# Clausal and TP-Defective Gerunds: Control Without Tense[1]

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In this paper I explore the idea that there is a class of complement gerunds that do not project a TP, contrary to acc-*ing* and poss-*ing* gerunds. I address the consequences of this hypothesis for an approach to restructuring predicates and for theories of control.

Most analyses of gerunds (e.g. Abney 1987, Kaiser 1999, Milsark 1988) have provided mechanisms to distinguish at least between acc-*ing* gerunds (1a) and poss-*ing* gerunds (1b), which I do not discuss here.

(1) a. $\text{Mary}_j$ worried about Paul/him/$\text{PRO}_j$ coming to dinner.
b. Paul worried about John's/his moving to LA.

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It has been argued that acc-*ing* gerunds project at least up to TP (Reuland 1983, Johnson 1988, Pires 2000). I discuss here several issues with respect to acc-*ing* gerunds, but I focus on a different class of gerunds, which I argue do not project a TP.

## 1 A Class of Gerunds without a TP

The gerund complements of aspectual verbs (e.g. *start, stop, continue* as in (2)) and of verbs such as *try* and *avoid* (3) seem to belong to a class of gerunds that is distinct from the acc-*ing* gerunds found as complements of other verbs. Furthermore, as I will show later, these complement gerunds, which I call TP-defective gerunds, cannot be collapsed with gerunds that are complements to perception verbs.

(2) Mary started/finished/continued reading the newspaper.

(3) a. $\text{Bill}_j$ tried [$e_j$ talking to his boss].
b. $\text{Philip}_j$ avoids [$e_j$ driving in the freeway].

I present two empirical arguments that support the view that TP-defective gerunds are distinct from acc-*ing* gerunds in that they have a defective T(ense)P. I assume here a non-split TP, given that a fine-grained structure will not bear directly on the points I want to make. I will address the consequences of two possible analyses of TP-defective gerunds. First, I consider the possibility, which I refer to as the weak hypothesis, that TP-defective gerunds do project a TP, but the head of their TP is specified as [–Tense], in the sense of Stowell (1982). Second, I consider a strong hypothesis, that TP-defective gerunds do not project a TP at all. Chierchia (1984) entertained a more radical version of the latter hypothesis in a different framework, by accounting for the properties of TP-defective gerunds in terms of a syntactic-semantic distinction. I will dispense with the semantic distinction and focus on a syntactic account of their defectiveness.

### 1.1 No independence in terms of tense and aspect specification

The first argument supporting the existence of a distinct class of TP-defective gerunds is the fact that they do not have a tense and aspect specification independent from the matrix clause. First, they do not allow for the occurrence of embedded temporal adverbials distinct from the matrix clause (4), a possibility that exists with acc-*ing* gerunds (5):

(4) a. * $\text{Bill}_j$ tried today [$e_j$ talking to his boss tomorrow].
b. * $\text{Philip}_j$ avoided last night [$e_j$ driving in the freeway this morning].

(5) $\text{Mary}_j$ worried (yesterday) about Paul/him/$e_j$ coming to dinner (tonight).

The impossibility of independent temporal adverbials with TP-defective gerunds can be explained if temporal adverbials adjoin to TP. If these gerunds do not project a TP, there is no position where a temporal adverbial independent from the matrix clause can be attached.

Second, TP-defective gerunds do not easily allow for perfective morphology (6), differently from acc-*ing* gerunds (7)-(8).

(6) a. * Mark tried [having convinced his friends].
b. * John will avoid [having talked to Mary].

(7) a. Mark counted on [having convinced his friends].
b. John will remember [having talked to Mary].

(8) a. Ann counts on [John having finished the exam by now].
b. Paul remembers [having been to Chicago].

### 1.2 No projection of a lexical subject

The second argument supporting the view that TP-defective gerunds do not project a TP is the fact that they do not allow for a lexical subject, either a regular DP or an expletive *there* (9), both possible with acc-*ing* gerunds (10).

