purpose of Case checking, at long as the uninterpretable Case feature on T^0 is itself still unchecked. After the uninterpretable Case feature of the embedded T^0 has been checked in the derivation, T^0 is able to check the Case feature of its subject DP, as I will show in the derivations below.

Consider now the distribution of clausal gerunds, with its proposed derivation. I represent the head of the embedded CG as AGR, just to make its status clear in the

different derivations. First, take an instance where the subject of the CG moves to the matrix clause:

(50)   John prefers swimming.

[$_{TP2}$ John [$_T$ [$_{vP}$ ~~John~~ [$_{v'}$ prefers [$_{VP}$ ~~prefers~~ [$_{TP1}$ ~~John~~ [$_T$ AGR [$_{vP}$ ~~John~~ swimming]]]...

ϕ/~~C~~/~~EPP~~   2θ ~~C~~$_{AGR}$ ~~EPP~~/ϕ C$_{AGR}$ θ/C

AGR starts up as ϕ-defective and with an uninterpretable Case feature. As John merges in Spec TP1 for EPP checking, it transfers its ϕ-set to AGR by Agree. Since both probe and goal still have uninterpretable Case features, Case checking cannot take place. As the matrix v enters the derivation, it attracts the embedded DP *John* and assigns a second θ-role to it. The matrix then Agrees with AGR and checks the uninterpretable Case feature on AGR. Finally, *John* moves to [Spec, TP2] to check its own uninterpretable Case feature and the EPP feature on T2. The copies can be generated and deleted according to the Copy Theory of Movement (Chomsky, 1995) along the lines suggested by Nunes (1995).

Notice that if the matrix v (prefer + v) deleted the Case of AGR before *John* moved out of [Spec, TP1], the matrix subject θ-role and the EPP feature in [Spec, TP2] would not be checked, since John would no longer be able to move out of the embedded clause (given that AGR can check the Case of the CG subject after its own Case has been checked).

Consider now a derivation in which the whole CG moves to the subject position of the matrix clause. Given the implementation here pied piping of the whole CG takes place to check the EPP feature in the [Spec, TP] of the matrix clause:

(51)   John swimming was preferred.

[$_{TP2}$ John swimming [$_{T'}$ [$_{vP}$ [$_{v'}$ θ [$_{v'}$ was preferred [$_{TP1}$ ~~John~~ [$_{T'}$ AGR [$_{vP}$ ~~John~~ [$_{v'}$ ~~swimming~~]]...

    φ/~~C~~   ~~EPP~~/~~C~~$_{AGR}$ ~~EPP~~   C$_{AGR}$

   θ/C

The passive morphology eliminates the matrix external θ-role and the accusative Case position in the matrix [Spec, vP]. T2 matches/agrees with T1, and T1 raises, pied-piping the whole clause to check EPP in [Spec, TP2]. T1 gets its own Case checked and is now able to check the Case of its subject *John*. This example shows one instance where I formalize an account of Case transmission. Notice that other cases of CGs in subject position are handled the same way:

(52)   John swimming is/seems impossible.

The unavailability of this process with *to*-infinitives explains why examples as the ones below are ungrammatical:

(53)   a. * John to swim is preferred.
        b. * John to swim is/seems impossible.

Since *to*-infinitives cannot be assigned Case, it cannot further transfer Case to its embedded subject (*John*) and the derivation crashes.

Take now an ungrammatical example that is descriptively ruled out by the fact that the embedded CG is not being assigned Case. If the NP moves out of the embedded CG and there is only one Case checking head in the matrix clause, that prevents the Case feature of the CG T^0 from being checked, and the derivation crashes, explaining why passives in general are not possible with CGs:

(54) *John was preferred swimming.

[$_{TP2}$ John [$_T$ [$_{vP}$ [$_{v'}$ θ [$_{v'}$ was preferred [$_{TP1}$ ~~John~~ [$_T$ AGR [$_{vP}$ ~~John~~ [$_v$ ·swimming]]]...

   φ/~~C~~/EPP   ~~C~~$_{AGR}$ ~~EPP~~ *C$_{AGR}$ φ/C

More specifically, the passive morphology eliminates the matrix external θ-role and the Accusative Case position [Spec$_2$, vP]. *John* raises to [Spec, TP2] where it checks its Case. Now the Case of AGR cannot be checked and the derivation crashes. This explains why T^0 needs to move to the matrix clause, pied-piping the whole clausal gerund, since there is only one Case position in the matrix clause. Pied-piping allows the checking of the matrix clause EPP feature and of the two Case features of the embedded clausal gerunds (i.e. the one in T^0 and the one in the DP).

A derivation along the same lines can account for the ungrammaticality of raising constructions with CGs:

(55) *John seems swimming.

Now consider the example below (Juan Uriagereka, p.c.). Depending on the way θ-requirements are satisfied throughout the derivation, it is not clear what rules out a case like:

(56) * [$_{TP2}$ There preferred [$_{TP1}$ a man [$_{vP}$ ~~a man~~ swimming]].

If θ-roles are features, nothing should prevent the matrix θ role from being assigned through Agree, allowing the checking DP to stay in situ (i.e. in the embedded subject position), whereas *there* checks the EPP feature of the matrix clause. There are different ways to handle this problem. One way may be assuming that θ-roles are like EPP features, and require that the goal merge in the θ-position, in order for the θ-role to be assigned. This is consistent with the view that θ-roles are not features, and multiple θ-roles are checked in different configurations (cf. Boeckx 2000b, p.c.). An alternative would be to have *there* merge in the embedded CG, presumably for economy reasons (as

pointed out by N. Hornstein, p.c., In that case, *there* must move via the matrix θ-position before it ends up in [Spec, TP2]. If we further assume that *there* cannot move into the matrix θ-position, the derivation crashes.

