Amahuaca ergative as agreement with multiple heads[*]

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The mechanisms underlying ergative case assignment have long been debated, with inherent and dependent theories of ergative case emerging as two of the most prominent views. This paper presents novel data from the Panoan language Amahuaca, in which ergative case is sensitive to the position of the transitive subject. The interaction of movement and morphological case assignment in Amahuaca cannot easily be captured by current inherent or dependent case theories. Instead, I argue that a view of ergative case as exponing agreement with multiple functional heads (specifically v and T) is able to account for the Amahuaca data, while incorporating key insights from both inherent and dependent case theories of ergativity. I further demonstrate that this approach that takes case to be the exponence of multiple features is able to be extended to account for elements of the language's case-sensitive switch-reference system as well as its focus-sensitive nominative marking. The Amahuaca data thus suggest that ergative case can be viewed as a feature bundle, rather than a single case feature, and that morphological ergative marking arises as the exponence of structural relationships between multiple heads and a nominal.

1 Introduction

The mechanisms by which case is assigned have long been the subject of exploration in the literature, and the assignment of ergative case has been a topic of particular debate. While some cases, like nominative, have been argued to be structural, and due to Agree under c-command with a functional head, efforts to account for ergative case have turned to different explanations. On the one hand, the connection between ergative case and the role of agent has motivated accounts in which ergative case is inherent, and tied to the agent θ-position, or at the very least to the position as external argument of a transitive v (Woolford, 1997, 2006; Legate, 2006, 2008, among others). Other accounts have instead tried to capture the connection between ergative case and transitivity by proposing that ergative is actually a dependent case assigned on the basis of a relationship between two nominals (Marantz, 1991; Baker, 2014, 2015; Baker and Bobaljik, 2017, among others). Under the latter view, Agree with functional heads plays no direct role in the assignment of case; these

heads serve only to delimit domains in which configurational relationships between DPs are assessed for case assignment.

In this paper, I introduce novel data on ergative case in Amahuaca, a Panoan language, and discuss the problems these data pose for both inherent and dependent accounts of ergative case. In Amahuaca, the assignment of ergative case is sensitive to movement of the subject. When a transitive subject appears to the left of aspect marking, as in (1a), it must bear the ergative case marker =*n*. When the subject appears to the right of aspect, however, as in (1b), this marker is not permitted. Note that similar reorderings have no effect on the case marking of intransitive subjects, (2), or objects, (3).[1]

(1) 'The **man** is killing the peccary.'

    a.   **joni*(=n)**=mun jono   rutu=hi=ki=nu
            man=ERG=C   peccary kill=IPFV=3.PRES=DECL

    b.   jono=mun rutu=hi **joni(*=n)**=ki=nu
            peccary=C kill=IPFV man=ERG=3.PRES=DECL

(2) 'The **children** are arriving.'

    a.   **vaku-vo**=mun nokoo=hi=ki=nu
            child-PL=C   arrive=IPFV=3.PRES=DECL

    b.   nokoo=mun=hi **vaku-vo**=ki=nu
            arrive=C=IPFV   child-PL=3.PRES=DECL

(3) 'The man is killing the **peccary**.'

    a.   **jono**=mun rutu=hi joni=ki=nu
            peccary=C kill=IPFV man=3.PRES=DECL

    b.   rutu=mun=hi joni **jono**=ki=nu
            kill=C=IPFV   man peccary=3.PRES=DECL

The inherent case view struggles to capture this pattern, because ergative is assigned in situ to the external argument on this view. Since inherent case assignment bleeds structural case assignment, leftward movement is not predicted to interfere with case marking. The interrelatedness of movement and case is reminiscent of accusative case assignment in Sakha, which has been argued to provide support for a dependent case analysis (Baker and Vinokurova, 2010). However, I will demonstrate that the particular interactions of movement and case in Amahuaca pose challenges for current versions of dependent case theory. This is because (in contrast to the situation in Sakha) the relevant movement is not

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[1]Examples are presented in the Amahuaca orthography, with approximate correspondences to IPA as follows: <a> = [a], <ch> = [tʃ], <h> = [ʔ], <i> = [i], <j> = [h], <k> = [k], <m> = [m]/[mᵇ], <n> = [n]/[nᵈ], <o> = [o], <p> = [p], <r> = [ɾ], <sh> = [ʃ], <t> = [t], <tz> = [ts], <u> = [ɨ], <v> = [w], <x> = [ç], <y> = [j], <z> = [s], <Vn> = [Ṽ], <VV> = [V:]. The symbol <=> in examples indicates a phonological clitic boundary. These phonologically weak elements which "lean" on adjacent hosts are distinct from syntactic clitics. For more discussion of this issue, see footnote 12. The following abbreviations are used in glossing throughout: 1 = first person, 3 = third person, ACC = accusative, C = complementizer, DECL = declarative, DEM = demonstrative, DS = different subject, EMPH = emphatic, ERG = ergative, GEN = genitive, INT = interrogative, IPFV = imperfective, NOM = nominative, PERF = perfect, PL = plural, PRES = present, PST = past, SG = singular, SO = subject coreferential with object, SS = same subject, TR = transitive, YEST = yesterday.

one that changes c-command relationships between arguments or the spell out domain in which the moving argument finds itself.

These challenges can be overcome, I argue, on a view of ergative case that is neither strictly inherent nor strictly dependent, but rather combines insights from both views. On the treatment of ergative case in Deal 2010, ergative arises for subject DPs that both acquire features reflecting the presence of an object (recalling dependent case) and participate in Agree with functional heads, including v (recalling inherent and more traditional structural views of case assignment). On this type of view, ergative case is a feature complex, rather than an atomic feature. I show that this approach both captures the generalization about word order and case marking in Amahuaca and yields additional insights into the nature of switch-reference and nominative marking in the language. Overall, the picture that emerges suggests that Amahuaca morphological case, in general, does not reflect simplex case features but rather expones complex feature bundles.
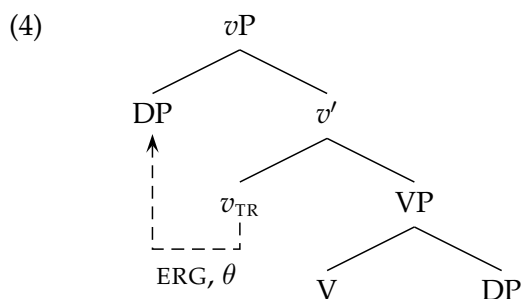
In the following sections I examine the Amahuaca data in further detail and illustrate why an account in which ergative case marking is the result of multiple Agree operations is the most empirically adequate solution for the puzzle that these data present us with. In Section 2, by way of prologue, I briefly summarize the relevant aspects of both an inherent and dependent ergative case account. In Section 3, I discuss the basic clausal structure of Amahuaca and introduce the range of key ergative case data that a theory must be able to account for. In Section 4, I argue that a dependent case account along the lines of Baker 2015 is not adequate to account for the Amahuaca data, illustrating why these patterns do not lend themselves to a view of case in which functional heads play a minimal role. I also discuss why a view of ergative as an inherent case fares no better, even if clausal bifurcation à la Coon 2013 is assumed. In Section 5, I lay out the analysis of ergative case as exponing multiple agreement relationships, specifically agreement with v and T, along the lines of Deal 2010. I show how this account combines insights of inherent and dependent approaches and allows the Amahuaca case and movement generalization to be captured. In Section 6 I introduce further Amahuaca data from the language's switch-reference system, illustrating how the view of ergative case as the exponence of multiple Agree operations yields insight into case-sensitive switch-reference patterns. In Section 7, I briefly discuss Amahuaca's focus-sensitive nominative marking, demonstrating how nominative case also yields itself to a view of case as a feature complex. Finally, in Section 8 I offer concluding remarks.

2   Inherent and dependent ergative case

How ergative case is assigned has been a topic of much debate, due, in part, to the fact that there is a great deal of crosslinguistic variation in the details of which arguments receive morphological ergative marking. Additionally, there are seemingly both syntactic and semantic components involved, with notions such as subjecthood, transitivity, and θ-roles all playing a part in ergative case assignment. Given the empirical diversity of ergative systems, it is likely that ergative case is not derived via a single mechanism crosslinguistically, but rather has different sources in different languages. Here I discuss two of the

main views of ergative case assignment that have emerged in the literature.[2]

On the one hand, ergative has been hypothesized to be an inherent case assigned by a transitive v to an argument that it θ-marks (Woolford, 1997, 2006; Legate, 2006, 2008, among others). Under this view, case is assigned directly by the relevant functional head to an argument in a particular θ-position, which for ergative case is Spec,vP where the external argument is introduced, as seen in (4).

(4)

It has been noted that the tie between ergativity and the specific θ-role of agent is tenuous (Comrie, 1978; Bruening, 2007; Baker, 2014; Baker and Bobaljik, 2017). Non-agent transitive subjects, such as causes or instruments, can be marked ergative (Woolford, 2006), and agent subjects of unergatives do not pattern in a uniform manner across languages. For example, in Basque, subjects of unergatives receive ergative case, as predicted by an agent-oriented view of ergative case, but in many ergative languages unergative subjects receive nominative or absolutive case. To address this issue, Woolford (2006) and Legate (2008) have proposed that an additional transitivity condition be added to the connection between θ-roles and ergative case. Under this view, ergative case is assigned to the external argument of a transitive v, rather than to any (agent) external argument. I will demonstrate in the following sections that this transitivity-oriented view of ergative case is unable to account for case marking in Amahuaca.

The second major view of ergative case assignment takes ergative to be a dependent case, tied to the presence of another DP in the structure (Marantz, 1991; Baker and Vinokurova, 2010; Baker, 2014, 2015; Baker and Bobaljik, 2017, among others). There are variations on this theory which differ slightly; I will take the model most thoroughly articulated in Baker 2015 as my point of comparison. In this view, case is assigned on the basis of c-command relationships between DPs, which are evaluated in particular case domains. These case domains are tied to phases, and, as a result, case is spelled out in phases. For a language that has a dependent ergative case rule, ergative case will be assigned to the higher of two nominals in a c-command relationship within a domain. Baker's ergative case rule is given in (5).

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[2]There are, of course, many other views of ergative systems that have been proposed in the literature besides those outlined here. Overviews of a broader range of such analyses can be found in Johns 2000 and Deal 2015.

