

# Local Case, Cyclic Agree and the Syntax of Truly Ergative Verbs\*

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## 1. Introduction

In this paper, I argue that German shows an ergative split. While transitive verbs as in (1a) show a NOM/ACC case pattern with the external argument marked nominative and the internal argument marked accusative (cf. 1b), it can be shown that with reflexively marked anticausatives as in (2a) the nominative theme is base-generated in a position c-commanded by the accusative reflexive pronoun (cf. 2b), i.e. they involve an ACC/NOM case pattern. The alternation between causative verbs as in (1) and reflexively marked anticausatives as in (2) is then, from a formal, morpho-syntactic perspective, an instance of an ergative split; the external argument of the construction in (1) and the internal argument of the construction in (2) show the same case morphology as the sole argument of intransitive verbs.

- (1) a. als Hans die Türen öffnete  
when John.NOM the.ACC doors opened.SG  
'when John opened the doors'  
b. [ Tense [<sub>VP</sub> NOM [<sub>VP</sub> ACC V ] ] ]
- (2) a. als sich die Türen öffneten  
when REFL.ACC the.NOM doors opened.PL  
'when the doors opened'  
b. [ Tense [<sub>VP</sub> ACC [<sub>VP</sub> NOM V ] ] ]

An analysis of reflexive anticausatives along the lines in (2b) is by far not new. Here, however, I add on the one hand an empirical argument from German that this analysis is actually correct and, in addition, I investigate the consequences of the existence of the ergative split in (1) vs. (2) for the theory of structural case. The central point in this latter discussion is that, in contrast to "real" ergative splits, there is no reason to assume that (1a) and (2a) differ in the functional make up of their extended verbal projection. This means, the case split in (1) vs. (2) cannot be reduced to a parameter in the case system related to (the features on) functional heads like Tense, Aspect, Mood or Person. This makes it hard for standard case theories to account for the alternation between (1) and (2).

As an alternative, I propose a non-parametrical case system that is flexible enough to derive both case patterns in (1) and (2). I follow the proposal that morphological case is actually a post-syntactic phenomenon and that ACC is the dependent case (thereby *deriving* Burzio's Generalization). Crucially, although morphological case is established post-syntactically, it nevertheless depends on syntactic information; the information relevant is which DP agrees with and values thereby the unvalued phi-features of the local phase head v. The DP that valued v is (typically) realized with default NOM. Dependent ACC is realized on a DP, if a further DP in the same local domain exists that valued v. The account allows, on the one hand, NOM to be independent from Tense while verbal agreement is nevertheless related

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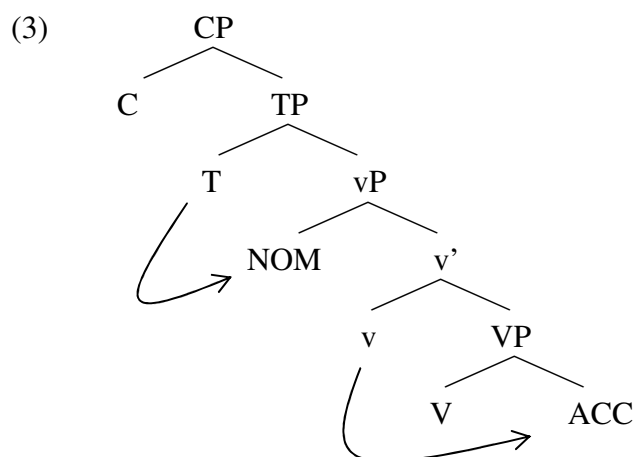
\* I would like to thank Artemis Alexiadou and especially Thomas McFadden for discussion. All remaining errors are mine.

to the NOM-DP via cyclic agree. On the other hand, the case split in (1) vs. (2) follows because in (1) it is the external argument DP in Spec,vP which undergoes Agree with the phase head *v*, while in (2) the reflexive pronoun in Spec,vP is unvalued and cannot value *v* so that the Agree relation has to be established with the more distant theme in object position. Once a DP has valued the phase head *v*, any further DP in the same phase (which does not get inherent case) will be morphologically marked with dependent ACC.

The paper is organized as follows: In section 2, I discuss the standard case theory of Chomsky (1981, 2001) as well as a number of further developments in case theory that will come to be of importance during the discussion of the case split in (1) vs. (2). In section 3, I analyse the phrase structural properties of reflexive anticausatives and show that they actually have the structure in (2b). In section 4, finally, I turn to the details of the outlined case theory and show how it allows us to derive the kind of ergative split between (1) and (2). During this discussion, I will also shortly outline how the reflexive pronoun in (2b) can circumvent a Principle A violation and why it remains without a theta role.

## 2. Four developments in Case Theory

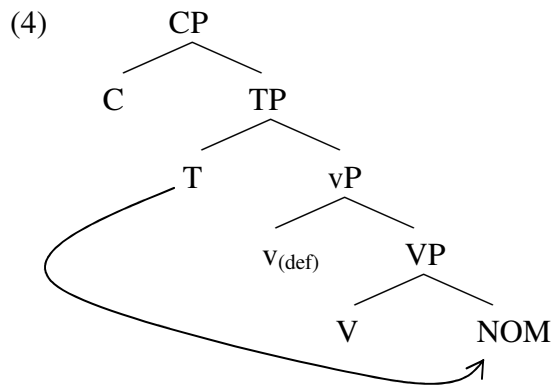
In the standard account of structural case (Chomsky 1981, 2001), NOM is assigned (or checked or valued) by Tense, thereby triggering verbal agreement, while ACC is assigned (or checked or valued) by the verb. (3) shows a specific implementation of such an account where it is the little *v*-projection introducing the external argument which is responsible for accusative on the internal argument.<sup>1</sup>



The standard account stipulates Burzio's Generalization (BG) as a property of the verb/little *v* (involving a "conspiracy of case theory and theta theory" (Sigurðsson (2006), see already Abraham (1986)): If *v* does not introduce an external argument, *v* is *defective*, i.e. not equipped for ACC. The internal argument of unaccusatives therefore cannot get accusative from *v*, but instead gets nominative from Tense as in (4). (In some languages, Tense cannot assign NOM into the vP so that the internal argument has to move to the Spec of Tense, see fn.1). While this descriptively gives the correct result, there is, however, no explanation for why the case properties of *v* should depend on the theta properties of *v*.

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<sup>1</sup> I leave aside here the alternative that case is assigned or checked by T and *v* under a Spec-Head relation, not under c-command. Under such a conception, the external argument must move from Spec,vP to Spec,T in order to get nominative (the dislocational property of nominative), while the internal argument must move to the outer Spec,vP to get accusative.



Further, at least under a checking account of case, the convergence of unergatives remains unclear in this system; since unergatives have an external argument in Spec,vP, why does the derivation of unergatives not crash due to an unchecked accusative feature?<sup>2</sup>

## 2.1 Phase Theory

This standard account is compatible with the assumption that a transitive vP is a phase (Chomsky 2000, 2001); since only the complement of a phase head is sent to the interfaces, the external argument in Spec,vP is still present once T is merged. However, the standard account needs some adjustment if passive and unaccusative vPs are phases, too, as proposed by Legate (2003).

The consequences of this proposal for case theory are discussed in Legate (2005). The unaccusative example in (5a) could still be accounted for under the relaxed version of the Phase Impenetrability Condition in Chomsky (2001:14) because, there, a phase is sent to Spell-Out not earlier than the next higher phase head is merged. Material inside the vP is still accessible when Tense is merged and becomes inaccessible only when C is merged. *Ten trains* can, therefore, undergo a relationship with Tense to get nominative. This technical solution is not really promising, however, as it fails to derive cases where more than one phase head intervenes between Tense (the probe) and its goal, as in (5b).

- (5) a. There arrive *ten trains* into this station every day  
 b. There seem to have arrived *ten trains* into this station today

As a more principled solution to the problem posed by unaccusative and passive vPs being phases, Legate (2005) proposes the concept of ‘cyclic agree’: In (5b), *ten trains* does not agree directly with Tense, but it does so only indirectly via small successive cyclic agree relations. First, *ten trains* locally agrees with the *v* associated with *arrive*. Later, this *v* locally agrees with the *v* associated with *seem*, and this *v* finally agrees locally with finite T.