See now how a standard case of a CG with a lexical subject can be derived:

(57) I prefer John swimming.
  [TP2 I [T [vP [v' ~~I~~[v' prefer [VP ~~prefer~~ [TP1 John[T' AGR [vP ~~John~~[v' swimming]]]...
  θ/~~C~~/EPP   θ   ~~C~~AGR   ~~EPP/C~~ CAGR   θ/C

The embedded CG checks the propositional internal θ-role of the matrix verb. Matrix *v* matches/ agrees with T1, deleting its Case feature. Therefore, T1 can now check the Case feature of the embedded DP *John* in situ. *I* merges in [Spec, *v*P] where it checks the matrix external θ-role and then raises to [Spec, TP2] in order to check the EPP feature and its own Case feature.

A question arises why the derivation cannot be like standard ECM as indicated below:

(58)   [TP I [T' [vP John [v' ~~I~~ prefer [v' [VP ~~prefer~~ John [TP ~~John~~ [T' AGR [vP ~~John~~[v' swimming]]...
  θ/~~C~~/EPP   ~~C~~   θ   2θ   ~~EPP~~ *CAGR   θ/C

I have already indicated that CG do not display properties of ECM. Let us see now how to account for this impossibility given the derivational implementation here. *John* raises to the matrix clause to check its own Case (as in ECM constructions), but the derivation crashes because the Case feature on AGR cannot be checked.

In sum, by proposing certain properties based on the special Case requirement on CGs the derivational implementation above accounts for a range of occurrences of clausal gerunds that was not entirely explained by any single account in the GB literature.

Furthermore, it dispenses with the notions of recategorization and Government that were necessary in most of those accounts.[14]

7 Properties of Gerunds as Complements of Perception Verbs

In this last section I address the behavior of gerund complements of perception verbs (henceforth PVC). Some properties of gerunds as PVCs indicate that they are structurally different from CGs (cf. also Akmajian, 1977). I argue that these complements are even more structurally defective than CGs and should be analyzed as bare vPs. This is supported by the different properties below. I leave as an open question whether they project simply as vPs or display an aspectual projection above vP. Notice that many of these properties are shared by bare infinitives, which supports the idea that both types of constructions have the same structure:

i.   Like CGs, they never contain any overt complementizer (*that, for-to*)

ii.   They do not accept modals nor perfective have –en (a) (Fillmore, 1963), although they do occur in passive structures (b). This contrasts with the behavior of gerund complements of other verbs (analyzed here as CGs), which accept both passive and perfective morphology:

(59)   a. *I heard Francis having talked to Silvia.
       b. Ana saw Silvia being kissed by Paul.
       c. Mark regrets Susan having moved/moving to Chicago.

iii.   They allow their subject to raise to the subject of matrix passive verbs (a'), differently from CGs (b'), which indicates both that PVCs do not need to occur in a Case marked position and that they behave like regular ECM complements:

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[14] Pires (in preparation) addresses in detail the issue of why pronominal subjects of CGs usually display accusative Case, which might be related in the current analysis to the fact that the embedded CG can only check the Case of its subject after having its own Case checked by the matrix clause.

(60)   a. Mary saw Paul leaving the house.

       a'. Paul was seen leaving the house.

       b. Mary favored Paul taking care of the house.

       b'. *John was favored taking care of the house.

iv.   They do not allow for null subjects as CGs do:

(61)   a. *I heard talking on the phone. (=I heard myself talking on the phone).

       b. I like talking on the phone.

v.   They do not allow a pure expletive as their subject, contrary to CGs, which indicates that do not have an EPP requirement:

(62)   a. *Bill saw there being many people in the party.

       b. He counts on there being many people in the harbor.

The facts above indicate on the one hand that gerund PVCs are structurally more defective than CGs, and on the other that they do not carry any of the special properties associated with CGs and discussed before. The fact that PVC gerunds do not display such special properties appears to depend on the fact that they do not project up to TP. This supports the derivational account proposed here for CGs, which relies almost entirely on the special status of the CG clausal head (T^0) head in order to work properly.[15]

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[15] Pires (to appear) identifies and analyzes yet another class of gerunds, dubbed TP-defective gerunds, which occur as complements to verbs such as *try* and *avoid:*
   (i)   Sue tried/avoided (*Paul) talking to Ana.
   Different from the PVCs and clausal gerunds discussed here, TP-defective gerunds never license an embedded overt subject. This is so because they can neither check the Case of an overt subject as CGs do, nor license it through ECM, different from PVCs.

8 Conclusion

This paper reviewed the special properties of clausal gerunds (CGs) and proposed a minimalist account for them that is directly dependent on their need to occur in Case marked positions. It was argued that these constructions are bare TPs and there is no need for them to be (re)categorized into a D/NP in the derivation. This proposal also dispensed with the concept of Government present in GB accounts of the same facts. The empirical payoff was mainly that this account provided a deterministic implementation of the licensing of either null or lexical subjects in Case marked CGs without the need for covert morphological distinctions or optional Case marking. Furthermore, it provided empirical evidence for an analysis of OC PRO in CGs as the result of NP movement. Finally, it was indicated that gerunds in the complement of perception verbs do not project as TPs (they are vPs) and therefore do not display any of the special properties associated here with the status of the head of a CG.

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