(5) Dependent ergative case rule (Baker, 2015, p. 49, modified slightly)[3]
If there are two distinct DPs in the same spell out domain such that DP1 c-commands DP2, then value the case feature of DP1 as ergative unless DP2 has already been marked for case.

For Baker (2015), the phase heads that are relevant for case assignment in the clause are v and C. The complements of these phase heads (VP and TP, respectively) are the spell out domains in which case assignment is evaluated. In each domain, a dependent case rule can be active or inactive. Because case is evaluated in phases, movement can create new c-command relationships which were not present in lower phases. These c-command relationships can then be evaluated for case assignment, thus allowing movement to feed case marking. This is illustrated by the configurations in (6). In (6a), DP2 remains in the lower VP case domain, where it is the only DP that is evaluated for case. Likewise, the higher DP1 is the only DP in the TP case domain. In this configuration, neither DP is eligible to receive dependent case. In contrast, in (6b), the lower DP2 has moved to the edge of vP so that both DP1 and DP2 are in the TP case domain. In this configuration, DP1 could be valued with dependent ergative case, or DP2 could be valued with dependent accusative case (as with Sakha object shift; Baker and Vinokurova 2010).

(6) a. $[_{CP}$ C $[_{TP}$ $\boxed{\text{DP1}}$ T $[_{vP}$ v $[_{VP}$ V $\boxed{\text{DP2}}$]]]]]

b. $[_{CP}$ C $[_{TP}$ $\boxed{\text{DP1}}$ T $[_{vP}$ $\boxed{\text{DP2}}$ v $[_{VP}$ V t_{DP2}]]]]]

This relationship between case and movement, along with the fact that dependent case rules reference only configurational relationships between DPs and say nothing about where arguments are introduced, allows a dependent case view of ergativity to account for why ergative is sometimes assigned to unexpected targets. For example, the assignment of ergative case to internal arguments, as in applicatives of unaccusatives, is unexpected under a view in which ergative case is inherent. Attested examples of raising to ergative (Baker, 2014; Deal, 2019) pose a problem, since an inherent case should be assigned along with a θ-role. The ability to account for case marking in raising examples of this type is a significant advantage of the dependent case view over its inherent case competitor.

Given the relationship between case and movement in Amahuaca, an aspect of dependent case theory as articulated in Baker 2015 which will be relevant for the coming discussion is the question of how case evaluation is timed with respect to movement operations, and relatedly, whether all types of movement are timed in the same way. Particularly applicable to the discussion that follows is Baker's treatment of scrambling. He observes that scrambling often does not affect case assignment and relates this fact to the claim that scrambling is a type of adjunction. He proposes that adjuncts can be spelled out later than arguments, with specifiers and complements being evaluated for case first. This amounts to the claim that case assignment can in some cases appear to precede movement. Additionally relevant for the Amahuaca facts is Baker's proposal that a copy of a DP that has moved to a specifier in a higher domain can serve as a case competitor in a lower domain even though it will be pronounced in the higher domain. This, too, seems to

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[3]In keeping with the DP hypothesis, I have modified the case rule to use DP where Baker (2015) uses NP. For the data considered here, this distinction does not affect the results.

be an instance of case assignment "preceding" movement. The timing of case evaluation effectively before some types of movement can result in c-command relationships at the end of the derivation that do not transparently relate to the case on the involved nominals. Therefore, it is important to consider the details of timing since movement after case assignment can obscure the relevant configurations for dependent case.

In summary, there are three ways in which movement is predicted to affect case marking under the view outlined above. First, movement can change c-command relationships between nominals, with a consequence for the determination of which nominal is eligible for the dependent case. Second, movement can result in nominals moving into domains that are keyed to different case rules. Third, movement can produce or eliminate a local relationship with a case competitor. In the following sections, I will show that none of these effects of movement can fully account for the range of case-marking data in Amahuaca. I conclude that, while movement and case are related in Amahuaca, they are not related in a way that is predicted by a dependent case account. In the next section, I lay the groundwork for this argument by considering the basic clause structure and case-marking patterns that Amahuaca displays.

3 Amahuaca case marking and clause structure

3.1 Case marking

Amahuaca is an endangered Panoan language spoken by approximately 500 speakers in the Peruvian and Brazilian Amazon (Simons and Fennig, 2017). Data for this paper were collected by the author through fieldwork with 11 native speakers (8 female) ranging in age from approximately 25 to 75 in the district of Sepahua in Atalaya Province, Ucayali, Peru during three trips between June 2015 and August 2017.[4] Amahuaca is mixed headed, being mostly head final in the TP domain, but head initial in the CP domain. It is both head marking and dependent marking and has a tripartite case system. As demonstrated in (1), ergative case marking in Amahuaca is sensitive to differences in word order. In this section, I will give an overview of the main patterns of case marking alternations.

Amahuaca's case system has two types of case markers for core arguments of the verb, plus unmarked nouns. Intransitive subjects (S) can be marked with =*x* (and allomorphs) and transitive subjects (A) can be marked with =*n* (and allomorphs). Object DPs (O) remain unmarked. Instances of these case markers are given in (7) and (8).[5] Observe that =*x* is available only for S arguments, while =*n* is available only for A arguments.

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[4]Previous work on Amahuaca includes descriptions of the phonology (Osborn, 1948; Russell and Russell, 1959; Hyde and Loos, 1975), a dictionary (Hyde, 1980), a transformational grammar (Russell, 1965), a paper on reflexives (Hyde, 1973), and a collection of papers by Sparing-Chávez largely reproduced in the form of a short grammar (Sparing-Chávez, 2012). There is also discussion of Amahuaca in several comparative works on languages of the Panoan family, and most of these are based on data from published sources (though Loos 1973 does contain otherwise unpublished data on Amahuaca).

[5]In Section 7 I will show that the nominative case marker =*x* (though not the ergative =*n*) encodes focus in addition to case. I set this complication aside for the time being, and do not indicate focus in translations until Section 7.

(7)   **vaku**{***=n / =x**}=mun   rakuu=xo=nu
         child{=ERG / =NOM}=C be.afraid=3.PST=DECL
         'The **child** was afraid.'

(8)   **xano**{**=n / *=x**}=mun   **chopa**{***=n / *=x**}   patza=hi=ki=nu
         woman{=ERG / =NOM}=C clothes{=ERG / =NOM} wash=IPFV=3.PRES=DECL
         'The **woman** is washing **clothes**.'

This pattern suggests an underlying tripartite case system with nominative, ergative, and accusative case, where accusative is morphologically unmarked. A complication to the picture in (7) and (8) is a pattern of differential subject marking in Amahuaca, which has been noted in descriptions of the language dating back to Russell 1965.[6] Both types of subjects (transitive and intransitive) can surface in the morphologically unmarked form under the right conditions, suggesting that the unmarked form is actually a type of default (Legate, 2008), rather than marking accusative or absolutive case directly. I will return to a discussion of nominative case marking in Section 7, but for now, I will focus on the conditioning of ergative case marking.

As mentioned previously, ergative case marking is sensitive to word order, which reflects structural differences in the position of the DP. We can divide the patterns of word order and case marking into two distinct sets of possibilities: those involving sentences with overtly marked aspect and those involving sentences where aspect is not marked. Though these two types of sentences show different possibilities in terms of case marking, Amahuaca does not exhibit a traditional TAM split in the marking of ergative case (in contrast, e.g., to Hindi-Urdu; Mahajan 1990); ergative case is available with all aspectual categories. In transitive sentences with overtly marked aspect (either =*hi* for imperfective, =*hax* for perfect, or =*nox* for habitual), there are seven possible word orders, which result in two different case marking patterns for A arguments. The examples in (9) represent all of the attested word order and case marking combinations; other combinations of case marking and word order permutations are judged to be ungrammatical.[7]

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[6]Additional work which mentions this pattern in Amahuaca includes Hyde (1980) and Sparing-Chávez (2012). It has also been discussed in comparative work on Panoan, which mentions a similar but distinct pattern in Chacobo (Loos, 1973, 1999). With respect to the Amahuaca pattern, Sparing-Chávez (2012) notes that split ergativity is conditioned by the presence of overt aspect marking in the clause. She observes that when overt aspect marking is absent, ergative case surfaces. When overt aspect marking is present, however, she makes the generalization that only "pragmatically marked" subjects, which she shows only in initial position, receive nominative or ergative case marking. Here I refine the characterization of the Amahuaca pattern, demonstrating that even non-initial subjects receive ergative case marking, so long as they surface to the left of aspect marking. This pattern is different from the pattern of nominative marking, which does appear to be conditioned by information structure in a way consistent with Sparing-Chávez's characterization, as discussed in Section 7.

[7]I set aside here those sentences involving extraposition to the far right, as there is a large prosodic break between the final mood clitic and the extraposed constituent. See footnote 20 for an example of such a construction.

(9) 'The **man** is killing the peccary.'

    a. **joni=n**=mun jono   rutu=hi=ki=nu
        man=ERG=C peccary kill=IPFV=3.PRES=DECL

    b. jono=mun **joni=n**   rutu=hi=ki=nu
        peccary=C man=ERG kill=IPFV=3.PRES=DECL

    c. rutu=mun **joni=n**   jono=hi=ki=nu
        kill=C   man=ERG peccary=IPFV=3.PRES=DECL

    d. rutu=mun jono   **joni=n**=hi=ki=nu
        kill=C   peccary man=ERG=IPFV=3.PRES=DECL

    e. rutu=mun=hi **joni** jono=ki=nu
        kill=C=IPFV   man peccary=3.PRES=DECL

    f. rutu=mun jono=hi   **joni**=ki=nu
        kill=C   peccary=IPFV man=3.PRES=DECL

    g. jono=mun rutu=hi **joni**=ki=nu
        peccary=C kill=IPFV man=3.PRES=DECL

In (9a)-(9d), the subject is marked ergative. In (9e)-(9g), on the other hand, the subject remains unmarked.[8]

    The pattern found with sentences lacking overt aspect marking is slightly different. These sentences, which receive a perfective interpretation, do not allow the orders found in (9e)-(9g), and thus always result in the A argument being marked ergative. All of the attested grammatical word order and case combinations for perfective sentences are given in (10); other word order permutations are judged to be ungrammatical, as are sentences lacking ergative case marking.[9]

(10) 'The **man** killed the peccary'

    a. **joni=n**=mun jono   ha=xo=nu
        man=ERG=C peccary do.TR=3.PST=DECL

    b. jono=mun **joni=n**   ha=xo=nu
        peccary=C man=ERG do.TR=3.PST=DECL

    c. ha=mun **joni=n**   jono=xo=nu
        do.TR=C man=ERG peccary=3.PST=DECL

    d. ha=mun jono   **joni=n**=xo=nu
        do.TR=C peccary man=ERG=3.PST=DECL

As seen in the above examples, without overt aspect marking, an A argument always surfaces with ergative case. For now, I will focus on examples with overt aspect marking,

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[8]As an anonymous reviewer suggests, one partial generalization that could be made about the data is that when either argument DP surfaces with a clitic attached to it, the subject is unmarked. This pattern could perhaps arise if a DP that hosts a clitic is "invisible" for the purpose of case assignment. However, this generalization fails to account for the presence of ergative marking in (9c) and (9d), as well as in (10c) and (10d).