Legate’s account assumes that Case involves valuation of case features in the syntax. The DP *ten trains* enters the derivation with an unvalued case-feature which is passed upwards together with the phi-features of *ten trains* by the cyclic agree mechanism. At some higher phase, this case-feature is valued, for example if Tense is merged and agrees with the closest *v*. This conception leads to a look-ahead problem: Since *ten trains* (in some languages other than English) is spelled out with nominative morphology before the Agree relationship with T is established, how does the morphology succeed in realizing the correct case (NOM)?

Legate tentatively proposes two solutions to this problem. Either, one returns to a conception where the case feature on a DP is not unvalued but uninterpretable; alternatively,

<sup>2</sup> If unergatives involve an incorporated direct object (Hale & Keyser 1993), then the accusative feature could be checked during this incorporation process.

morphology can have access to prior phases and can adjust the case morphology on a DP already sent to Spell-Out once the relevant case-assigning head has been established.

## 2.2 The case-inside-vP approach

Sigurðsson (e.g. Sigurðsson 1989, 2000, 2003) showed that theories where nominative necessarily depends on T (the alleged T-NOM connection) meet serious empirical problems. Central for his argument are various kinds of infinitives in Icelandic which involve NOM-objects even if no long-distance agreement is established between the nominative DP and an alleged case assigner in a finite matrix sentence.

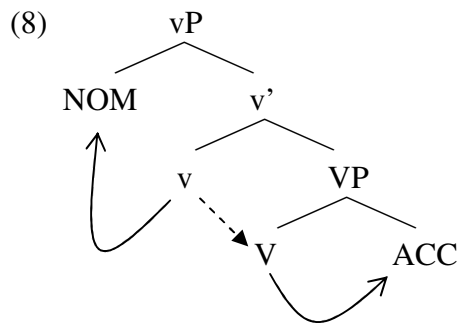
In (6a) and (6b), the matrix clause has a quirky subject and the embedded, non-finite clause involves a nominative object. In (6a), this object optionally triggers agreement on the matrix verb. Crucially, if the embedded non-finite sentence involves a quirky subject, too, as in (6b), agreement between the matrix verb and the embedded nominative object is no longer possible; nevertheless, the nominative on the embedded object is still licensed.

- (6) a. Okkur synðist/synðust [hafa verið veiddir fjórir fiskar]  
 us.DAT appeared(3sg/3pl) have been caught four fishes.NOM  
 ‘It appeared to us that four fishes had been caught’  
 b. Okkur virtist/\*virtust [henni hafa leiðst þeir]  
 us.DAT seemed(3sg/\*3pl) her.DAT have bored they.NOM  
 ‘It seemed to us that she had found them boring’

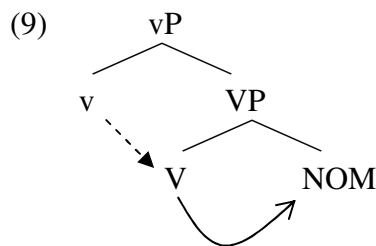
A similar phenomenon shows up in (7a, b). Both examples involve non-finite embedded sentences with quirky subjects. These non-finite sentences are embedded by ECM-verbs which have the possibility to license accusative. However, the object DPs in the non-finite complement sentences crucially cannot be realized with accusative but only with nominative. But there is no reason to believe that this nominative is established by the finite matrix tense as the ECM-verbs intervene. If the embedded objects would be in need for case from the matrix sentence, they should surface with accusative as the ECM-verbs are closer than the matrix tense. (Note also that the matrix subject in (7a) gets already nominative.)

- (7) a. Við töldum [henni hafa leiðst strákarnir/\*strákana].  
 we believed her.DAT have.INF found-boring boys.the.NOM/\*ACC  
 ‘We believed her to have found the boys boring.’  
 b. Mér fannst [henni ekki hafa verið sýnd virðing/\*virðingu].  
 me.DAT found her.DAT not have.INF been shown respect.NOM/\*ACC  
 ‘In my view, she wasn’t shown respect.’

Data as in (6) and (7) suggest that the licensing of and case determination for the nominative object in such clauses is computed at the vP level and does not wait until a higher case-assigner (Tense, ECM-verb) is merged. This is then the ‘case-inside-vP approach’ (or vP-shell approach, as Sigurðsson calls it; see Sigurðsson (2000), with minor changes also Sigurðsson (2003), (2007)): both the NOM-feature and ACC-feature are located in little v. In transitives, NOM is matched directly by the DP in Spec,vP (under m-command) and ACC is transmitted to V and matched by the object DP (cf. 8).



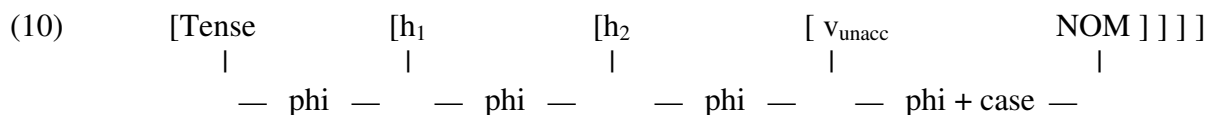
Unaccusative and passive *v* has only one feature, NOM, which is transmitted to *V* and matched by the object DP (cf. 9).



This account still stipulates BG as a property of *v*. If *v* introduces an external argument, it has two case features, if not, it has one (the first!) case-feature. But, at least, the decision is made locally and on the basis of information from one module; only *v*-heads that provide NOM can, in addition, provide ACC. However, one would like to know why, if *v* has two cases to assign, NOM is assigned to the external argument and not accusative and why NOM is the case for all intransitive verbs. Further, the problem with unergatives, mentioned above, remains; why don't they have an ACC feature to check?

If nominative case is generally negotiated inside the *vP* and not via Tense, something has to be said about languages where nominative DPs are necessarily displaced to Spec,TP as well as about the verbal agreement which is typically located in Tense.

Concerning dislocation, it has been argued that this property (if it holds in a language) is triggered by an EPP-feature on Tense, not by Case (Marantz 2000, Sigurðsson 2000, McFadden 2004). Verbal Agreement on Tense is (if taking place) the result of cyclic Agree between Tense and lower phase heads (Marantz 2006). We can simply use Legate's (2005) account of cyclic Agree and just leave out the Case feature on Tense. (10) illustrates how the the sole argument of an unaccusative verb gets its case valued by *v* and how, in addition, its phi-feature values are cyclically passed up to Tense.



Note that under this account of the relation between Tense and the nominative DP, the look-ahead problem disappears or, in the case of transitives, it becomes at least less significant (we will come back to the latter point below; see also fn. 15).

### 2.3 Unmarked and dependent case – *Deriving Burzio's Generalization*

The *vP*-shell approach still has in common with the standard account on structural case that it stipulates Burzio's Generalization as a property of *v*. A number of accounts have tried to get rid of this stipulation. Leaving differences aside, the central idea that these accounts share is that there is a *dependency relation* between structural ACC and structural NOM. Unmarked

NOM is the first structural case in a given domain and marked ACC can only be assigned if a NOM is already present (Yip, Maling & Jackendoff 1987, Marantz 2000 (with qualification), Woolford 1997, 2003, among others.) In addition, lexical case takes general precedence. That is, all these accounts somehow built on the case hierarchy in (11) where the >> sign pre-theoretically reads as ‘takes precedence over’.

(11) Lexical case >> unmarked case (NOM) >> dependent case (ACC)

From (11), Burzio’s Generalization can follow trivially. Furthermore, the problem with unergative predicates mentioned above does not arise. (Note that such accounts do not assume syntactic case-features that need to be checked during the derivation.) However, some addition is necessary: while unergatives and unaccusatives will automatically show unmarked nominative case on their sole argument, for transitives, we need some additional information about which of the two DPs should get which of the two structural cases. Concentrating on accusative languages, we need to make sure that the external argument gets NOM while the internal argument gets ACC and not the other way around (but keep in mind reflexive anticausatives as in (1b) above). Two solutions to this problem can be differentiated in the literature which I call “relational determination” and “functional determination”.