(9) a. * Clark tried [Mary taking care of the finances].
b. * Mary avoided [*there* being too many people in the party].

(10) a. David prefers [Mary taking care of the finances].
b. Paul insists on [*there* being many people interested in his inventions].

Consider the two hypotheses suggested here to interpret this fact. Under the weak hypothesis, TP-defective gerunds have a [Spec, TP] position, but it does not license structural Case for an overt DP. That hypothesis accounts for the distinction between TP-defective and acc-*ing* gerunds in terms of their structural Case licensing properties, which is still an argument in favor of some sort of deficiency of the TP projection of a TP-defective gerund. By the strong hypothesis, the impossibility of an overt lexical subject in TP-defective gerunds is the result of their lacking a TP projection altogether, preventing Case from being assigned to their subjects.

## 2 Restructuring Gerunds?

Given the facts above, one could take TP-defective gerunds to be a class of restructuring predicates (RPs). This is consistent with the fact that the properties of TP-defective gerunds extend to gerunds in the complement position of aspectual verbs (11), a class of verbs usually analyzed as selecting restructuring predicates.

(11) Mary started/finished/continued reading the newspaper.

There are many different approaches to restructuring predicates in the literature. I consider here the one proposed by Wurmbrand (1998) to restructuring infinitives (RI). Wurmbrand characterizes restructuring infinitives in terms of a cluster of properties. Let us consider them in turn and see whether they extend to TP-defective gerunds.

First, restructuring infinitives lack complementizer properties. This property seems to extend to gerunds in general, and not only to TP-defective gerunds. Two pieces of evidence indicate that there is no CP projection available in acc-*ing* gerunds, as proposed by Reuland (1983). That evidence extends to TP-defective gerunds. First, they do not allow the occurrence of complementizers (12a), differently from *to*–infinitives and finite clauses (12b-c):

(12) a. Ann avoided (*for) working at home.
b. Ann wants very much for Mike to work at home.
c. Mark prefers that Mary travel with him.

Second, TP-defective gerunds can never occur as indirect questions; that is short wh-movement is always excluded (13), similarly to acc-*ing* (14) and contrary to *to*-infinitives (15).

(13) a. John didn't avoid [buying groceries].
b. * John didn't avoid what [buying t].

(14) a. John didn't remember [buying groceries].
b. * John didn't remember what [buying t].

(15) a. John didn't remember [to buy groceries].
b. John didn't remember [what to buy t].

Consider now an apparent problem for the argument that gerunds do not project a CP. Long wh-movement applies freely out of TP-defective gerunds (16) (see Reuland 1983 for acc-*ing* (17)).

(16) What did you try [reading t yesterday]?

(17) a. What do you prefer [studying t]?
b. Who do you want [t taking care of the company]?

Given that gerunds lack a CP projection, the moved constituent in (16)-(17) raises directly from its base position inside the embedded gerund to the [Spec, CP] of the higher clause. That is consistent with the conception of phases in Chomsky (1999, 2000). If gerunds were phases, 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. That applies straightforwardly to acc-*ing*, argued to be TPs by Reuland (1983), Johnson (1988) and Pires (2000). The argument extends to TP-defective gerunds, argued here to be even more structurally defective than acc-*ing* gerunds. Therefore, an element internal to a gerund is accessible for movement without needing to move to the edge of the gerund projection. In fact, if a gerund is not a phase, it does not define an edge for purposes of movement.

The second property of restructuring infinitives pointed out by Wurmbrand (1998) is the fact that they carry no tense information independent from the matrix clause. As the

tests with temporal adverbials in section 1.1 indicate, TP-defective gerunds seem to behave in a similar way.