[9]The verb *ha* glossed 'do.TR' is a general purpose transitive verb in Amahuaca. It can be used for a transitive action if the meaning of the verb can be recovered from context. In these sentences it is used to mean 'kill'. The same pattern of case and aspect marking is found with this verb as with full lexical verbs like *rutu* 'kill'.

like those in (9), because it is there that an alternation is seen. However, I will return to a discussion of sentences without overt aspect in Section 5.

Taking into account only sentences that have overt aspect marking, we can schematize the possible word orders as in (11).[10]

(11)											
a.	**A=ERG**	C		O		V	ASP			T
b.	O	C	**A=ERG**			V	ASP			T
c.	V	C	**A=ERG**	O			ASP			T
d.	V	C	O		**A=ERG**		ASP			T
e.	V	C					ASP	**A**	O	T
f.	V	C	O				ASP	**A**		T
g.	O	C				V	ASP	**A**		T

Examining the distribution of ergative case, the descriptive generalization in (12) emerges.

(12)   Amahuaca ergative case generalization
       If a transitive subject appears to the right of aspect, it is not marked ergative; otherwise, it receives ergative case marking.

I propose that this generalization stems from the fact that the subject DP occupies a different structural position when it is case marked compared to when it is unmarked. Specifically, when a subject stays low in the structure, in its externally merged position in Spec,*v*P, it is unmarked. Only when it moves further up in the structure does it receive ergative case marking. Thus movement feeds ergative case marking.

3.2   Clause structure

In order to understand how case marking and movement interact, we now turn to the structure of the clause in Amahuaca. Specifically, movement can be diagnosed with respect to three projections, which serve as "landmarks" in the clause. These are Asp, T, and C.[11]

Amahuaca has a second position clitic =*mun*, which is preceded by exactly one XP, as demonstrated in (13) with a DP, (13a), a PP, (13b), and an embedded clause, (13c).[12]

(13)   a.   [xano=n   hino]**=mun** jiri=hi=ki=nu
               woman=GEN dog=C   eat=IPFV=3.PRES=DECL
               'The woman's dog is eating.'

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[10]Here and in following schematic representations I leave out Mood, which invariably surfaces following T.

[11]While many languages have non-finite clauses which lack some or all of these projections, Amahuaca seems to lack such clauses. Where one might expect such non-finite clauses to arise, Amahuaca uses a rich system of finite switch-reference clauses, discussed in Section 6.

[12] Like many of the inflectional morphemes of Amahuaca, =*mun* is a phonologically weak element which cliticizes to the element it linearly follows. I assume, following Zwicky and Pullum (1983), that the positioning of morphophonological clitics in a sentence is syntactically governed. That is, these phonologically weak clitics form syntactically independent elements. As can be seen in (13), the amount of phonological material preceding =*mun* does not matter. Rather, the clitic's placement is sensitive to syntactic constituency. Finally, note that morphophonological clitichood is distinct from syntactic clitichood (where syntactic clitics are often analyzed as an instance of D in the verbal complex; Kramer 2014). The relevant clitics in Amahuaca are not pronoun-like, ϕ-feature-encoding morphemes.
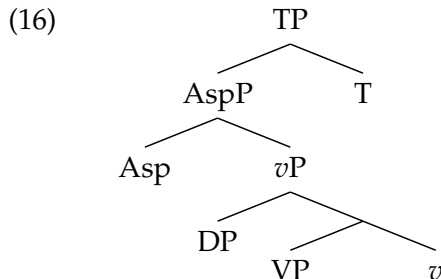
b. [nihi muran]**=mun** joni=n   jiriti vuna=xo=nu
   forest inside=C   man=ERG food look.for=3.PST=DECL

   'The man looked for food in the woods.'

c. [hino koshi   ka=kun]**=mun** Juan=nun Maria yohi=xo=nu
   dog   quickly go=DS=C   Juan=ERG Maria say=3.PST=DECL

   'Juan told Maria that the dog had run.'

On the basis of these syntactic second position effects, I propose that the clitic =*mun* is in C. Further evidence for =*mun* being in the C domain comes from the fact that it is required in all declarative matrix clauses, but disappears in questions or in embedded clauses.[13] Evidence that =*mun* is not the lower head T comes from the fact that it does not have the general semantics of T, as it is invariant across tenses. If =*mun* is in C, the constituent to its left will be in Spec,CP. This position must obligatorily be filled in Amahuaca, reflecting an EPP feature on C. Movement to Spec,CP is associated with information structural effects, which will be discussed further in Section 7.

The Amahuaca verb can appear in multiple positions in the structure, raising the question of what types of movement the verb can undergo. As shown in (11), one position in which the verb can appear is immediately before aspect marking. When the verb appears in this position, the subject can either appear to the right of aspect, intervening between aspect and tense, (14), or in one of multiple positions to the left of the verb, depending on whether it is the object or subject that is moved to Spec,CP, (15).

(14) kuntii=mun **choka=hi**   xano=ki=nu
      pot=C   wash=IPFV woman=3.PRES=DECL

      'The woman is washing a pot.'

(15) 'The woman is washing a pot.'

   a. kuntii=mun xano=n   **choka=hi**=ki=nu
      pot=C   woman=ERG wash=IPFV=3.PRES=DECL

   b. xano=n=mun   kuntii **choka=hi**=ki=nu
      woman=ERG=C pot   wash=IPFV=3.PRES=DECL

The ability of aspect to appear sentence-medially (i.e. to the left of the subject) suggests that it is a head initial projection, as schematized in (16).
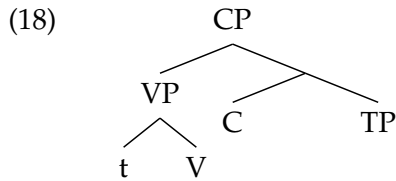
(16)

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[13]This is consistent with Rizzi's (1997) characterization of Force in his split CP model. For present purposes, I make the simplifying assumption that CP is not split in Amahuaca and accordingly speak simply of a CP projection. Further aspects of the C projection will be discussed in connection with information structure in Section 7.

Assuming that low subjects are in their externally merged position in Spec,*v*P, and that *v*P is the complement of Asp, a head initial AspP straightforwardly allows for the post-aspect position of subjects.[14] I will assume, therefore, that AspP is head-initial and that the verb undergoes head movement through *v* to Asp to form a complex head with aspect in structures where the verb immediately precedes the aspect marker.

While head movement seems to be one option for movement of the Amahuaca verb, it does not seem to be the only type of movement that the verb can undergo. The verb can also appear sentence-initially in Spec,CP before the second position clitic =*mun*, as in (17).

(17) **choka**=mun xano=n   kuntii=hi=ki=nu
      wash=C   woman=ERG pot=IPFV=3.PRES=DECL

      'The woman is washing a pot.'

The appearance of the verb in this initial phrasal position suggests that VPs can also undergo remnant movement, with verb-initial structures analyzed as in (18).

(18)

The availability of remnant fronting of VP suggests that object DPs vacate the VP. This is reminiscent of German scrambling, in which the object DP moves out of VP to a position higher in the structure (Thráinsson, 2001; Vikner, 1994). Following Roberts (2010), I assume that object DPs in languages with scrambling escape the *v*P phase by moving to a specifier of *v*P. When the subject and object both remain in *v*P (i.e. when they appear to the right of aspect), the only available position for the object is to the right of the subject, as in (19).[15]

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[14]Note that the structure proposed in (16) violates the Final-Over-Final Condition (FOFC), which mandates that head final projections cannot dominate head initial projections within the same extended projection (Biberauer et al., 2014; Sheehan et al., 2017). In (16), the head final TP projection dominates the head initial AspP projection. If FOFC is derived as a constraint on rightward movement (Zeijlstra, 2016) rather than stemming from Kayne's (1994) Linear Correspondence Axiom or direct restrictions on headedness of projections, this is not an issue. The proposal for the Amahuaca structures involves no rightward movement, except for head movement between adjacent heads, which is permitted under Zeijlstra's (2016) model. An alternative approach postulating a head-final Asp which undergoes movement to a medial position (presumably in at least some instances undergoing head movement as a complex head with the verb) faces the challenge of identifying the projection targeted by movement. If movement targeted a head-initial projection as its landing site, there would still need to be a head-initial projection between T and *v*, and so the FOFC violation would remain in place. Assuming a head initial AspP (together with Zeijlstra's treatment of FOFC) therefore seems to be the most straightforward account, given the lack of evidence that Asp can ever occur further to the right. I refer the reader to Clem 2018 for a more detailed discussion of FOFC as it relates to this structure in Amahuaca.

[15]The sentence in (19b) is ungrammatical on the intended reading but is grammatical on the reading 'The peccary is killing the man'.
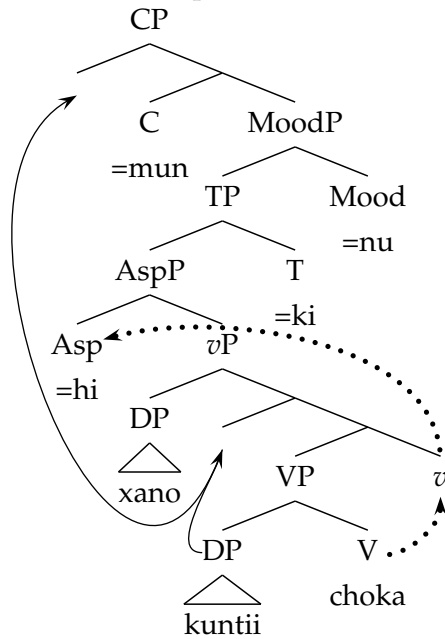
(19) 'The man is killing the peccary.'

    a.   rutu=mun=hi joni **jono**=ki=nu
         kill=C=IPFV   man peccary=3.PRES=DECL

    b. * rutu=mun=hi **jono**   joni=ki=nu
         kill=C=IPFV   peccary man=3.PRES=DECL

This suggests that the object DP is attracted to an inner specifier position of *v*P; it tucks in (Richards, 1999). From this position it can, but does not have to, subsequently move higher in the clause.