Under a relational determination, the case of a given DP is determined on the grounds of its hierarchical relation to other DPs. This can be formulated in different ways: we can either say that - in a NOM/ACC language - the highest DP in a specific domain (e.g. a phase) gets unmarked case so that other DPs get marked/dependent case. Alternatively, we can say that a DP gets marked/dependent case if a higher DP in the same domain already gets structural case (Marantz (2000), McFadden’s (2004, 2008)).<sup>3</sup>

Under a functional determination, the DP which gets unmarked case is determined by the closeness to some functional head. Either unmarked case goes to the DP which is closest to Tense (cf. Woolford 2003) and other DPs get marked/dependent case. Alternatively, if we want to follow the case-inside-vP approach discussed in the last section, unmarked case goes to the DP which is closest to v.

The relational determination approach has the benefit that it derives without much ado the observation that nominative is typically the default case even in extra-sentential contexts (see McFadden (2008) for discussion). On the other hand, such an approach has to assume some further mechanisms in order to derive the fact that, despite the independence of nominative and Tense, verbal agreement, if present, is typically triggered by the DP marked with nominative. The latter fact follows easily under the functional determination approach, because, the DP which is closest to a functional head can be determined via an agree operation involving phi-features (see below).

## 2.4 Morphological case at PF

A final move in case theory to be mentioned here is the claim that morphological case is a post-syntactic phenomenon and therefore independent of DP licensing. Assuming a realizational view of morphology (as in Distributed Morphology, Halle & Marantz 1993, Embick & Noyer 2007), actual morphological cases are determined post-syntactically, in the branch of the derivation leading to PF (Marantz 2000, McFadden 2004, 2008, Sigurðsson 2006, 2007). This does not mean that syntax has no influence on the choice of morphological case; structural (as well as inherent or lexical) cases are realized at PF on grounds of a purely

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<sup>3</sup> This derives ECM structures like: I saw him (ACC) do something (ACC). It also allows us to get rid of the look-ahead problem discussed in Sigurðsson (2006); see McFadden (2008), Schäfer (2008) and the discussion below).

syntactic basis. For example, Marantz and McFadden assume that the morphological component can see whether a DP in a given domain (phase) is structurally (i.e. syntactically) commanded by a higher one or not. Due to this information, the DP will be realized with nominative morphology or with accusative morphology (i.e., they propose a relational approach).

## 2.5 Outlook

Below, I will propose a case theory which incorporates different aspects of the four developments discussed above. The empirical goal is to account for the ergative split illustrated in (1) and (2). I will assume that the realizational view on morphological case is basically correct. On the one hand, it gives us a specific implementation of the dependent case idea discussed in section 2.4 which, in turn, allows us to derive Burzio's Generalization instead of stipulating it. On the other hand, we will see that such an account can avoid the look-ahead problem for case-dependent objects (see Sigurðsson 2004) if a careful formulation of the dependency relation is chosen (see also McFadden 2008).

However, I think that amendments have to be made concerning the distribution of the unmarked vs. marked case. The central question already discussed above is the following: How does the system determine which of the two arguments of a transitive verb gets (default) nominative and which (dependent) accusative case? I will argue that a strict configurational view cannot be correct; neither a strict relational determination (higher vs. lower DP in a domain) nor a strict functional determination (the closest DP to a functional head) is sufficient. Instead, the question of which DP in a domain gets unmarked and which marked case must be established by a more flexible syntactic process, *phi-feature valuation via Agree*. The typical situation is that the DP that valued *v* appears with nominative and any further DP in the same domain appears with accusative, i.e. Nom depends on Agree and ACC, in turn, depends on NOM. Under a slight reformulation, however, we can make the claim about default case and dependent case stronger: ACC is realized on a DP, if there is a further DP in the same domain that agreed with and valued *v*. If no such DP exists, the DP appears with default case, i.e. NOM. On this view, ACC does not depend on NOM but on (syntactic) agreement triggered by some different DP in the same local domain.

Before I develop this case theory, I will first discuss in more detail the ergative nature of reflexive anticausatives.

## 3. The Ergative case-pattern of reflexive anticausatives

Since Perlmutter (1978), the class of intransitive verbs is assumed to divide into two classes which differ in the base-position of their sole argument. So-called *unergative* verbs start with an external argument, so-called *unaccusative* verbs start with an internal argument that becomes an external argument only in the course of the derivation.

Burzio (1986) changes the terminology and replaces the term *unaccusative* verb with the term *ergative* verb. Many linguists, however, considered the term *ergative* a misnomer in this context and turned back to the original terminology. Burzio uses 'ergative' to describe a parallel in *theta-structure* between transitive verbs and ergative verbs: the argument of this class of intransitives shares with the internal argument of transitives its thematic role and its internal base position. However, the traditional use of the term 'ergative' stems from case theory and refers to a specific *morpho-syntactic* conformance between transitive and intransitive verbs: A language with an ergative case system morphologically marks the internal argument of transitives with the same case as the sole argument of intransitives while the external argument of transitives is singled out by a different case, so called ergative case.

Under this case-theoretical understanding of the term ‘ergative’ one might wrongly suggest that ergative verbs are special in assigning a specific, ergative case.

Sometimes, the term *ergative verb* is reserved only for a subclass of unaccusative verbs, namely the intransitive version of verbs undergoing the causative alternation (cf. Burzio 1986, chapter 1, fn. 11). These verbs have a transitive, causative as well as an intransitive use (12 a, b), and since the sole argument in the intransitive use bears the same thematic relation to the verb as the internal argument in the transitive use, these verbs are predestined for an unaccusative analysis; in fact, across languages, verbs as in (12b) show clear unaccusative behaviour with respect to the well known diagnostics.

- (12) a. John opened the door  
b. The door opened

Once again, the term ergative makes sense insofar as the sole argument in (12b) bears the same underlying thematic relation to its verb as the object of the corresponding transitive verb in (12a), but again, if we regard ‘ergative’ as a case theoretic term, it does not really fit.

In what follows, I will claim that in German there is a class of (thematically) unaccusative verbs that can, in all conscience, be called ergative verbs under a morpho-syntactic understanding of the term ergative.

### 3.1 The syntax of reflexive anticausatives

German, as well as many other languages, has two types of anticausative verbs. While the causative counterparts do not differ morpho-syntactically, some verbs form unmarked anticausatives (cf. 13) while other verbs mark their anticausative use with a reflexive pronoun (cf. 14).

- (13) a. als Hans die Vase zerbrach  
when John.NOM the.ACC vase broke  
‘when John broke the vase’  
b. als die Vase zerbrach  
when the.NOM vase broke  
‘when the vase broke’
- (14) a. als Hans die Tür öffnete  
when John.NOM the.ACC door opened  
‘when John opened the door’  
b. als **sich** die Tür öffnete  
when REFL.ACC the.NOM door opened  
‘when the door opened’

The presence vs. absence of a reflexive pronoun has syntactic but no semantic consequences.

Semantically, the two types of anticausatives do not differ: both types of anticausatives qualify as *semantically intransitive/inchoative* and involve one argument with a theme theta role. This means that the reflexive pronoun in (14b) does not carry a thematic role but behaves as an expletive (see Schäfer (2008) for detailed illustration that the two types of anticausatives do not differ semantically; cf. also Bierwisch (1996), Haider & Bierwisch (1989), Steinbach (2002), Wunderlich (1997)).

German marked anticausatives are, however, *syntactically transitive* as has been discussed explicitly by Fagan (1992) and Steinbach (2002) and as has been assumed implicitly by a number of German linguists (e.g. Haider & Bierwisch (1989), von Stechow



(1995), Abraham (1995), Bierwisch (1996), Wunderlich (1997), Haider (2000)). Below, I mention some of the arguments from this literature.<sup>4</sup>

While non-alternating unaccusatives and unmarked anticausative select the auxiliary ‘*sein*’ (be), reflexive anticausatives select ‘*haben*’ (have) in German. They thereby pattern with unergative and transitive verbs. The data in (15b) suggests therefore that the canonical external argument position of these verbs (Spec,vP) is occupied.