Nevertheless, there are three other properties of RIs which do not seem to hold in the case of TP-defective gerunds. First, Wurmbrand (1998) argues that RIs do not have an embedded structural (accusative) Case position. She shows that the object of a RI raises (overtly or covertly) to the higher verbal domain in order to check its accusative Case. For instance, this is supported by long object movement from RIs in German (Wurmbrand 1998:24(5)):

(18) weil [der Lastwagen und der Traktor] zu reparieren versucht wurden/*wurde.
since [the truck and the tractor]-NOM to repair tried were/*was
'since somebody tried to repair the truck and the tractor.'

Still, English TP-defective gerunds do not allow for the kind of long-distance object movement shown by Wurmbrand for German RIs. That suggests that TP-defective gerunds have an embedded accusative Case position, contrary to Wurmbrand's RIs. In fact, there doesn't seem to exist similar supporting evidence for this property of Wurmbrand's analysis with respect to English *to*-infinitives either.

Second, Wurmbrand argues that RIs lack [Spec, *v*P] altogether, and are also unable to license a syntactic subject. The absence in a RI of a position for an external argument rules out not only the possibility of an overt lexical subject, but also of a PRO in the embedded RI. Finally, Wurmbrand argues that *try*-type RIs in languages like German, Dutch and Italian involve semantic control along lines similar to what has been proposed by Chierchia (1984). That is, the embedded external argument position is eliminated, preventing the occurrence either of an embedded overt subject or of a PRO, as shown in (19) with an English example.

(19) [$_{CP}$[$_{TP}$ John [$_{vP}$ ~~John~~ [$_{VP}$ tried [$_{"VP"}$ to visit [$_{DP}$ his sister]]

In this respect, Wurmbrand argues that non-restructuring infinitives (NRIs) project an embedded PRO subject (syntactic, non-obligatory or variable control), whereas RIs do not involve an embedded syntactic subject (semantic/obligatory control). In support of that distinction, Wurmbrand shows for instance that in German RIs there is no (PRO)-argument available as an antecedent for embedded anaphors (20), differently from NRIs (21) (Wurmbrand 1998:26(7)).

(20) *…weil {sich} der-NOM Fisch {sich} vorzustellen versucht wurde. RI
since self the fish-NOM self to-imagine tried was
' ...since someone tried to recall the image of the fish'

(21) Es wurde versucht [PRO$_j$ sich$_j$ den Fisch mit Streifen vorzustellen].NRI
It was tried [PRO self the-ACC fish with stripes to-imagine]
'People tried to imagine what the fish would look like with stripes.'

On the one hand, there is no evidence that this contrast extends to English TP-defective gerunds. On the other hand, there seems to be evidence from Theta theory

supporting the view that TP-defective gerunds do project an external argument position, given the fact that they assign an external theta-role independent from the matrix clause. A similar argument has actually been made by Bošković (1994) for RIs (contra Wurmbrand). This indicates that although TP-defective gerunds do not seem to project to a TP, they do project [Spec, *v*P] where the embedded external θ-role and accusative Case obtain. That distinguishes them from the class of RIs discussed by Wurmbrand (1998) and others. In this respect, the structure of a TP-defective gerund should be as in (22):

(22) $[_{CP}[_{TP}$ Mary $[_{vP}$ ~~Mary~~ $[_{VP}$ tried $[_{vP}$ PRO $[_{VP}$ calling $[_{DP}$ her friends]]

Still, if TP-defective gerunds do have their own external argument independent from the matrix clause, how come it cannot be overt, as is the case with acc-*ing* gerunds? Furthermore, the null-subject (represented until here as PRO) of TP–defective gerunds can only have obligatory control properties. I account for these facts in section 4.

## 3 Control and Null Case

As seen in the previous section, TP-defective gerunds do not allow for an overt subject, although they do license their own external argument in the form of a null subject. The alternative that immediately comes to mind given most Principles & Parameters accounts is to treat this null subject as PRO, as in (22). I also provided evidence suggesting that TP-defective gerunds either do not project to a TP at all (strong hypothesis), or if they do project to a TP, this TP does not allow for a temporal specification distinct from the matrix clause (weak hypothesis). These properties may be a roadblock for the most widely accepted P&P account for the distribution of PRO: the null Case theory (Chomsky & Lasnik 1993).