    Given the previous discussion, the proposed overall clausal structure for the sentence in (14), repeated as (20) below, can be seen in (21), with the object DP ultimately moving to Spec,CP.

(20)   kuntii=mun choka=hi   xano=ki=nu
        pot=C   wash=IPFV woman=3.PRES=DECL

        'The woman is washing a pot.'

(21)   O=C V=Asp A=T=Mood

In the tree in (21), the object DP *kuntii* 'pot' is externally merged as the complement of the verb *choka* 'wash' and the subject DP *xano* 'woman' is externally merged in the specifier of *v*P. The object moves out of VP into an inner specifier of *v*P, in keeping with the evidence from remnant VP fronting. The verb then undergoes head movement through *v* to Asp to form a complex head and arrive in its sentence medial position. Finally, the object moves to Spec,CP.[16] In this structure, the subject stays in situ and is not marked ergative, as discussed in Section 3.1.

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[16]In Section 7 I discuss the fact that movement to Spec,CP is typically related to focus.

With this understanding of basic clause structure, we are now in a position to explore how inherent and dependent case accounts of ergativity can be applied to the Amahuaca data. I will demonstrate that neither type of account is able to fully capture the range of patterns that Amahuaca exhibits.

4 Amahuaca ergative is neither inherent nor dependent

As discussed in Section 2, the assignment of ergative case has been analyzed in many ways, with inherent and dependent views of ergative case emerging as major contenders in recent work. In this section, I will argue that neither of these views can account for the Amahuaca case-marking patterns that were outlined in Section 3.

4.1 Amahuaca ergative is not an inherent case

The most straightforward version of an inherent case account of Amahuaca ergativity appears to be a non-starter since it is subjects that remain in situ in their externally merged position as the external argument of *v* that are *not* marked ergative. DPs that are externally merged in Spec,*v*P are exactly the DPs that an inherent case account would predict to be ergative.

A modified inherent case account along the lines of Coon 2013, which takes unmarked subjects to be the result of clausal bifurcation with an aspectual auxiliary, seems potentially more promising. This is because unmarked subjects are only possible with overtly marked aspect in Amahuaca. Under this view, aspectual auxiliaries split the clause, creating two case assignment domains. The lower domain contains the main verb and the object. The higher domain contains an intransitive aspectual auxiliary and the subject, which is treated as an S argument since it is the subject of this intransitive auxiliary. To apply this view to Amahuaca we would need to assume that, in sentences with overt aspect, unmarked subjects are externally merged as the subject of an intransitive aspectual auxiliary while ergative-marked subjects are merged as the subject of a transitive main verb. The view of clausal syntax laid out in Section 3.2 is hard to reconcile with this type of account since unmarked subjects would actually be those that appear *lower* than the aspect marker. This is not what we would expect if they were introduced by an aspectual auxiliary.

A potential solution is to reconsider the assumptions about the syntax of the clause. Perhaps unmarked subjects are, indeed, introduced higher by an aspectual auxiliary and marked subjects are those which are introduced in the lower transitive domain containing the main verb and the object. This would mean that sentences like (9g) have a structure as in (22).

(22)   jono$_i$=mun [[t$_i$ rutu] =hi **joni**] =ki=nu
        peccary=C   kill   IPFV man 3.PRES=DECL
        'The man is killing the peccary.'

In (22), the object (which moves to Spec,CP) is externally merged in the lower domain with the verb *rutu* 'kill'. The subject *joni* 'man' is not merged in this domain. Instead, the subject is externally merged as the subject of the imperfective aspectual auxiliary. As the subject

of an intransitive auxiliary, *joni* does not receive ergative case. A similar structure where ergative is assigned would look like (23).

(23) jono$_i$=mun [[**joni=n** t$_i$ rutu] =hi] =ki=nu
      peccary=C man=ERG   kill   IPFV 3.PRES=DECL
      'The man is killing the peccary.'

In (23), the ergative marked subject is externally merged in the lower domain with the object. This domain is transitive, which means that the subject will be assigned inherent ergative case.

   What is puzzling from the perspective of such an account is the obligatoriness of ergative marking on A arguments that appear in initial position in Amahuaca. It is ungrammatical for the subject in (24), repeated from (9a), to surface in the unmarked form.

(24) **joni*(=n)**=mun jono   rutu=hi=ki=nu
      man=ERG=C   peccary kill=IPFV=3.PRES=DECL
      'The man is killing the peccary.'

In (24), if it were possible for the subject to have been externally merged as the subject of the intransitive auxiliary and then moved to the initial position, we would expect that it could surface without ergative marking. This is impossible. This is especially puzzling since arguments which move to the initial position always surface with the case appropriate for the clause from which they originated, even if moving from an embedded clause, as shown in (25)-(27) for nominative, ergative, and accusative (unmarked) case.[17]

(25) **xano$_i$=x**=mun   [t$_i$ nokoo=kun] joni=n   hatza jovaa ha=xo=nu
      woman=NOM=C   arrive=DS   man=ERG manioc cooked do.TR=3.PST=DECL
      'After the woman arrived, the man ate manioc.'

(26) **joni$_i$=n**=mun [t$_i$ hamun   vuchi=shin=hax]   junu naki ka=xo=nu
      man=ERG=C   capybara find=YEST=SS.NOM river to   go=3.PST=DECL
      'The man found a capybara yesterday and went to the river.'[18]

(27) **hatza$_i$**=mun [xano=n   t$_i$ vana=kun] joni jo=xo=nu
      manioc=C   woman=ERG plant=DS   man come=3.PST=DECL
      'After the woman planted manioc, the man came.'

Since we can see that case is typically preserved in extraction to the left edge, it is unclear why unmarked subject DPs are ungrammatical in this position when the main verb of their clause is transitive. To rule this out, we would have to propose some independent

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[17]Rightward extraposition in Amahuaca displays a similar pattern with respect to ergative case. Extraposition shows case connectivity, and it is impossible for the subject of a clause with a transitive main verb to surface in the unmarked form when it is extraposed.

[18]Note that the switch-reference marker =*hax*, glossed as a same subject nominative marker, does not itself expone case but rather indicates whether the matrix subject is a nominative S argument or an ergative A argument. This is discussed further in Section 6.

mechanism to block movement to Spec,CP for subjects which are externally merged as arguments of Asp.

An additional fact which is potentially problematic for a clausal bifurcation story is the lack of ergative case marking in an example like (9e), repeated as (28).

(28) rutu=mun=hi **joni** jono=ki=nu
      kill=C=IPFV   man peccary=3.PRES=DECL
      'The man is killing the peccary.'

In (28), the object is to the right of the subject and aspect. This could mean that the object is externally merged in this position. If the object is selected by the auxiliary, it is unclear why this domain is not considered transitive with its subject *joni* eligible for ergative marking. Another possibility would be for the object to be externally merged in the lower domain with the main verb and move into this higher position. However, this would constitute an instance of rightward movement, which has been argued to be dispreferred or ruled out entirely (Ackema and Neeleman, 2002; Abels and Neeleman, 2012). The question would then be how to constrain such instances of rightward movement.[19]

I conclude that a clausal bifurcation account, while more adequate than a simpler version of an inherent case account, is still unable to account for the full range of Amahuaca data without other stipulations. It does not appear that unmarked subjects are introduced by an intransitive aspectual auxiliary and lack ergative case for this reason.

4.2   Amahuaca ergative is not a dependent case

We turn now to a dependent case account. We might expect more promising results since dependent case theory is designed, in part, to capture the interactions of movement and case assignment (Baker and Vinokurova, 2010). Given the configurational nature of case assignment in a dependent case model, movement should be able to feed and bleed case assignment, as outlined in Section 2. Since movement to a higher position in Amahuaca appears to feed ergative case assignment, this seems like a good candidate for a dependent case account. However, we will see that no singular, unified set of assumptions can characterize case domains such that low subjects remain unmarked while moved subjects receive ergative case. Additionally, a dependent case account offers no insightful way to capture the generalization in (12) that it is the position of the subject with respect to aspect that is the predictor of the case of the subject. Dependent case misses the generalization that, in Amahuaca, it is the position of DPs with respect to functional heads, rather than other DPs, which determines morphological case.

Recall Baker's ergative case rule from (5), repeated in (29) below.

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[19]A further potential concern for a clausal bifurcation account from a typological perspective is the fact that the Amahuaca split is not a canonical TAM split. Variation between ergative marked A arguments and unmarked A arguments is present even within a single aspectual category. That is to say the same aspect categories appear in clauses with and without ergative marking on transitive subjects. Additionally, it is not the case that unmarked subjects occur with one set of (progressive) aspectual categories and marked subjects occur with another set of (completive) aspectual categories. Instead all overt aspect markers (imperfective, perfect, habitual) allow for the possibility of unmarked subjects. Coon (2013) notes, however, that an aspect split triggered by all aspect markers is, in principle, possible, so long as the aspect markers are expressed by auxiliaries.

(29)   Dependent ergative case rule (Baker, 2015, p. 49, modified slightly)
         If there are two distinct DPs in the same spell out domain such that DP1 c-
         commands DP2, then value the case feature of DP1 as ergative unless DP2 has
         already been marked for case.

As outlined in Section 2, the spell out domains for case assignment are tied to phases. Specifically, the phase heads for clausal case assignment assumed in Baker's (2015) model are v and C. The complements of the phase heads (VP and TP) are the spell out domains in which case assignment is evaluated. Therefore, there are four possibilities for the domains in which the ergative case rule can be active. A language can assign ergative in only VP, in only TP, in VP and TP, or in neither VP nor TP.

   Since Amahuaca has ergative marked DPs, the option of assigning ergative at neither domain is obviously incorrect. Therefore, the first option to consider is one in which the ergative case rule is active only in the VP. In monotransitive predicates this rule would result in no DPs being marked ergative. Since only the object DP is generated in VP, there would be no c-command relationship between two DPs and no DP would be assigned case by the ergative rule. If a predicate contains more than one DP in the complement of v, we expect a different outcome. Specifically, we would expect the higher of the two nominals to receive ergative case marking. That is, we expect dative case to be syncretic with ergative. This is not what we find. Instead, both arguments are unmarked, as seen in (30).