- (15) a. Die Vase **ist** zerbrochen  
           the vase is broken  
           ‘The vase broke’  
       b. Die Tür **hat** sich geöffnet  
           the door has REFL opened  
           ‘The door opened’

Next, the reflexive pronoun in marked anticausatives is clearly marked with accusative case as can be seen in the context of first or second person themes where the reflexive shifts to a pronoun with overt morphological case-marking.<sup>5</sup>

- (16) a. Du hast **dich** verändert  
           you.NOM have you.ACC changed  
           ‘You changed’  
       b. Du verkaufst **dich** gut; ...  
           you.NOM sell you.ACC well; ...  
           ... ich meine, dein Buch verkauft **sich** gut  
           ... I mean your book.NOM sells REFL.ACC well  
           ‘You sell yourself well, ... I mean, your book sells well.’

Finally, the reflexive pronoun is an independent word and not a clitic and also not incorporated into the verb. This is shown by its word order freedom; as full DPs in German, the reflexive pronoun can be scrambled around in the sentence. All word orders in (17), taken from Steinbach (2002), are grammatical.<sup>6</sup>

- (17) a. dass **sich** die Rolle der Mutter langsam geändert hat  
           that REFL the role of-the mother slowly changed has  
       b. dass die Rolle der Mutter **sich** langsam geändert hat  
       c. dass die Rolle der Mutter langsam **sich** geändert hat  
           ‘... that a mother’s role has changed slowly’

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<sup>4</sup> Many Romance and Slavic languages have reflexively marked anticausatives; in these languages, the reflexive element is, however, not a full pronoun as in German, but a reflexive clitic. As discussed in Schäfer (2008), the analysis of reflexive anticausatives developed here for German can be transferred to these languages, too. This means that, underlyingly, these languages have the same ergative split that I discuss here for German. The clitic nature of the reflexive element makes it, however, hard to prove this for these languages. The clitic is responsible for the fact that reflexive anticausatives select ‘*be*’ in these languages and the cliticisation of the reflexive makes it impossible to apply word order related tests as the one used below for German.

<sup>5</sup> (16b) is an example from Reis (1982) which involves not a reflexive anticausative but a generic reflexive middle; see Schäfer (2008) for the claim that the syntax of reflexive middles and reflexive anticausatives is identical in all relevant aspects.

<sup>6</sup> Note that Wackernagel-movement of pronouns that probably has taken place in (17a) is only a tendency, but it is by far not forced to take place. Note further, that Gärtner & Steinbach (2000) argue that German has no clitics what so ever and that, even in those dialects of German that do have clitics, reflexive pronouns are never clitics.

To conclude, reflexive anticausatives involve an external argument (auxiliary selection) and the reflexive pronoun behaves as a full DP with respect to case marking and word order freedom. This in turn suggests that German marked anticausatives are syntactically transitive although they are semantically inchoative, i.e. intransitive.

The next question then is which of the two DPs in reflexive anticausatives is the internal and which the external argument. (18) shows schematically the two possible answers for the example in (15b).

- (18) a.  $[_{VP} \text{ sich } [_{VP} \text{ a door open}]]$                       b.  $[_{VP} \text{ a door } [_{VP} \text{ sich open}]]$

How can we decide which of the two options is correct? Different modules of the grammar seem to provide opposed answers:

*Case theory* seems to suggest that (18b) is correct. The theme is marked with nominative and the reflexive pronoun is marked with accusative; German is a NOM/ACC language; therefore, the nominative theme should be the external argument and the accusative reflexive pronoun should be the internal argument.

*Principle A* of the binding theory also seems to suggest (18b): An anaphor needs a c-commanding antecedent and this is only given in (18b) but not in (18a).

Turning to the interpretational side, (18b) is however problematic. If we assume a principled mapping from thematic roles to syntactic positions as proposed by principles such as *UTAH* (Baker 1988) then themes should always originate as internal arguments. If we go one step further and assume that theta roles are configurationally determined (configurational theta theory; e.g. Hale & Keyser 1993) then there is also no alternative to the assumption that the theme is an internal argument. Both conceptions leave the external argument position for the reflexive pronoun as in (18a).

Under both structures in (18) we would have to say something about the thematic interpretation of the reflexive pronoun. Why does it not get a theta role? Under (18b) we have to explain why a string such as ‘*Die Tür öffnet sich*’ (The door opens REFL) does not mean something like “The door caused itself to become open”, i.e. why the door does not bear the external theta role and the reflexive pronoun the internal theta role. (18a) already gives the correct interpretation for ‘*die Tür*’ (the door) but we still have to explain why the reflexive pronoun does not get the external theta role.

Only one of the two structures in (18) can be correct, and, in turn, either our assumptions about case and binding theory or about theta theory have to be updated. But we still need empirical arguments for a decision. The argument presented in the next section shows that the theme is indeed base generated below the reflexive pronoun; together with the observation that reflexive anticausatives select the auxiliary ‘*haben*’ (have), i.e. they involve an external argument, this suggests then that (18a) is the correct analysis and that we have to update our assumptions about case and binding theory.

### 3.2 The interpretation of indefinites and bare plurals

The argument for the structure in (18a) builds on the interpretative properties of indefinite and bare plural themes which can, in principle, get either a weak (existential) or a strong (specific or generic) reading. As discussed in the literature, the first VP-border is the domain of existential closure (e.g. DeHoop 1992, Diesing 1992, Kratzer 1989), so that if an indefinite or bare plural NP is scrambled out of the VP, it loses its existentially bound, weak reading. This is illustrated in (19) and (20) with examples from Haider & Rosengreen (1998).

- (19) a. dass Hans einen Fisch bestellte (specific, existential)  
           that Hans a fish ordered  
       b. dass einen Fisch Hans bestellte (specific)  
           ‘that Hans ordered a fish’
- (20) a. dass ja Max Primaballerinas bewundert (generic, existential)  
           that PRTL Max prima ballerinas admires  
       b. dass ja Primaballerinas Max bewundert (generic)  
           ‘that Max admires prima ballerinas’

Recall that in reflexive anticausatives the order between the theme and the reflexive pronoun is, in principle, free. The question that we want to answer is which of the two orders in (21) is basic and which is derived by movement.

- (21) a. als sich eine Tür öffnete      b. als eine Tür sich öffnete  
           when REFL a door opened      when a door REFL opened

The restriction on weak readings discussed above can help us to answer this question. Depending on which of the two orders in (21) is basic and which is derived, we make different predictions about the readings which an indefinite or weak plural theme can get under the two orders. If the theme is base generated as the internal argument and the reflexive pronoun is the external argument, then we predict that the order *sich* << *theme* allows for strong as well as weak readings of the theme (22a). The opposite order must then be derived and should allow only a strong reading of the theme as it has moved out of the VP (22b). If, however, the theme is base generated as an external argument, then the prediction differs. The order *theme* << *sich* should allow weak and strong readings (23a). The opposite order would involve movement of the reflexive to the left; this movement should not affect the interpretational properties of the theme and we would expect once again weak and strong readings (23b). Only one further movement step as in (23c) would bring the theme out of the domain of existential closure but this should not be detectable as (23c) does not differ from (23a) on the surface.<sup>7</sup>

- (22)    The ‘theme-is-internal’ hypothesis:      prediction:  
       a. [<sub>VP</sub> sich [<sub>VP</sub> a door open]      (weak reading possible)  
       b. [<sub>XP</sub> a door<sub>i</sub> [<sub>VP</sub> sich [<sub>VP</sub> t<sub>i</sub> open]      (**no weak reading possible**)
- (23)    The ‘theme-is-external’ hypothesis:      prediction:  
       a. [<sub>VP</sub> a door [<sub>VP</sub> sich open]      (**weak reading possible**)  
       b. [<sub>XP</sub> sich<sub>i</sub> [<sub>VP</sub> a door [<sub>VP</sub> t<sub>i</sub> open]      (weak reading possible)  
       c. [<sub>XP</sub> a door<sub>k</sub> [<sub>XP</sub> sich<sub>i</sub> [<sub>VP</sub> t<sub>k</sub> [<sub>VP</sub> t<sub>i</sub> open]      (**no weak reading possible**)

It turns out that (22) is empirically correct; the weak readings get lost under the order *theme* << *sich*. This suggests that this order is derived. In (24) this is illustrated with an indefinite theme, in (25) with a bare plural and in (26) with a negative indefinite. Negative indefinites can only have weak readings so that the order *theme* << *sich* leads to total deviance; it can however be salvaged if the negative indefinite is part of a bigger noun phrase (nothing of this) in which case this noun phrase is the domain of existential closure.