The strong hypothesis poses a major problem for the version of the null Case theory proposed in Chomsky and Lasnik (1993), who argue that non-finite clauses assign null Case to their PRO subjects in [Spec, TP] (see also Chomsky 1999, 2000): If TP-defective gerunds do not project a TP and still need to license PRO, there is no position where null Case can be assigned.

Martin (1996) has offered arguments for a revision of the null Case theory that does not eliminate the need for null Case, but restricts its occurrence and the possibility of licensing PRO to non-finite constructions specified as [+Tense] in the sense of Stowell (1982). According to Stowell, the event-time of a control infinitive as in (23a) is unrealized with respect to the event-time of the matrix clause. Bresnan (1972) refers to that tense as a possible future. Stowell argues that raising (23b) and ECM infinitives (23c), on the other hand, do not have an internally specified unrealized tense, and may vary among different tense specifications (past, present or future), as determined by the properties of the matrix verb. Martin emphasizes that distinction, but proposes a slight revision in the tense interpretation of the latter by arguing that the time/interval denoted by a raising/ECM infinitive must actually coincide with the matrix event-time. Given this interpretive distinction, Stowell argues that control infinitives have a feature [+Tense], which in Martin's account checks the null Case of PRO, whereas ECM/raising infinitives have a feature [–Tense], which cannot check null Case.

(23) a. John decided [PRO to leave].
b. Ann seemed [t to be interested in the new job].
c. Bill believed Mary [t to be a good friend].

The strong hypothesis is also a problem for Martin's (1996) revision of the null Case theory, because TP-defective gerunds (24a) pattern with subject control infinitives in that there are two external θ-roles to be assigned: one in the embedded clause and the other one in the matrix clause. In this respect, the null subject in the embedded clause must be a PRO, given that both in Martin's and in Bošković's (1997) theory a version of the θ-criterion is enforced, and each θ-role must be assigned to a different argument. Although this pattern also extends to acc-*ing* gerunds too (24b), only TP-defective gerunds lack a position where PRO can be assigned null Case, under the hypothesis that they do not project a TP.

(24) a. Bill tried/continued [$_{TP}$ PRO talking to his boss].
b. John prefers [$_{TP}$ PRO working at night].

The weak hypothesis also creates difficulties for a tense-based null Case theory. However, in this instance the problem may not be restricted only to TP-defective gerunds, and partly extends to the analysis of acc-*ing* gerunds. Stowell (1982) argues that the tense of gerunds is completely malleable to the tense of the matrix clause, contrary to control infinitives. That is, instead of having a fixed time frame with respect to the matrix verb, gerunds can vary their tense specification according to the properties of the matrix verb, as in (25). In this respect, (acc-*ing*) gerunds differ from control infinitives in that they do not have a fixed event-time with respect to the event-time of the matrix clause.

(25) a. Jenny remembered [bringing the wine]. (Stowell 1982 (8b)).
(= She remembered a past event of bringing the wine).
b. Jim counted (yesterday) on [watching a new movie (tonight)].
(= He counted on a future event of watching).

Given the above, Stowell proposes that gerunds in general carry a [−Tense] specification. This fact alone offers a problem for a version of the null Case theory that relies on a [+Tense] specification in order for PRO to be licensed. Although both acc-*ing* and TP-defective gerunds license a subject PRO, a [−Tense] specification would prevent null Case from being assigned to PRO. That difficulty may be even greater with TP-defective gerunds, because they do not allow for any kind of temporal specification distinct from the matrix predicate (26), in contrast to acc-*ing* gerunds (25), as already discussed in section 1.1. In this respect, TP-defective gerunds are extremely similar to raising and ECM infinitives with respect to their tense properties, under Martin's (1996) view that the time/interval denoted by a [−Tense] (raising or ECM) infinitive must actually coincide with the matrix event-time.