(30)   joni=n=mun **xano**   **jiriti** hinan=hi=ki=nu
         man=ERG=C woman food give=IPFV=3.PRES=DECL
         'The man is giving the woman food.'

In this example we would expect *xano* 'woman' to be marked with the ergative marker if it c-commands the DP *jiriti* 'food'. However, it remains unmarked. Therefore, it appears that the ergative rule should not be keyed to VP in Amahuaca. This also rules out an account in which ergative is keyed to both VP and TP, though this account would be no different for subjects than the option where the ergative rule is keyed only to TP.

   This leaves us with the fourth and final option for the domain of ergative case assignment, which is keying the rule only to TP. In evaluating this possibility, I will first assume that the surface position of a DP reflects the position in which it was evaluated for case. This amounts to assuming that movement within a phase precedes case assignment. Under this assumption, a dependent case account correctly derives (9c), repeated as (31), below.

(31) $[_{CP}[_{VP}$ t_i rutu] =mun $[_{TP}$ **joni**$_j$**=n**   jono$_i$=hi $[_{vP}$ t_j t_i $t_{VP}]$ =ki]=nu]
              kill   =C   man=ERG peccary=IPFV   =3.PRES=DECL
         'The man is killing the peccary.'

In this configuration, the subject and object DPs are both within TP with the subject higher than the object. This results in the subject being marked with ergative case.

   This same set of assumptions can also derive the pattern seen in (9g), repeated in (32).

(32) [$_{CP}$ jono$_i$=mun [$_{TP}$ rutu=hi [$_{vP}$ **joni** t$_i$ [$_{VP}$ t$_i$ t$_V$]] =ki]=nu]
       peccary=C   kill=IPFV   man   =3.PRES=DECL
       'The man is killing the peccary.'

In this structure, the object DP has moved to Spec,CP before the complement of C is spelled out. This results in only one DP being present in TP when case is assigned. Because there are no c-command relationships, no DP is assigned ergative case, resulting in the unmarked object and subject that we find.

While this account can derive the patterns in (31) and (32), it cannot capture the patterns of ergative marking in (9a) and (9b), repeated below as (33a) and (33b), respectively.

(33) a. [$_{CP}$ **joni**$_j$**=n**=mun [$_{TP}$ jono$_i$ rutu=hi [$_{vP}$ t$_j$ t$_i$ [$_{VP}$ t$_i$ t$_V$]] =ki]=nu]
           man=ERG=C   peccary kill=IPFV   =3.PRES=DECL
           'The man is killing the peccary.'

      b. [$_{CP}$ jono$_i$=mun [$_{TP}$ **joni**$_j$**=n**   rutu=hi [$_{vP}$ t$_j$ t$_i$ [$_{VP}$ t$_i$ t$_V$]] =ki]=nu]
           peccary=C   man=ERG kill=IPFV   =3.PRES=DECL
           'The man is killing the peccary.'

As in (32), in both of the examples in (33) one DP has moved to Spec,CP, escaping the spell out domain of TP. As in (32), this should result in no DP being marked with ergative case since there is no case competitor within the TP. However, the subject is marked with ergative case in both sentences, regardless of whether it remains in TP, as in (33b), or is itself the DP moved to Spec,CP, as in (33a).

Another problem is raised by the data in (9d) and (9f), repeated as (34a) and (34b), respectively.

(34) a. [$_{CP}$[$_{VP}$ t$_i$ rutu] =mun [$_{TP}$ **jono**$_i$**(*=n)**   **joni**$_j$***(=n)**=hi   [$_{vP}$ t$_j$ t$_i$ t$_{VP}$]
              kill   =C   peccary=ERG man=ERG=IPFV
           =ki]=nu]
           =3.PRES=DECL
           'The man is killing the peccary.'

      b. [$_{CP}$[$_{VP}$ t$_i$ rutu] =mun [$_{TP}$ **jono**$_i$**(*=n)**=hi   [$_{vP}$ **joni**$_j$**(*=n)** t$_i$ t$_{VP}$] =ki]=nu]
              kill   =C   peccary=ERG=IPFV   man=ERG   3.PRES=DECL
           'The man is killing the peccary.'

In these structures, the object appears below C but to the left of the subject. The dependent case account wrongly predicts that the object should receive ergative case. This is because when the CP phase is spelled out the object and subject are both within TP and the object is higher than the subject.

Finally, the dependent case account is unable to account for why the subject in (9e), repeated below as (35), does not receive ergative case marking.

(35) [$_{CP}$[$_{VP}$ t$_i$ rutu] =mun [$_{TP}$ =hi   [$_{vP}$ **joni(*=n)** jono$_i$ t$_{VP}$]] =ki]=nu]
          kill   =C   =IPFV   man=ERG peccary   =3.PRES=DECL
       'The man is killing the peccary.'

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In this configuration, both the object and the subject are within TP at spell out (both are on the vP edge). Additionally, the subject c-commands the object. These DPs should therefore be in exactly the configuration that is predicted to yield ergative case on the subject, but ergative marking in this configuration is impossible.

Under the most straightforward interpretation of the dependent case model we do not obtain the desired results. We might therefore ask whether the facts can be accounted for by reference to a factor other than the domains in which case rules are active. In the previous discussion, it was assumed that surface positions reflect the positions at which DPs were spelled out and evaluated for case. As mentioned above, this amounts to assuming that all movement within a phase happens prior to the evaluation of c-command relationships for case. However, as discussed in Section 2, Baker (2015) proposes that some types of movement may be timed after case assignment. If we assume that movement and case assignment within a phase can be interleaved, a dependent case account is able to capture more (though still not all) of the Amahuaca data. This type of account predicts that the subject should always surface with ergative case since a copy of the object on the vP edge will be able to serve as a case competitor. Unmarked transitive subjects are not predicted to exist.

One type of movement that Baker (2015) assumes can "follow" case assignment is scrambling. He appeals, as discussed in Section 2, to the idea that scrambling is a form of adjunction and that adjuncts can be spelled out later than specifiers and complements (Baker, 2015, p. 264-272). If specifiers and complements are spelled out first and dependent case is calculated based only on these positions of DPs, subsequent scrambling and spell out of these DPs in their scrambled positions will not affect case. If we assume this revised, more complex approach to the timing of case assignment and scrambling in Amahuaca, we can correctly derive the pattern in (9d), repeated in (36).

(36) $[_\text{CP}[_\text{VP}\ t_i\ \text{rutu}]$ =mun $[_\text{TP}\ \text{jono}_i$ **joni**$_j$**=n**=hi $[_{vP}\ t_j\ \cancel{\text{jono}_i}$ $t_\text{VP}]$ =ki]=nu]
         kill   =C   peccary man=ERG=IPFV   peccary   =3.PRES=DECL
        'The man is killing the peccary.'

The crucial idea here is that object movement to the surface position involves scrambling. If we assume that the subject and the lower copy of the object in Spec,vP are spelled out first and evaluated for case, this results in the subject being marked with ergative case. The copy of the object that is scrambled across the subject is then spelled out later and does not affect case. The lower copy of the object that was the case competitor is then not pronounced.

Baker (2015) also considers how the timing of movement to Spec,CP interacts with case assignment. *Wh*-movement is taken to not typically affect case assignment (Baker, 2015, p. 270-271). The reasoning behind this is that it moves a DP out of the domain of case evaluation. However, it must be assumed that a lower copy within TP is still evaluated in the spell out of TP to avoid the problem, mentioned above, of no DP receiving case. If we assume that movement to Spec,CP cannot establish a new c-command relationship for case assignment but that the lower copy of the moved element can still count as a case competitor, the patterns in (9a) and (9b), repeated as (37a) and (37b), respectively, can be derived.

(37) a. [CP **joni**$_j$**=n**=mun [TP jono$_i$ rutu=hi [$_{v}$P ~~joni$_j$~~ ~~jono$_i$~~ [VP t$_i$ t$_V$]]
man=ERG=C   peccary kill=IPFV   man peccary
=ki]=nu]
=3.PRES=DECL
'The man is killing the peccary.'

   b. [CP jono$_i$=mun [TP **joni**$_j$**=n**   rutu=hi [$_{v}$P t$_j$ ~~jono$_i$~~   [VP t$_i$ t$_V$]] =ki]=nu]
peccary=C   man=ERG kill=IPFV   peccary   =3.PRES=DECL
'The man is killing the peccary.'

In both of the examples in (37), if a lower copy of the element that undergoes movement to Spec,CP is evaluated in TP, the subject will c-command the object and receive ergative case. In (37a), the copy of the subject on the edge of vP c-commands the copy of the object on the vP edge, and the subject is assigned ergative. However, the subject DP is not pronounced in this position (nor is the object). Instead, the copy of the subject that is moved to Spec,CP is pronounced with the ergative case that it inherits from the lower copy. In (37b), what is important is that a lower copy of the object DP within TP is evaluated as a case competitor for the subject. This results in the subject receiving ergative case. The lower copy of the object is then deleted since it is the higher copy in Spec,CP that is pronounced.

While this solution that assumes a lower copy will be evaluated in TP when a DP undergoes scrambling or movement to Spec,CP derives the facts in (37), it poses a problem for the data in (9g). While this pattern, repeated in (38), could previously be accounted for under the assumption that overt positions of DPs reflect the position in which they were spelled out and evaluated for case, it cannot be captured with these revised assumptions.

(38)   [CP jono$_i$=mun [TP rutu=hi [$_{v}$P **joni(*=n)** ~~jono$_i$~~   [VP t$_i$ t$_V$]] =ki]=nu]
peccary=C   kill=IPFV   man=ERG peccary   =3.PRES=DECL
'The man is killing the peccary.'

The nature of the problem is this: the same assumptions that are necessary to derive the data in (37) (namely the evaluation of a lower copy of a moved DP), wrongly predict that the subject in (38) should receive ergative case. If the lower copy of the object in Spec,vP counts as a case competitor, the subject should surface with ergative case, but that is ungrammatical. There seems to be no principled way to ensure that movement to Spec,CP leaves a copy that counts as a case competitor in some structures but not in others, especially given the contrast between (37b) and (38). The only difference between these two structures is the position of the subject, but the subject is still in the same domain as the copy of the object in both structures.

An additional issue that remains for a dependent case account, even with these revised assumptions, is the unavailability of ergative case on the subject in (9e) and (9f), repeated again in (39a) and (39b), respectively.