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<sup>7</sup> Obviously, languages which use reflexive clitics as a marker of anticausatives are not amenable for such a test.

- (24) a. weil sich eine Tür öffnete (specific, existential)  
       because REFL a door opened  
       b. weil eine Tür sich öffnete (specific)  
           ‘because a door opened’
- (25) a. weil sich Türen öffnen und schließen sollten (generic, existential)  
       because REFL doors open and close should  
       b. weil Türen sich öffnen und schließen sollten (generic)  
           ‘because doors should open and close’
- (26) a. weil sich nichts verändern wird  
       because REFL nothing change will  
       b. weil nichts \*(von dem) sich verändern wird  
           because nothing of this REFL change will  
           ‘because nothing (of this) will change’

From the above results I conclude that reflexive anticausatives have the structure in (18a/22); the reflexive pronoun is the external argument and the theme is the internal argument.<sup>8</sup> This means that German is, indeed, a kind of split-ergative language. The causative alternation between transitive, causative predicates and reflexive anticausative predicates involves an ergative split in a formal sense. While the external argument of causatives gets the same case as the sole argument of intransitives, it is the internal argument of reflexive anticausatives which gets the same case as the sole argument of intransitives. The situation is depicted again below.<sup>9</sup>

- (27) a. als Hans die Türen öffnete  
       when John.NOM the.ACC doors opened.SG  
       ‘when John opened the doors’  
       b. [ Tense [<sub>VP</sub> NOM [<sub>VP</sub> ACC V ]]]
- (28) a. als sich die Türen öffneten  
       when REFL.ACC the.NOM doors opened.PL  
       ‘when the doors opened’  
       b. [ Tense [<sub>VP</sub> ACC [<sub>VP</sub> NOM V ]]]

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<sup>8</sup> Note that in the case of semantically transitive structures, the situation is different. When a nominative agent thematically binds an accusative theme, then a weak reading is possible for the agent under both word orders as the examples below show. This is not surprising as, in such cases, the reflexive pronoun is the internal argument.

- (i) a. als eine Frau sich anmeldete (specific, existential)  
       when a woman REFL registered  
       b. als sich eine Frau anmeldete (specific, existential)  
           ‘when a woman registered herself’
- (ii) a. weil niemand sich anmeldete  
       because no-one REFL registered  
       b. weil sich niemand anmeldete  
           ‘because no one registered’

<sup>9</sup> A discussion of reflexive anticausatives with respect to other unaccusativity diagnostics is beyond the scope of the paper. I have to refer the interested reader to the more detailed discussion in Schäfer (2008) which shows that all unaccusativity diagnostic are either compatible with or even support the analysis of reflexive anticausatives proposed here. Ironically, the term ‘unaccusative’ no longer really fits for reflexive anticausatives as these predicates do assign accusative case to the reflexive pronoun. But theta-theoretically, these verbs are identical to one-place unaccusatives.

In the next section, I will describe a case theory that can derive this split; the solution is closely connected to the two other problems concerning binding theory and theta theory that the structure in (28) poses; how can the reflexive fulfil the binding theory and why does the reflexive not get an external theta role?

#### **4. Deriving the ergative case pattern of reflexive anticausatives**

Two shorthanded proposals to derive the case marking in (28) can be dismissed immediately.

First, there is no reason to assume that the accusative in (28) is lexical or inherent. This is so because lexical case is related to specific semantics, but the reflexive does not carry any theta role. Further, there are good reasons to assume that either one of the two versions of the causative alternation is derived from the other or that both are derived from a common source (cf. Alexiadou et. al (2006) for recent discussion); if one version would involve lexical or inherent case, the other should, therefore, too. But the accusative in (27) is clearly structural.

Second, an analysis of the split along the lines of well known ergative splits does not work, neither. Crosslinguistically, ergative splits are known to be driven by semantic choices such as the specific Tense, Aspect, Mood of the sentence or the specific Person of an argument of the verb. These semantic properties are assumed to be reflected by (features on) functional heads. These different functional heads are then assumed to implement different case marking systems (e.g. Müller 2008 for recent discussion). But there is no reason at all to assume that the functional make up of transitives as in (27) and marked anticausatives as in (28) differs in any such sense.

Two conclusions must be drawn from this. The case marking in (28) involves the same two structural cases as in (27). Burzio's Generalization is not about theta roles (the reflexive pronoun has no theta role in (28)) but only about syntactic arguments and their case marking.

Note further that none of the "strict" case systems discussed in section 2 can handle the alternation in (27-28) without further ado. Within the standard account as well as the case-inside-vP approach which both assume case-features, there is no reason why NOM should suddenly be assigned downstairs and ACC upstairs. Accounts which build on a dependency relation between accusative and nominative do not fare better; under a relational determination (The highest DP in a domain gets unmarked case),<sup>10</sup> there is no reason why the NOM should suddenly go downstairs and ACC upstairs. Similarly, under a functional determination (Spec,vP gets unmarked case), there is again no immediate reason why the NOM should suddenly go downstairs and ACC upstairs.

Below, I propose an alternative system which incorporates different ingredients of the other accounts but differs in one respect. I assume that case depends on specific syntactic properties, but that actual case morphology is established at PF. Further, I assume that ACC is the dependent case. I propose that in addition to the concept of dependent case the concept of phi-feature Agree is necessary; the DP that has undergone Agree with and thereby valued the phase head *v* in the syntax is (typically) realized with default case (NOM) at PF. (This Agree information of *v* is often handed on to Tense via cyclic agree). A DP is realized with dependent case (ACC) at PF, if a further DP within the same local domain already valued *v* (and is thereby determined to get structural case).

The crucial benefit of this conception is that it makes it possible to exclude anaphors from the assignment of default case. It is well known that anaphors are referentially defective, a

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<sup>10</sup> Crosslinguistically, anaphors typically lack nominative forms. However, assuming that the highest DP in a domain gets NOM unless this DP does not have a nominative form would stipulate this gap in the paradigm. Below, however, we derive the gap. Note in addition that with first and second person, there would be a nominative form available.

fact that is captured if they have no valued phi-features (Chomsky 1981, Burzio 1998). Therefore, they cannot value the phi-features on v/Voice (cf. the *Anaphor Agreement Effect* in Woolford 1999) and v/Voice has to widen its probing domain until it meets the theme in the direct object position.

Before I show how the system works in detail, I will first shortly introduce my assumption about the syntactic realization of anaphors and the mechanisms of local binding more generally. Afterwards, I formalize my proposal about the theory of structural case and show how the case properties of the causative alternation in (27-28) can be derived within it. As we will see, anaphors can survive without a c-commanding antecedent under very specific circumstances. I will argue that these circumstances are responsible for the fact that the reflexive in reflexive anticausatives does not carry a thematic role. This property, in turn, restricts the derivation of reflexives in the external argument position to verbs which have the thematic/conceptual option to form inchoatives/anticausatives.

#### 4.1 Local Binding

I assume that (local) binding is syntactically derived via an Agree relation with the antecedent as a probe and a variable as a goal (cf. Heinat 2006, Fischer 2004, 2006 and also Burzio 1996, 1998, Reuland 2001). This means that not only heads but also phrases (the antecedent) can act as probes (cf. Heinat 2006, Fischer 2004, 2006 for justification). I leave it open what activates antecedents as probes (for some discussion see Schäfer 2008).