(26) *Philip avoided last night [PRO driving on the freeway this morning].

A restriction in terms of temporal specification also exists for *to*-infinitives that are complements to restructuring predicates (see Wurmbrand 1998). However, notice that this restriction sometimes is not as strong as it is with a corresponding TP-defective gerund. For instance, a predicate like *try* that usually requires a partial overlap between its own event-time and the event-time of the embedded *to*-infinitive might not allow for examples like (27b). However, (27b) is still possible with a specific reading in which 'Jim took some step yesterday to be able to take a flight today at Dulles'. The corresponding gerund (27c) is significantly degraded, supporting the view that TP-defective gerunds do not allow for any independence in terms of event-time specification with respect to the matrix predicate, contrary to the corresponding *to*-infinitive examples.

(27) a. Jim decided yesterday [to take a flight today at Dulles].
b. # Jim tried yesterday [to take a flight today at Dulles].
c. *? Jim tried yesterday [taking a flight today at Dulles].

The facts above make a strong case for Stowell's (1982) argument made that gerunds are [−Tense], different from control infinitives. This is even more so with TP-defective gerunds, which do not allow for any kind of tense specification distinct from the matrix predicate. Combined with the need for these gerunds to assign an external θ-role, both accounts considered here for their tense restriction (lack of a TP or occurrence of a [−Tense] head) undermine versions of the null Case theory that postulate the existence of a PRO whose null Case must be checked in [Spec, TP].

Further problems of a more conceptual nature arise with respect to the null Case theory or any other theories that rely on the existence of PRO. First, besides the need to account for the distribution of PRO, extra operations are necessary to identify the antecedent of obligatory control PRO (OC PRO). Second, these theories need specific mechanisms to distinguish OC PRO from non-obligatory control PRO. Finally, certain questions arise with respect to how Control relates to Case theory. One may wonder why it is that Null Case is restricted to just one type of null argument (PRO), not even extending to *pro*, a null argument that can co-exist with PRO in many languages other than English. Also, PRO can only occur in [Spec, TP], where it gets null Case, whereas other overt and non-overt (*pro*) arguments can check different types of structural Case (accusative, nominative) depending on the position where they occur. Such facts indicate that null Case and PRO are extremely specific devices in the grammar, and their existence may be at odds with the goals of P&P and especially the Minimalist Program to devise overarching principles that account for a wide range of phenomena at the same time, without overlapping unnecessarily with other mechanisms of the grammar. In the next section I apply to gerunds a theory that derives PRO as the result of DP-movement (Hornstein 1999, 2000), circumventing most of these conceptual problems and the empirical problems that gerunds pose for the null Case theory.

## 4 Control as Movement

I return now to the two other properties of TP-defective gerunds. First, although TP-defective gerunds have an embedded external argument, why is it that they only allow

for a null subject (28) (PRO in the null Case theory), contrary to acc-*ing* gerunds, which allow either an overt or a non-overt subject (29)?

(28) a. John tried [PRO swimming].
b. * I tried [John swimming].

(29) a. I prefer [PRO staying at home].
b. I prefer [Mary staying at home].

Second, the null subject of TP-defective gerunds can have only obligatory control properties, similarly to acc-*ing* gerunds (see Pires 2000). For instance, the null subject of a TP-defective gerund requires a local c–commanding antecedent (30a) and it does not allow for split antecedents (30b). Furthermore, the interpretation of the ellipsis material in an example like (30c) only allows for a sloppy reading under ellipsis.

(30) a. *Paul$_i$ thinks that Mary tried PRO$_i$ shaving himself.
b. *Bill$_i$ knew that Mary$_j$ hated PRO$_{i+j}$ hurting themselves/each other.
c. *John$_i$ tried PRO$_i$ leaving early and Bill did too (= Bill leaving early).