(39) a. [CP[VP t$_i$ rutu] =mun [TP =hi   [$_{v}$P **joni(*=n)** jono$_i$ t$_{VP}$]] =ki]=nu]
kill   =C   =IPFV   man=ERG peccary   =3.PRES=DECL
'The man is killing the peccary.'

b.   [$_{\text{CP}}$[$_{\text{VP}}$ t$_i$ rutu] =mun [$_{\text{TP}}$ jono$_i$=hi   [$_{vP}$ **joni$_j$(*=n)** ~~jono$_i$~~   t$_{\text{VP}}$]
            kill   =C   peccary=IPFV   man=ERG peccary
       =ki]=nu]
       3.PRES=DECL
       'The man is killing the peccary.'

It is unclear how the subject could be considered to be in a non-local relationship with the overt object DP in (39a) or the lower copy of the object that is left before scrambling in (39b). This is true regardless of the domain of case evaluation. If the domain were AspP or TP instead of CP, the same result would hold. The subject would c-command the object at spell out, resulting in ergative case being assigned to the subject.[20]

Finally, one might wonder whether treating Asp as the crucial lower phase head might yield the desired results, given the importance of the position of aspect in the surface generalization in (12). If we keep the rest of the assumptions we have adopted, this would mean that the lower case domain would be the complement of Asp: vP. No ergative case would be assigned here. Then, ergative case would be assigned in TP, as before. The problem with this account is that the subject and object are always in a c-command relationship within vP. Even if they both move into TP to a configuration where the subject c-commands the object, this c-command relationship will not be new since the subject previously c-commanded the object in a lower position. For the application of dependent case rules, only new c-command relationships are considered. This facet of the theory is crucial for Baker's treatment of ditransitives as well as dyadic unaccusatives (2015: 230-246). Given that the c-command relationship between the subject and object will never be new in the TP case domain, we would expect that ergative case would never be assigned in Amahuaca.[21]

Returning now to the second, most successful set of assumptions we considered, it is not accidental that the same crucial configuration is involved in the three structures which cannot be accounted for: (38), (39a), and (39b). In all of these structures, the subject remains in Spec,vP. It is in these configurations, where the subject remains to the right of aspect, that ergative case is not assigned, as stated in (12). A dependent case account is unable to derive this generalization about the position of the subject with respect to aspect

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[20] It is potentially worth noting here that this structure does not involve rightward extraposition of the subject, an operation which could potentially remove the subject (and object) from a case domain. There is evidence that rightward extraposition of the subject is possible in Amahuaca. In such structures the extraposed constituent appears to the right of the final tense and mood particles and can surface with ergative case, as demonstrated in (i).

(i)   kuntii=mun [$_{\text{MoodP}}$ choka=hi   kan=ki=nu]   xano=ztirazi=n
       pot=C   wash=IPFV 3PL=3.PRES=DECL woman=each=ERG
       'Each woman is washing a pot.'

Even if extraposition to a position that was not at the extreme right edge but instead was within TP were also possible, it is unclear why this type of extrapostion would not allow the copy of the extraposed element to count as a case competitor. This is because extraposition to the far right, as seen in (i), would have to be analyzed as allowing a copy of the extraposed element to enter into case competition within TP, given the ergative case marking on the extraposed subject.

[21] An additional undesirable feature of such an analysis is that positing crosslinguistic variablity in what heads are relevant for dependent case domains results in a significantly less constrained theory.

and the marking of case. Even if the addition of further complications to the theory could yield the empirical facts, a dependent case account seems to miss the insight that it is the position of the subject relative to functional heads, rather than to other DPs, that predicts whether the subject surfaces with ergative case. This strongly suggests that Amahuaca ergative case is not assigned on the basis of a configurational relationship between two DPs, with functional heads delimiting only the domains of evaluation. Instead, functional heads play a more active role in the assignment of ergative case in Amahuaca. If we assume that multiple functional heads figure in the assignment of case, this allows us to capture the interaction of movement and case marking while avoiding the issues seen above with a purely configurational account of case. It is this type of account that I pursue in the following section.
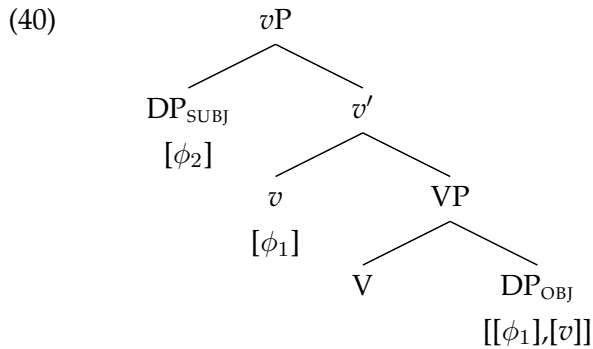
5   The analysis: Ergative case as agreement with multiple heads

As seen in Section 3, it is only when a subject DP has moved out of its externally merged position in Spec,vP that it is marked ergative. The proposal I argue for in this section is that in order for a DP to be marked ergative, it must enter an Agree relation with multiple functional heads. Specifically, following Deal's (2010) account of Nez Perce and Sahaptin ergatives, an ergative DP must agree with a v that has already agreed with another DP, and it must agree with T. The category features from these functional heads that are received via Agree will be spelled out as ergative case in the course of vocabulary insertion. Only when a DP has agreed with both of these functional heads can the ergative vocabulary item be inserted to mark the subject DP as ergative.
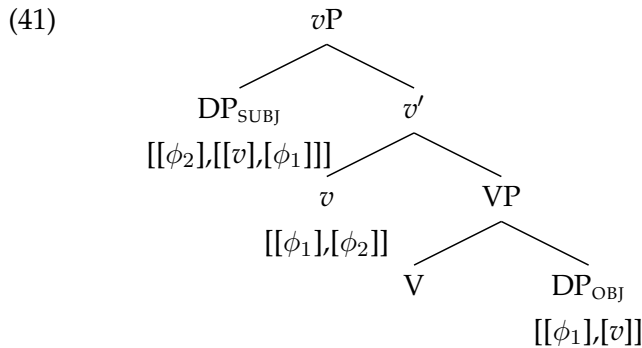
The first Agree operation that an ergative DP participates in is one with v. Following Deal's (2010) analysis of Nez Perce, I assume that Amahuaca v always establishes an Agree relationship with DPs in both its complement and specifier. This means that all subjects and objects will agree with a transitive v in their externally merged positions. I assume that v itself determines which order these operations occur in (Müller, 2004). In Amahuaca (like in Nez Perce and Sahaptin), first, a transitive v probes its complement, and agrees with the object DP. I assume that Agree operations involve bidirectional feature exchange, with the probe receiving features from the goal and the goal receiving features from the probe that indicate which head it has agreed with. When v probes its complement, it passes on its category feature to the object DP, and the object passes on a bundle of ϕ-features to v. This transmission of a [v] feature to the object can be seen as the marking of the object with accusative case. (This corresponds to one of two suggestions about accusative case made by Pesetsky and Torrego 2001.)[22] The results of this Agree operation are schematized in (40).

---

[22]A question that arises is whether ergative case can surface if accusative case is not assigned. A testing ground for this would be with verbs that assign some case other than accusative, such as dative, to their objects. However, objects in Amahuaca consistently surface in a morphologically unmarked form. Note that both indirect and direct objects in Amahuaca are morphologically unmarked, as was shown in (30). This means that accusative and dative are syncretic. It is therefore not possible to tell from a morphological standpoint whether Amahuaca has monotransitive constructions with dative objects. Another testing ground would be with clausal complements. However, all dependent clauses in the language are switch-reference clauses, and it is unclear whether these clauses are ever truly complements to V, even with verbs like 'say'.

(40)

```
                          vP
                 ┌─────────┴─────────┐
             DP_SUBJ                  v′
              [φ₂]            ┌────────┴────────┐
                             v                 VP
                            [φ₁]        ┌───────┴───────┐
                                        V            DP_OBJ
                                                   [[φ₁],[v]]
```

After v has agreed with the object DP in its complement, it then probes its specifier. At this point of v's agreement with the subject DP, v has its category feature plus the ϕ-features it received from agreeing with the object DP. This entire bundle [v,ϕ] is passed on to the subject DP. I assume a non-flat feature structure such that this complex bundle, received by the subject in a single Agree operation, remains differentiated as a whole from the features already present on the subject DP. This hierarchical structure of features is represented with square brackets. In the Agree operation between the subject and v, the DP also passes on a bundle of ϕ-features to v. This results in v having two bundles of ϕ-features. The results of this second operation are shown in (41).

(41)

```
                          vP
                 ┌─────────┴─────────┐
             DP_SUBJ                  v′
        [[φ₂],[[v],[φ₁]]]      ┌────────┴────────┐
                             v                 VP
                        [[φ₁],[φ₂]]     ┌───────┴───────┐
                                        V            DP_OBJ
                                                   [[φ₁],[v]]
```

Note that the featural manipulations discussed to this point make it possible to characterize the transitive subject in featural terms: it is the DP which bears [v,ϕ] in addition to its own ϕ-features. We will see in the discussion of switch-reference in Section 6 that this complex of features is grammatically relevant in Amahuaca. It is not, however, sufficient to license the insertion of the ergative case morpheme. If it were, we would expect to find all A arguments with ergative marking, even those that remain in situ. Instead of agreeing only with v, a subject DP must also interact with T to be marked ergative.
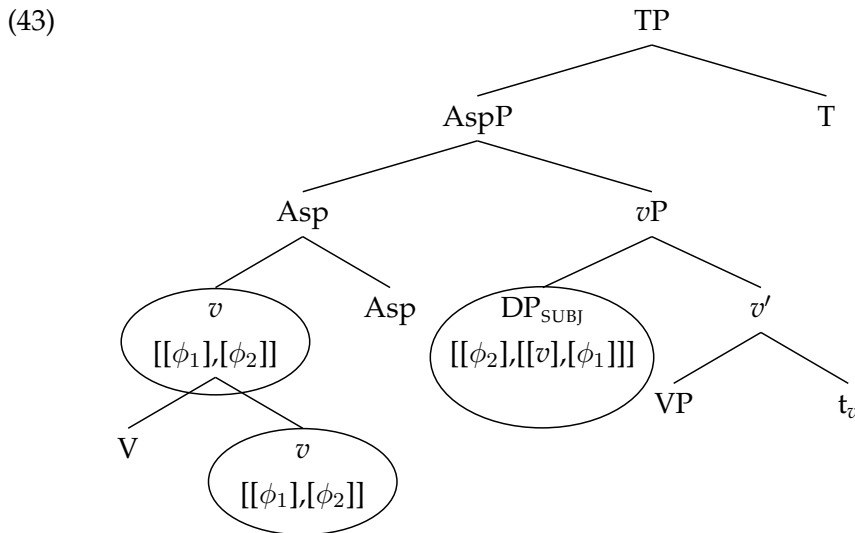
Amahuaca T has a ϕ-probe, resulting in person-based agreement on tense markers. This agreement pattern is demonstrated in (42) with the past tense marker.