A (locally bound) variable is totally underspecified with respect to phi-features; it is a set of a categorical D-feature and unvalued phi-features  $\{D, u\Phi\}$ . Therefore it is referentially defective. Further, it needs an antecedent to value its features under Agree.

At LF, the syntactic Agree relation is evaluated semantically as a binding relation (as expressed via co-indexation in earlier stages of the theory). It will become important later, that the semantic part of binding needs an Agree relation between a variable and a c-commanding antecedent. At PF, the Agree relation is evaluated morpho-phonologically and the variable is spelt out in a language specific way (Halle & Marantz 1993, Heinat 2006). The specific Spell Out (as a reflexive or as a (locally bound) pronoun) depends on the phi-features of the antecedent and language dependent morpho-phonological economy conditions (cf. Burzio 1998). An example involving a locally bound variable in object position will be discussed in more detail below.

#### 4.2 Implementing the NOM-Agree relation

Turning to case assignment, we want to derive the fact that external arguments are the preferred ones to get nominative; internal arguments can get nominative only in the absence of an external argument (or if the external argument is an anaphor).

If v/Voice is responsible for nominative (as proposed by the case-inside-vP approach discussed in section 2.2), then v/Voice must prefer DPs in its specifier over DPs embedded in its c-command domain. Assume that NOM is the PF reflex of a syntactic Agree relation; this means that v can agree with its specifier, i.e. Agree involves m-command.<sup>11</sup> The preference for Agree between a head and its specifier can be derived as a minimality condition on the length of the agreement path; the specifier of a head is closer to the head than material embedded in the complement of the head. A definition of Agree that meets exactly our requirements here has been formulated by Müller (2004/2008) and is given in (29):

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<sup>11</sup> Alternatively, we could assume that nominative depends on a head which c-commands the external argument position. But then we are again close to a theory where nominative depends on Tense.

(29) *Agree*:

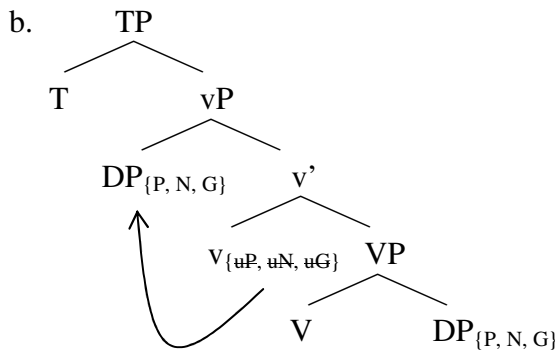
- $\alpha$  agrees with  $\beta$  with respect to a feature bundle  $\Gamma$  iff (a), (b), and (c) hold:
  - a.  $\alpha$  bears a probe feature [ $*F^*$ ] in  $\Gamma$ ,  $\beta$  bears a matching goal feature [ $F$ ] in  $\Gamma$ .<sup>12</sup>
  - b.  $\alpha$  m-commands  $\beta$ .
  - c. There is no  $\delta$  such that (i) and (ii) hold:
    - (i)  $\delta$  is closer to  $\alpha$  than  $\beta$ .<sup>13</sup>
    - (ii)  $\delta$  bears a feature [ $F$ ] that has not yet participated in Agree.

With these ingredients, we can turn, in the next section, to some explicit example derivations.

### 4.3 Deriving structural case

The derivation of an ordinary transitive sentence as (30a) works as depicted in the tree in (30b). Little *v* is merged with a set of unvalued  $\phi$ -features. The external argument is merged in the specifier of *v*.<sup>14</sup> Afterwards, *v* probes its m-command domain. The closest element with valued  $\phi$ -features is the external argument in Spec,*vP* which therefore agrees with *v*.

- (30) a. Hans öffnet die Tür  
John opens the door



At this point, all features in the *vP*-phase have been valued; the phase is closed. I assume, following McFadden 2008, that only then the complement of the phase head *v* (i.e., VP) is sent to the interfaces. At PF, the internal argument is marked with dependent ACC as it has not undergone Agree with *v* and because there is a higher DP within the same phase which has valued the features on *v* via Agree and thereby qualifies for unmarked NOM.

Note that, in order for this account to work, the object DP must know at PF about the presence of the subject DP in Spec,*vP*. But the case of the object is not dependent on the exact morphological case that the subject will get but on syntactic properties of the subject.<sup>15</sup> All that must be known at this stage is that the phase head *v* has its features valued by its specifier which, thereby, qualifies for structural case. This information will suffice to trigger ACC on

<sup>12</sup> Starring a feature indicates its probe status; see Sternefeld (2006).

<sup>13</sup> Müller (2004: 4): “ $\delta$  is closer to  $\alpha$  than  $\beta$  if the path from  $\delta$  to  $\alpha$  is shorter than the path from  $\beta$  to  $\alpha$ . The path from X to Y is the set of categories Z such that (a) and (b) hold: (a) Z is reflexively dominated by the minimal XP that dominates both X and Y. (b) Z dominates X or Y. (See Müller (1998, 130); also cf. Pesetsky (1982, 289), Collins (1994, 56).) The length of a path is determined by its cardinality. It follows that the specifier and the complement of a head qualify as equally close to the head; and that the specifier of a head is closer to the head than a category that is further embedded in the complement of the head.”

<sup>14</sup> But see the discussion on the earliness conflict between Merge and Agree in Müller (2004, 2008); real ergative languages could instead have an earliness requirement for Agree instead of Merge.

<sup>15</sup> This move prohibits the problem of counter-cyclicity in accusative assignment discussed by Sigurðsson (2006); see McFadden (2008) for further discussion of this solution.

the object. Concretely, I assume that when an element is sent to PF it still has access to information about the syntactic status of its phase head which has not yet been sent to PF. The internal DP knows at PF that *v* agreed with a further DP.

After VP has been sent to the interface the derivation continues; Tense is merged on top of *vP* and undergoes an Agree relation with the *v*-head which might lead to verbal agreement at PF. At some point, the higher phase including the *v* head and the subject DP in its specifier will be sent to PF. The fact that the subject DP valued *v* will lead to nominative case on the subject. That is, when the subject DP comes to PF, it has no information about the structural case that the object DP received; this is so as the structural case of the object was established at PF one cycle earlier.

Assume that, instead of Tense, an active ECM-verb is merged on top of *vP* determining the next phase as in (31).

- (31) a. John saw Mary meet Peter  
 b. [Tense [*vP*<sub>1</sub> John<sub>1</sub> [*VP*<sub>1</sub> saw [*vP*<sub>2</sub> Mary<sub>2</sub> [*VP*<sub>2</sub> meet Peter<sub>3</sub> ]]]]]

When *VP*<sub>2</sub> is sent to PF, DP<sub>3</sub> (Peter) will get dependent case as it knows that its phase head *v*<sub>2</sub> has agreed with DP<sub>2</sub> (Mary). When *VP*<sub>1</sub> is sent to PF, DP<sub>2</sub> (Mary) will get dependent case as it knows that its phase head *v*<sub>1</sub> has agreed with DP<sub>1</sub>. The information that DP<sub>2</sub> valued *v*<sub>2</sub> and thereby qualified for default case is overwritten. That is, our concept of dependent case is so that dependent case outranks default case if a DP qualifies for both (but see below). When DP<sub>1</sub> (John) is sent to PF, it will get nominative because it valued *v*<sub>1</sub> and there is no further DP that valued an accessible phase head. That is, when DP<sub>1</sub> comes to PF, it has no information about the syntactic status that DP<sub>2</sub> had before, namely that DP<sub>2</sub> has structural case. If it had, it would get dependent case, contrary to fact.

So far, I assumed that NOM is realized at PF on the DP that valued *v*, while ACC is realized at PF on a DP, if a further DP in the same accessible domain valued *v* and thereby qualified for NOM. This means that NOM depends on Agree with *v* and ACC, in turn, depends on NOM. Note that NOM is no longer a real default case under this conception as it has a licensing condition.