In order to account for the facts above I assume a movement analysis of control (Hornstein 1999, 2000). The subject of the matrix clause in (31) is first merged in the external θ-role position of the TP-defective gerund, but it cannot be Case marked within the embedded clause. Under the strong hypothesis discussed before, TP-defective gerunds do not project a [Spec, TP] where Case can be assigned to the embedded external argument.

(31) [$_{CP}$ [$_{TP}$ Mary [$_{vP}$ ~~Mary~~ [$_{VP}$ tried [$_{vP}$ ~~Mary~~ [$_{VP}$ calling [$_{DP}$ her friends]]

Given the possibility of multiple θ-marking of an individual DP, as proposed by Bošković 1994, Lasnik 1995, and Bošković & Takahashi 1998, the embedded DP-subject (*Mary*) can move to the matrix clause in order to check its Case. It moves through the matrix external θ-role position where it is assigned a second θ-role and lands in the matrix [Spec, TP] where it finally checks its Case and freezes in place. The fact that the different argument positions are occupied by copies of the the same DP explains why the embedded subject position can only have obligatory control interpretation. Although I gloss over some details, this approach relates Case marking to ϕ-feature agreement (Chomsky1999, 2000), instead of the tense dependence assumed in the null Case theory.

This approach also explains why TP-defective gerunds do not license an embedded overt subject (32). Since the embedded clause does not have a Case position for the embedded external argument, the derivation crashes because *John* didn't have its Case checked.

(32) * I tried [John leaving early].

The question arises then why acc-*ing* gerunds behave differently from TP-defective gerunds in that they allow either an overt subject or a null subject. In Pires

2000 I proposed a movement account for that optionality, accounting for the distribution of gerunds that license an overt subject either with nominative Case or with accusative Case (acc-*ing* gerunds). I refer to that class of gerunds as clausal gerunds (CGs), given that they project to a TP. Clausal gerunds occur in a range of different positions, as indicated in (33). I discuss here only the cases in (33a) and (33c) (Pires 2000 has details about the other constructions).

(33) a. Acc-*ing* constructions as complements to verbs (34a);
b. Acc-*ing* constructions as complements to subcategorized prepositions (34b);
c. Acc-*ing* constructions in subject position (34c);
d. Acc-*ing* constructions in prepositional phrases in adjunct position (34d);
e. Absolute constructions (34e).

(34) 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.

In the current analysis, the distinction between CGs and TP-defective gerunds relies crucially on the properties of the head of the clause, which I argue to be T in the case of CGs. The relevant properties of the head of a CG (its T) are indicated in (35). Some of them correspond to properties of CGs that have been discussed in the literature (see Reuland 1983 and Pires 2000 for references).

(35) a. A CG carries an uninterpretable Case feature that needs to be checked.
b. It has an EPP feature that needs to be checked.
c. It enters the numeration as ϕ-defective.
d. 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.
e. T of a CG cannot check the uninterpretable Case feature of the embedded subject while its own uninterpretable Case feature is still unchecked.

Property (35a) is a direct formalization of a special property of CGs: the fact that they need to occur in a 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 (35b) and (35c) do not represent any departures from a standard minimalist view, and they relate the behavior of clausal gerunds to that of *to*-infinitives.

Properties (35d) and (35e) are related to 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-feature on functional heads and Case on DPs) activate a probe and a goal, thus inducing Agree. In finite clauses once the functional head T (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 (35d). 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. 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, according to property (35a).

(35e) can be seen as a direct consequence of (35a). Once $T^0$ and the DP enter into match/agree, ϕ-feature and Case checking should take place. However, (35e) ensures that $T^0$ of a CG does not check the Case of the DP in [Spec, TP], as 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 their 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:

(36) 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 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 *v* 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:

(37) 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, *v*P]. 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:

(38) John swimming is/seems impossible.