(42)　a.　hiya=x=mun hun rakuu=**ku**=nu
　　　　　1SG=NOM=C 1SG be.afraid=1.PST=DECL

　　　　　'I was afraid.'

b. vaku=x=mun rakuu=**xo**=nu
    child=NOM=C be.afraid=3.PST=DECL
    'The child was afraid.'

As seen in (42), the form of the tense marker changes based on the person of the subject: the past tense morpheme is *=ku* when the subject is first person, but *=xo* when the subject is third person.
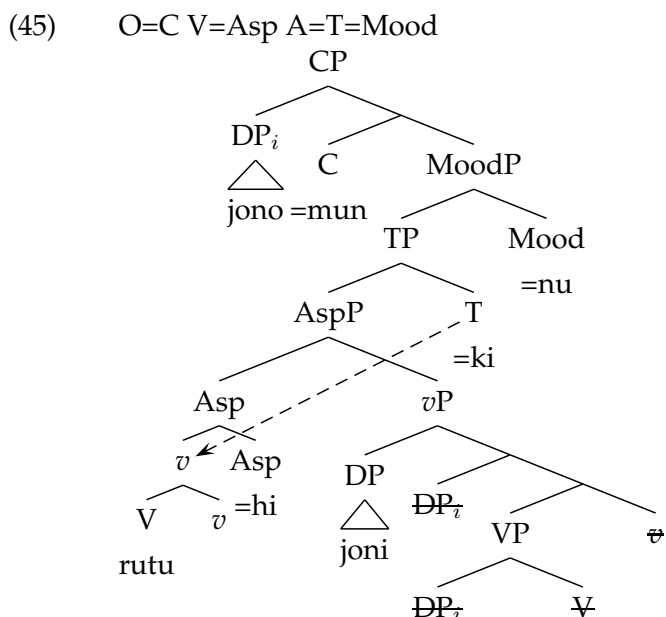
How exactly does T come to share the features originating with the subject? This is a particularly important question since T always shows subject-based agreement, regardless of the case or syntactic position of the subject. Therefore, T must be able to receive the subject's ϕ-features without the subject being marked with ergative case. Because of the feature exchange via Agree between the subject and *v*, the ϕ-features from the subject are present on both the subject DP and *v*. This means that there are two possible goals for the ϕ-probe on T that could result in T bearing the features of the subject. This follows on the assumption that features on a head are not treated differently than features on a DP, in keeping with indirect agreement accounts such as those explored by Legate (2005) and Adger and Ramchand (2005). As shown in Section 3, the Amahuaca verb can appear sentence-medially before aspect, suggesting that the verb moves to this position from its lower position. Once the verb head-moves to Asp through *v*, the complex head in Asp bears the subject's ϕ-features due to the fact that they are present on *v*. This configuration has the notable property that neither *v* nor the subject DP asymmetrically c-commands the other, plausibly resulting in the ϕ-features on both being accessible to the ϕ-probe on T. This lack of c-command is illustrated in (43).

(43)

The core idea is that equidistance between *v* and the subject DP in this configuration allows T to receive the subject's ϕ-features in either of two ways. It can receive them by exchanging features with the head-moved *v* or via Agree with the subject DP directly. The availability of these two options recalls Alexiadou and Anagnostopoulou's (1998) parametrization of AGR such that its features can be checked by head movement of the verb or by phrasal movement of a nominal. Amahuaca, I propose, allows both options to satisfy the ϕ-probe on T: Agree with another verbal head and Agree with a DP.

If T exchanges features with the complex head in Asp, the subject remains in situ and does not interact with T. Since the subject DP and T never enter into an Agree relation directly, the subject never receives any features from T. It remains in Spec,vP with its own ϕ-features plus the bundle $[v,\phi]$ that it received from v via Agree. This is the type of structure that we find with fronted objects, as in (44) and (45).

(44) jono=mun rutu=hi joni=ki=nu
      peccary=C kill=IPFV man=3.PRES=DECL
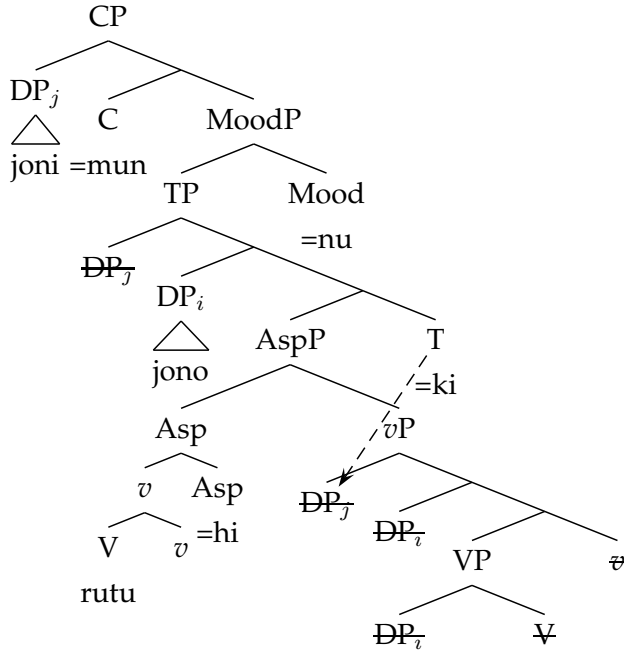   'The man is killing the peccary.'

(45) O=C V=Asp A=T=Mood

In (45), the subject is externally merged in Spec,vP, and the object is merged as the complement of V. In this configuration, v probes first its complement, agreeing with the object, and then its specifier, agreeing with the subject. The object vacates the VP to an inner specifier of vP, and the verb head-moves through v to Asp, as discussed in Section 3.2. Since the complex head in Asp contains the subject's ϕ-features that v received via Agree, T can participate in an Agree relation directly with v in Asp, as represented by the arrow. This results in the subject remaining in situ, unmarked. The object then moves to Spec,CP due (I assume) to feature driven movement for information structural reasons.

There is also a second option for how agreement with T can unfold. Instead of agreeing with v, the goal of the probe on T can be the subject DP itself, since the subject is not asymmetrically c-commanded by any closer goal. If T agrees with the subject, I assume that the subject moves to Spec,TP. This movement presumably takes place to indicate the direct functional relationship between the subject DP and T, as proposed in Miyagawa 2010. Upon agreeing with T, the subject receives a [T] feature which it bears in addition to the features received from v. It is this combination of features, received in two separate Agree operations with functional heads, that will cause this moved subject to be marked ergative. We can see this type of configuration in (47), which represents the structure of (46).

(46) joni=n=mun jono   rutu=hi=ki=nu
      man=ERG=C peccary kill=IPFV=3.PRES=DECL
      'The man is killing the peccary.'

(47) A=ERG=C O V=Asp=T=Mood

In (47), agreement of the arguments with v and movement of the verb proceed as in (45). The object also vacates VP by moving to an inner specifier of vP, as seen previously. Unlike in the previous example, however, in this structure, T agrees with the subject DP directly, instead of receiving the subject's ϕ-features from v. This causes the subject to move out of vP to Spec,TP and, because it has gained a [T] feature, to be marked ergative. Meanwhile, the object also moves out of its position on the vP edge into a higher position in the middle field. Finally, the subject moves to Spec,CP for information structural reasons.

The subject in (47) will be marked ergative because it has both the features received through agreement with a transitive v ([v,ϕ]), as well as the feature [T] received through agreement with T. We can assume that the vocabulary item for ergative case is specified for this combination of features, as in (48), and will only be inserted when a DP has entered an Agree relationship with both v and T.

(48)   *Ergative (preliminary)*
        [v,ϕ],[T]   ↔   /n/

To see how this proposal allows us to capture the generalization in (12) about the distribution of ergative case marking in Amahuaca, consider the representations from (11), repeated in (49) below.

25

(49)

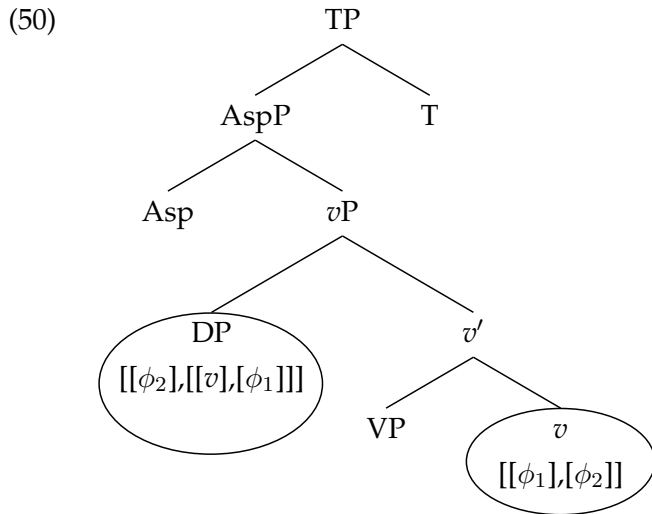|						ASP			
a.	**A=ERG**	C	O		V	ASP			T
b.	O	C	**A=ERG**		V	ASP			T
c.	V	C	**A=ERG**	O		ASP			T
d.	V	C	O		**A=ERG**	ASP			T
e.	V	C				ASP	**A**	O	T
f.	V	C	O			ASP	**A**		T
g.	O	C			V	ASP	**A**		T