Note, also, that ACC outranks NOM in some sense. This is the case with ECM-constructions as in (31); DP<sub>2</sub> (Mary) first qualifies for NOM because it agrees with *v*<sub>2</sub>, but when DP<sub>2</sub> is sent to PF, DP<sub>1</sub> has already agreed with *v*<sub>1</sub> and this information triggers ACC on DP<sub>2</sub>. DP<sub>2</sub> therefore qualifies for NOM and for ACC but actually ACC is realized.

I want to propose here a slight reformulation of the system. Under this reformulation, NOM is really the default case which is not licensed by anything.<sup>16</sup> Further, we can get rid of the double case-licensing of DP<sub>2</sub> in (31). All we have to change is the dependency relation that triggers ACC. ACC is not dependent on NOM nor is ACC dependent on a further structural case. Instead, ACC is dependent on a syntactic Agree relation between *v* and some further DP in the same domain. This is formulated in (32).

- (32) a. A DP is realized at PF with dependent case (ACC) if a different DP has valued the accessible phase head *v* via Agree. (A phase head is accessible to its complement already sent to PF and to the elements that are sent together with the phase head to PF.)  
 b. A DP which is not realized with dependent case appears with default case.

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<sup>16</sup> Many thanks to Thomas McFadden for pointing out to me this alternative. Recall that in extra-sentential contexts DPs typically occur in the nominative. Further, nominative is typically also morphologically unmarked.



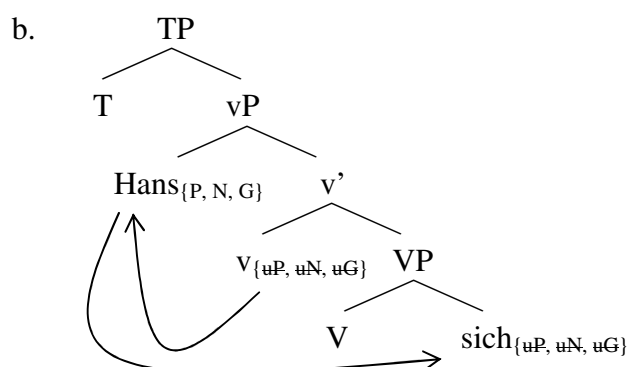
With this alternative formulation, let us turn back to the ordinary transitive structure in (30). When the object DP is sent to PF, the subject DP has already agreed with  $v$ . Since this information is accessible to PF, the object DP gets dependent case. When the subject DP is sent to PF one cycle later, there is no information about any further DP which agreed with  $v$ ; therefore the subject DP does not qualify for dependent case and appears instead with default case.

The properties of ECM-construction in (31) also follow. When  $DP_3$  is sent to PF,  $DP_2$  has already valued  $v_2$ ; this information triggers dependent case on  $DP_3$ . When  $DP_2$  is sent to PF,  $DP_1$  has already agreed with  $v_1$ ; this information triggers dependent case on  $DP_2$ . Finally, when  $DP_1$  is sent to PF, there is no information about any further DP having agreed with any  $v$ ; the embedded subject has been sent to PF already a cycle earlier. Therefore  $DP_1$  does not qualify for dependent case according to the condition (32a) and appears with default case, instead, as predicted by (32b).

So far, we have seen how the account handles ordinary transitive sentences and ECM-constructions (but see fn. 20 for further discussion of ECM-constructions). Before we can turn to reflexive anticausatives with their ergative case patterns, I shortly show how the derivation of a transitive sentence with a bound variable in object position works.

This is illustrated in (33). The variable enters the derivation with unvalued  $\phi$ -features. The subject is merged with a full set of valued  $\phi$ -features. Little  $v$  probes its m-command domain and agrees with the subject. The subject itself probes down the tree and values the variable's features. These Agree-relations will be evaluated at LF and PF. At PF, we get nominative on the subject, and dependent accusative on the variable for the same reasoning as in (30) above. Further, the variable is spelled out according to the phi-features of its antecedent. At LF, the Agree-relation between the subject and the variable is interpreted as semantic binding. (The fact that the binding of anaphors is typically local follows from phase theory which restricts the domain of Agree (see Fischer 2004, Heinat 2006).

- (33) a. Hans mag sich  
John likes REFL



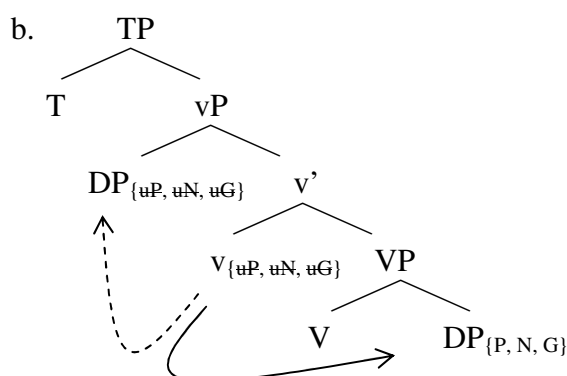
Finally, we turn to reflexive anticausatives; (34) shows their derivation. Once again,  $v$  is merged and a variable with unvalued  $\phi$ -features is merged in Spec,vP.<sup>17</sup> Little  $v$  probes its m-

<sup>17</sup> I assume that the variable does not act as a probe. This would not be problematic for the derivation of reflexive anticausatives as it is proposed here. It would, however, make wrong predictions in the case of real binding dependencies. For example, if an indirect object is bound by a subject, we have to make sure that the variable merged in the indirect object position does not probe and agree with the theme. On the other hand, there are circumstances where one might perhaps want a variable to probe and bind a further variable, as in the case of (i). I leave these questions for future research.

- (i) They proposed themselves to each other

command domain. Assuming *multiple Agree* as well as a conception of Agree as *feature matching* (Chomsky 2004, 2006),<sup>18</sup> *v* agrees with the variable but, since both have the same unvalued features, no valuation takes place. In order to get its unvalued features valued, little *v* has to probe further its m-command domain until it agrees with the object DP. This DP has valued  $\phi$ -features which now value the  $\phi$ -features of *v* as well as the  $\phi$ -features of the variable. At this stage all unvalued features are valued and the structure can be sent to the interfaces. Note especially, that the variable survives syntactically although it does not have a c-commanding antecedent.

- (34) a. als    sich    die Tür    öffnete  
           when REFL the door opened



At this stage, the complement of the phase head *v*, the VP, is sent to the interfaces. At PF, the internal argument does not qualify for dependent case as there is no further DP that valued *v*.<sup>19</sup> Therefore, the internal argument will surface with default NOM.

The next cycle sent to PF will contain *v* and the variable in Spec,vP. This variable will get dependent ACC because a further DP in the same domain has already gotten structural case, namely the object which valued both *v* and the variable at the same time.

Note that this is a crucial difference between variables in Spec,vP and other DPs in Spec,vP. When the variable is sent together with the *v*-head to PF, it knows that there is a further DP in the same vP-phase which gets structural case; the DP that valued the phi-features on both the *v*-head and the variable. That is, the agree relation makes it possible to have information about elements already sent to PF at an earlier cycle. When an ordinary DP in Spec,vP is sent to PF together with the *v*-head as in (30) above, neither the *v*-head nor the DP can have knowledge about potential object DPs. Therefore, they are never case-dependent on such DPs sent to PF already one cycle earlier.

The variable in (34) is spelled out depending on the phi-features of the theme; if the theme is third person, the variable will be spelled out as a reflexive pronoun, if the theme is first or second person, the variable will be spelled out as a first or second person accusative pronoun in German. Further, Tense is also spelled out depending on the  $\phi$ -features of the theme due to the cyclic Agree relation between Tense and *v*.<sup>20</sup>

<sup>18</sup> Or feature sharing (Frampton & Gutmann 2000).

<sup>19</sup> Alternatively, the internal argument gets NOM because it valued *v*. But, as explained above, under this conception NOM is not really a default case.