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

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

Since a *to*-infinitives cannot be assigned Case, it cannot further transfer Case to its embedded subject (*John)* and the derivation crashes. A similar analysis can account for related examples with TP-defective gerunds, which I return to in the end of this section.

Take now an ungrammatical example that is ruled out descriptively by the fact that the embedded CG is not being assigned Case. If the DP 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:

(40) * 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$_2$, *v*P]. *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 (41).

(41) *John seems swimming.

See now how a standard case of a CG with a lexical subject can be derived (42). 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.

(42) 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~~ C$_{AGR}$ θ/C

In sum, by proposing certain properties based on the special Case requirement on CGs the analysis 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 (see for instance Abney 1987, Milsark 1988, Reuland 1983).

Turning back to TP-defective gerunds, it is relevant to discuss several cases (45a)-(46a) that do not consistently pattern or contrast with the corresponding CG examples repeated below (45b)-(46b). The data below may provide support for relating TP-defective gerunds to clausal gerunds in terms of their need to check Case.

(43) a. * John swimming was tried.
b. John swimming was preferred.

(44) a. *I tried John swimming. (28b).
b. I prefer John swimming.

(45) a. *John was tried swimming.
b. *John was preferred swimming.

(46) a. John tried swimming. (28a)
b. John preferred swimming.

At the beginning of this section I proposed an analysis of TP-defective gerunds that explored the strong hypothesis that TP-defective gerunds do not project a TP, and accounted for examples like (44a) and (46a). However, the pairs in (45) and (46) indicate that at least in some respect TP-defective gerunds pattern with CGs. One way to capture that similarity may be to reconsider the weak hypothesis about the status of TP-defective gerunds, showing that they are structurally more similar to CGs than it may appear at first. One possibility is that both TP-defective gerunds and CGs have a Case feature that needs to be checked. That explains why not only CGs but also TP-defective gerunds cannot occur as complements of passive verbs (45). In that respect, the analysis of the TP-defective gerund in (46a) would no longer be as proposed at the beginning of this section, but somewhat similar to the analysis of the related CG example (46b), which was presented earlier.

Still, TP-defective gerunds cannot be entirely collapsed with CGs, given the contrastive pairs in (43) and (44). Surprisingly, though, the corresponding CGs in (43b) and (44b) are exactly the ones whose derivation involved Case marking of the embedded

subject in two steps: the head of the CG had to have its own Case feature checked before it could check the Case feature of its own embedded subject. This mechanism is in some way a formal implementation of the notion of Case transmission or Case percolation proposed in GB (see, for instance, Ortiz de Urbina 1989). This process of Case transmission is then expected not to be available for TP-defective gerunds, given the ungrammaticality of (43a) and (44a). In sum, like CGs, TP-defective gerunds may have a Case feature that needs to be checked, but they are unable to Case mark an embedded subject by means of a process of Case transmission. That explains a contrast that was emphasized in the course of this paper: only CGs, but not TP-defective gerunds, can assign Case to an overt subject. After all, the impossibility of Case transmission for TP-defective gerunds should be related to the deficiency of their TP properties, as shown earlier by their impossibility of carrying independent temporal specification or perfective morphology, contrary to CGs. One way to put it is to assume that the head T in CGs is the projection that allows for Case transmission to occur. If T is missing or defective in TP-defective gerunds, Case transmission cannot apply.

## 5 Properties of Gerunds as Complements of Perception Verbs

In this 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 (see also Akmajian 1977). I argue that these complements are even more structurally defective than CGs and should be analyzed as bare *v*Ps. This is supported by the properties below. I leave as an open question whether they project simply as *v*Ps or display an aspectual projection above *v*P. 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, PVCs never contain any overt complementizer (*that, for-to*)

**ii.** They do not accept modals nor perfective *have–en* (47a) although they do occur in passive structures (47b). CGs, on the other hand, accept both perfective morphology (47c) and passives.