<sup>20</sup> The combination of external argument variables with ECM-constructions poses a number of further problems and questions. Take the following structure:

- (i) [vP<sub>1</sub> Hans<sub>1</sub> [vP<sub>1</sub> sah [vP<sub>2</sub> sich<sub>2</sub> [vP<sub>2</sub> die Tür<sub>3</sub> öffnen]  
       John (NOM) saw himself (ACC) the door (ACC) open  
       ‘John saw himself open the door’

#### 4.4 Theta Theory: Deriving the non-thematic status of the reflexive pronoun

Syntactically, the structure in (34) is well formed; all unvalued features end up valued. It also gives us an answer as to why the reflexive pronoun can survive without an antecedent; its unvalued phi-features are linked to the unvalued phi-features on *v* via feature sharing and both sets of unvalued phi-features are afterwards valued by the theme DP. Principle A of the Binding Theory is therefore replaced by the need to value the phi-features of the variable via local Agree.

But there are still at least two questions open. First, from a formal point of view, the derivation in (34) should be possible with all kind of transitive verbs, not only with those verbs that actually form reflexive anticausatives. This seems to be the wrong prediction. Second, why is the reflexive pronoun in (34) not assigned the external theta role?

In Schäfer (2008), I propose that theta roles are configurationally determined but that theta roles are not established in core syntax but at the LF-branch of the derivation. More concretely, I argue that theta roles are not assigned in the syntax to DPs, but instead, they are assigned to (or realized by) the denotation of a DP at LF. Specifically, I propose that theta-roles are assigned in the interpretational component following the post-syntactic mode of configurational theta-role assignment in (35).

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We have to make sure that both arguments in the embedded *vP* get accusative and that the variable gets bound by the matrix subject, i.e., that the variable is not valued by the embedded object. I propose to make more flexible our assumptions about when a phase is closed, i.e., when the complement of the phase head is sent to the interfaces.

Assume that a phase can be closed either (a) when a DP valued all features on the phase head or (b) when a DP just agreed with the phase head without valuation having taken place. Further, assume that under both (a) or (b) a second DP in the domain will be marked with ACC. (Option (b) would lead to a crash with reflexive anticausatives as in (34) in the main text as the features of the variable and the *v*-head remain unvalued).

Under option (b), example (i) seems to work: the variable agrees with the *v*-head but no valuation can take place. At this point, *VP*<sub>2</sub> is sent to PF. *DP*<sub>3</sub> knows that something else agreed with the phase head; this triggers ACC on *DP*<sub>3</sub>. When the matrix subject is merged, the matrix *v*<sub>1</sub> agrees with it. In addition, the matrix subject probes down the tree to value the variable. Thereby, the phi-features of the embedded *v*-head are valued, too. Afterwards the matrix *VP*<sub>1</sub> together with the edge of the embedded *vP*<sub>2</sub> is sent to the interfaces. At PF, the variable will get ACC and will be spelled out according to the features of the matrix subject. At LF, the variable is semantically bound by the matrix subject. The latter will get NOM one cycle later.

Note that example (i) has just the reading where the variable is bound by the matrix subject; an inchoative reading of the embedded *vP* is not possible. An inchoative reading is marginally acceptable if the embedded theme appears before the reflexive as in (ii).

- (ii) ?Hans sah die Tür sich öffnen  
John saw the door REFL open  
'John saw the door go open'

I propose that the theme has moved to the outer Spec of the embedded *vP*. It seems as if this movement protects the reflexive from being bound by the matrix subject. This could be an intervention effect. Alternatively, I would like to hypothesize that movement of the Theme to the outer Spec,*vP* forces the valuation of the features on the embedded *v*, i.e., to apply option (a) above. This makes it impossible for the variable to be bound by the matrix subject. Note that the Theme in the outer Spec,*vP* cannot semantically bind the variable in the inner Spec,*vP* as this would lead to a case of 'lethal ambiguity' (McGinnis 2004). The theme values the features on *v* and the features on the variable are indirectly valued thereby, too, but no semantic dependency between the theme and the variable can follow from this (despite the correct c-command relation). The variable and the theme will get ACC as they are sent to Spell Out once the matrix subject valued the matrix *v*. Admittedly, this is speculative. I also have no explanation as for why in (i) the theme cannot value the variable before the embedded phase is closed, i.e. why in (i) option (a) is not possible.

(35) Configurational Theta-Role Assignment:

The **Denotation** of a DP *X* bears a specific thematic relation *R* (*R* = Agent, Causer, Theme, ...) to an event *E* due to the specific syntactic relation of *X* to the syntactic structure expressing or modifying *E*.

Above, I already mentioned that in order to establish a semantic binding relation at LF, a variable needs to undergo Agree with a *c-commanding* antecedent. Crucially, in the derivation of reflexive anticausatives, the variable in Spec,vP gets its unvalued phi-features valued and thereby can syntactically survive, but it is not c-commanded by the DP which (indirectly) values its phi-features. Therefore, the variable remains semantically unbound. Since variables/reflexive pronouns have no reference or denotation of their own, an unbound reflexive pronoun necessarily remains without reference or denotation. Following the principle in (35), it therefore cannot realize a theta-role. We get an unaccusative/anticausative interpretation in a transitive syntax. The reflexive pronoun is semantically expletive.<sup>21</sup>

The non-thematic/expletive nature of the reflexive pronoun in (34) can also explain why this derivation is only possible with some verbs (those undergoing the causative alternation) and not verbs which are semantically necessarily transitive. As discussed in much more detail in Schäfer (2008), necessarily transitive verbs (such as *kill*, *kiss* or *buy*) and verbs undergoing the causative alternation (such as *break*, *melt* or *open*) differ in their conceptual nature. Verbs undergoing the causative alternation express events which can be conceptualized with or without an external argument. Verbs which necessarily form transitive verbs express events which are conceptualized as involving necessarily an external argument. If a verb which is conceptualized as necessarily involving an external argument shows up in the syntax in (34b), it will not be combined with an external argument theta role bearer at LF. This is syntactically without problems but it is filtered out at the Conceptual-Intentional interface as conceptually deviant; the LF structure does not fit with the thematic/conceptual expectation that speakers have with such a verb.<sup>22/23</sup>

## 5. Conclusions

I argued that reflexive anticausatives (in German) are a challenge for standard accounts of case theory because they involve a case pattern where the nominative theme is an internal argument, and the reflexive pronoun, although semantically expletive, is syntactically an external argument marked with accusative case. This type of the causative alternation involves therefore a kind of ergative split.

In order to derive this specific kind of ergative split, I proposed a system that assumes that morphological case is realized post-syntactically on the basis of specific syntactic information. The relevant syntactic information is which DP in a phase values the phi-features of the phase head *v*. A DP gets dependent case (ACC) if a further DP valued the local *v*-head. If no such DP exists, the DP appears with default case (NOM).

The phasal *v*-head searches its m-command domain for the closest DP that values its phi-features. Normally, the DP merged in Spec,vP counts as closest. Crucially, reflexive pronouns (or variables) cannot value because they are in need of phi-feature valuation themselves.

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<sup>21</sup> One could further assume that the variable gets deleted at LF (due to a violation of the principle of Full Interpretation). Again, no external theta-role could be realized.

<sup>22</sup> Generic middles circumvent this filtering process. As discussed in Schäfer (2008), generic middles of necessarily transitive verbs involve exactly the derivation in (34b) in German. In this case, the structure in (34b) becomes conceptually acceptable because the generic semantics allow the implication of an external theta role bearing entity.

<sup>23</sup> I leave aside here the question why German (as many languages) has reflexively marked as well as unmarked anticausatives and how to derive this formal difference; see Schäfer (2008) for discussion.

Therefore, a reflexive pronoun that is merged in Spec,vP to form a reflexive anticausative does not count as closest DP to v for valuation and v has to value its features against the more distant theme in object position.

This system is therefore flexible enough to derive the specific ergative split under discussion as well as standard cases of Burzio's Generalization. It also avoids the look-ahead problem posed by systems that value case features in the syntax. Further, the system can explain why NOM does not depend on Tense, but Tense, nevertheless, often spells out the phi-features of the nominative DP. Finally, the system keeps NOM as real default case.

Interestingly, the concept of dependent case changed; ACC is not dependent on the presence of NOM nor is ACC dependent on the presence of a further DP with structural case. Instead, ACC is dependent on a further DP having agreed with and valued v. That is, the system relates two different encoding mechanisms; morphological case and syntactic Agree, the latter potentially leading to morphological agreement at PF.

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