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

**iii.** They allow their subject to raise to the subject of matrix passive verbs (48b), differently from CGs (49b), which indicates both that PVCs do not need to occur in a Case-marked position and that they behave like regular ECM complements.

(48) a. Mary saw Paul leaving the house.
b. Paul was seen leaving the house.

(49) a. 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:

(50) 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:

(51) 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 I proposed for CGs, which relies on the special status of the CG clausal head ($T^0$).

## 6 TP-defective Gerunds vs. Complements of Perception Verbs

Consider now how TP-defective gerunds relate to complements of perception verbs. PVCs lack tense specification the same way as TP-defective gerunds do (52).

(52) a. *This morning Francis will see Bill leaving tonight.
b. *This morning Francis will try leaving tonight.

As I have shown in section 1, TP-defective gerunds also block perfective morphology and *there* expletives (53), exactly like PVCs.

(53) a. * I tried having talked to Mary.
b. * Tim tried there being many men in the room.

This supports the view that these two types of gerunds share some TP-defective properties. However, two facts show that they are structurally different. First, PVCs license non-expletive overt subjects under ECM (54a). Second, this is confirmed by the fact that the embedded subject DP may raise to the subject position of a matrix passive verb (54b). Neither strategy is available for TP-defective gerunds (55), a fact for which I proposed an explanation in section 4.

(54) a. Mary saw Paul leaving the house.
b. Paul was seen leaving the house.

(55) a. *Mary tried Paul leaving the house.
b. *Paul was tried leaving the house.

As I showed before, CGs also license overt subjects, not through ECM but through a process of Case checking in two steps, the formalization of the notion of Case percolation. Since neither ECM nor this two-step Case checking is available for TP-defective gerunds, they cannot license overt subjects. The special status of TP-defective gerunds in this respect is related to the fact that although they share certain properties either with CGs or with PVC gerunds, they are neither as structurally defective as PVC gerunds nor as complex as CGs.

## 7 A Note on Factivity

One property associated with TP-defective gerunds is that they do not allow for a factive interpretation (56a) (Kiparsky & Kiparsky 1970), whereas acc-*ing*/poss-*ing* gerunds (56b) and PVC gerunds (56c) allow that interpretation.

(56) a. John didn't try talking to Mary (-> John didn't talk to Mary).
b. Paul didn't regret Mary('s) moving to LA. (-> Mary did move to LA).
c. Bill didn't see Mary talking to Bill (-> Mary did talk to Bill).

Roberts & Roussou (2000) have argued that factive clausal domains are selected by a DP projection. TP-defective gerunds are the only kinds of gerunds that do not behave that way. If an analysis that argues for a syntactic divide in terms of factivity is on the right track, it lends further support to the syntactic distinctions between TP-defective and other gerunds that have been proposed throughout this paper.

## 8 Conclusion

This paper has presented an analysis of a range of gerunds that includes acc-*ing* gerunds, complements of perception verbs and a class of TP-defective gerunds that appear to share properties either with the former or with the latter. Most of the similarities and contrasts discussed here hinge on the level of structural complexity each of these gerunds displays.

The facts discussed also allow for an evaluation of different theories of control. The absence of a TP projection in certain gerunds challenges null Case theories of Control, in which null Case is checked in [Spec, TP]. Furthermore, the lack of a tense specification in all gerunds presents specific problems for versions of a null Case theory of control that assume [+Tense] checks null Case. On a different note, I have argued that although TP-defective gerunds share some properties with restructuring infinitives, they are not entirely parallel to restructuring predicates in German and some Romance languages, because they project the outer layer of *v*P in the embedded clause. An analysis of control as the result of A-movement captures the facts above by allowing the θ-marked argument of TP-defective gerunds to be generated in the embedded clause and move to the matrix clause to check its Case.

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