The structures in (49b) and (49g) both represent constructions where the object is fronted to Spec,CP. In (49b), T has agreed directly with the subject, which has moved up to Spec,TP. In (49g), we see the other possibility where T has received ϕ-features from v, and the subject remains in situ in Spec,vP, unmarked for case. Likewise, in (49c)-(49f) we see four structures involving remnant fronting of VP. In (49c), T has agreed with the subject, which has moved to Spec,TP and is marked ergative. (The object has also scrambled in the middle field.[23]) In (49d), we see the same Agree option, but the object has subsequently scrambled over the subject. In (49e), we see the second option for feature exchange. In this structure, T has received ϕ-features from v, and the unmarked subject stays low. The example in (49f) shows the same agreement option, but with the object moving into the middle field. It is only in constructions with a fronted subject, like (49a), where we don't see both agreement possibilities attested. If the subject does not stay in its externally merged position, it will always agree with T and be marked ergative. The fact that a subject must agree with T to move to Spec,CP could potentially be due to TP being a phase in Amahuaca, such that successive cyclic movement must proceed through its specifier.[24]

In addition to being able to account for the ergative case generalization in (12), this proposal is also able to account for the distribution of ergative case in sentences that lack aspect marking. In Section 3, it was noted that in sentences that lack overt aspect marking, subjects always appear with ergative case. We have now seen that the head movement of V and v to Asp allows T to exchange ϕ-features with v instead of probing the subject. This possibility allows the subject to stay low and remain unmarked. I propose that in sentences that lack overt aspect marking, this head movement to Asp does not occur. (This could be because the relevant Asp head does not have the features necessary to trigger head movement or because these structures simply lack an Asp projection altogether.) Without head movement of v, this means that the highest ϕ-features accessible to T will always be the subject's, and there will be no option of T exchanging features with v instead. That is because in these structures the subject asymmetrically c-commands v, as can be seen in (50).[25]

---

[23]It is worth noting that there are no attested orders where the object remains on the vP edge while the subject moves to Spec,TP. This could potentially be derived by assuming that if T values its ϕ-probe by agreeing directly with a DP argument, it attracts both arguments. Given the wealth of crosslinguistic variation in the triggers and effects of object movement, the properties of Amahuaca object movement are of substantial interest and are the subject of ongoing work.

[24]For some precedents for the idea that TP is a phase (or more generally that movement to Spec,CP must move through Spec,TP), see Assmann et al. 2015, Deal 2016, and references therein.

[25]Even if vP has the same features as the head of the phrase, v, it does not c-command the subject DP (it dominates it), and will therefore not count as "closer" to T based on c-command.

(50)

```
                        TP
                      /    \
                   AspP      T
                  /    \
               Asp      vP
                       /   \
                      DP     v′
              ⎛ [[φ₂],[[v],[φ₁]]] ⎞   /  \
                              VP     v
                                   ⎛ [[φ₁],[φ₂]] ⎞
```

This means that in sentences without overt aspect marking, subject DPs will invariably enter an Agree relationship directly with T, move to Spec,TP, and be marked ergative. This option follows straightforwardly on the approach I have outlined in this section, where head movement of v to Asp plays a crucial role in allowing A arguments to avoid ergative case.[26]

Having established the features necessary for a subject to be marked ergative, we now return to the vocabulary items for Amahuaca case markers. As we have seen, the Amahuaca ergative marker must minimally be specified for the feature [T] and the internally complex bundle [v,ϕ]. Assuming that all DPs will bear the category feature [D], this leads to the revised vocabulary item for ergative case in (51).[27]

(51)   *Ergative (revised)*
        [D],[v,ϕ],[T]   ↔   /n/

The bundle [v,ϕ] is the result of agreement with a transitive v which has already agreed

---

[26]Julie Anne Legate (p.c.) has suggested an alternative analysis where ergative is uniformly assigned to transitive subjects but is not realized when the DP is in Spec,vP. Crucially such an analysis would need to account for why transitive subjects always surface with ergative case in perfective sentences, which lack overt aspect marking. The equidistance story presented here is able to account for why it is only in sentences with overt aspect marking that the transitive subject is able to remain in Spec,vP. Additionally, a morphological account that appealed to syntactic position directly would require that vocabulary items or impoverishment rules for D be able to refer to the external syntax of the DP. This information is not part of the feature content of D, and it is worth considering whether such non-local information should be able to affect vocabulary insertion.

[27]Specifying the category feature [D] as part of the vocabulary item predicts that ergative case should only be realized at the DP level, once per DP. This is the pattern found in Amahuaca where ergative case is a DP enclitic and where case cannot be marked on multiple elements within a single DP, as shown in (ii).

(ii)   joni**(*=n)** kiyoo=vi**=nin**=mun jono   rutu=hi=ki=nu
        man=ERG all=EMPH=ERG=C   peccary kill=IPFV=3.PRES=DECL

        'All the men are killing a peccary.'

This featural specification is also in line with the fact that the language lacks determiners, which would presumably be realized in D.

with another DP. This captures the generalization that it is only subjects of transitive clauses that are marked ergative, not intransitive subjects or objects. The specification for the feature [T] ensures that in situ subjects will not receive ergative case marking, only subjects that have agreed with T and moved.

We then have two options for how to treat unmarked subjects, as well as accusative arguments. It is possible that there is no accusative case marker, since object DPs bear no overt case marking. However, it is also possible that there is a null case suffix (=∅) which surfaces on accusative DPs. This null suffix would not be specified for accusative features. Instead, as in languages in which absolutive is simply the default (Legate, 2008), this null marker would be a default case marker specified only for the category feature [D]. If we assume standard competition mechanisms of Distributed Morphology (Halle and Marantz, 1993), the most highly specified vocabulary item that matches the featural content will be inserted. This means that the unmarked form will be the default when no more highly specified vocabulary item can be inserted. This ranking between the ergative and "accusative" markers is shown in (52).

(52)   *Ergative vs. default*
         [D],[v,ϕ],[T]   ↔   /n/
         [D]   ↔   /∅/

This analysis captures the insight of the dependent case literature that the presence of ergative depends on the presence of another DP lower in the clause. This is achieved via Agree with v. If v has agreed with an object DP, it will bear ϕ-features by the time it has agreed with the subject. This will cause the subject to receive the feature bundle [v,ϕ] when it agrees with v. If there is no lower DP for v to agree with, as in an intransitive predicate, the subject DP will only receive a [v] feature, ruling out the possibility of ergative case marking.

What this account is able to capture that a dependent case account struggles to capture is the interaction of case marking and movement that we find in Amahuaca. Because the insertion of the ergative case marker is dependent on the presence of a [T] feature on a DP, ergative case will only be marked when an A argument has agreed with T, triggering it to subsequently move. As seen in Section 4.2, an account in which functional heads only delimit case domains, as in dependent case theory, is unable to straightforwardly capture this pattern of interaction between movement and ergative case assignment. Instead, functional heads must play a more integral role in the assignment of ergative case. Specifically, ergative case is exponence of agreement with two functional heads, v and T.

6   Category features and switch-reference

If ergative case is indeed the exponence of agreement with multiple functional heads, as argued for in the previous section, we expect that the features received from each of these Agree operations might have separate effects in other parts of the grammar. Specifically, since all subjects will agree with v, but not all subjects will agree with T, this account predicts that features received from v might have effects independent of whether agreement with T has also happened. This prediction is borne out.

Amahuaca, like many Panoan languages, has a rich switch-reference system which encodes information about the relationship between the arguments of matrix and dependent clauses, as well as about the temporal relationship between the clauses (Sparing-Chávez, 1998, 2012). Throughout, I use the term 'marked clause' for the clause which hosts the switch-reference marker and 'reference clause' for the clause which hosts the other argument in the (non-)coreference relationship, following Munro (1979). In marked clauses, the switch-reference marker indicates coreference or non-coreference of the subject of the marked clause with any argument of the reference clause. Where coreference is indicated, the form of the switch-reference marker indicates whether the coreferential reference clause DP is an S, A, or O argument.[28] What is crucial for present purposes is that these markers are not sensitive to morphological case marking. Instead, I argue that they track features received from agreement with *v*.

As mentioned previously, in addition to encoding information about the coreferentiality of arguments, switch-reference markers also encode information about the temporal relationship between the marked clause and the reference clause, resulting in multiple paradigms of these markers. The examples in (53)-(55) show one set of switch-reference markers which encode that the action of the marked clause precedes the action of the reference clause.

(53)   Marked clause subject coreferential with reference clause S

    [jiri=**hax**]=mun **hun** hoxa=ku=nu
    eat=SS.NOM=C 1SG sleep=1.PST=DECL

    'After eating, I slept.'

(54)   Marked clause subject coreferential with reference clause A

    [koshi ka=**xon**]=mun **hun** hatza jovaa ha=ku=nu
    quickly go=SS.ERG=C 1SG manioc cooked do.TR=1.PST=DECL

    'After running, I ate manioc.'

(55)   Marked clause subject coreferential with reference clause O

    [ka=**xo**]=mun **hino** hachi=hi   hun=ka=nu
    go=SO.ACC=C dog grab=IPFV 1SG=1.PRES=DECL

    'After the dog went, I am grabbing it.'

In (53), the subject of the marked clause (given in brackets) is coreferential with the subject of the reference clause (in this case the matrix clause), which is the subject of the intransitive verb *hoxa* 'sleep'. The switch-reference marker *=hax* indicates that the coreferential reference clause argument is an intransitive subject. In (54), the marked clause subject is coreferential with the subject of the reference clause as well. However, in this example, the matrix verb is the transitive verb *ha*, which functions as a general transitive verb meaning 'do', in this context interpreted as meaning 'eat'. In this case, the switch-reference marker *=xon* indicates that the coreferential reference clause argument is an A argument.

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[28]Note that the sensitivity of same subject markers to the grammatical function of the reference clause subject – S versus A – or, similarly, to the transitivity of the reference clause, is a common feature in Panoan switch-reference systems. Valenzuela (2003) refers to this property as 'participant agreement'.

Table 1: Amahuaca switch-reference markers ("after" series)

marked clause argument	coreferential reference clause argument	form
S/A	S (NOM)	=*hax*
S/A	A (ERG)	=*xon*
S/A	O (ACC)	=*xo*
S/A/O	None	=*kun*

Finally, in (55), the reference clause verb is also transitive. In this example, though, the marked clause subject is coreferential with the reference clause object *hino* 'dog'. This is indicated by the switch-reference marker =*xo*. This portion of the switch-reference paradigm (along with the corresponding different subject marker) is summarized in Table 1.

These switch-reference markers are sensitive to the three core cases of Amahuaca's tripartite case system: nominative, ergative, and accusative. However, what is important to note about these switch-reference markers is that they do not track the *morphological* case of the argument that they mark coreference with. That is to say that a DP need not be overtly marked ergative or nominative in the reference clause to trigger the appropriate switch-reference marker in the marked clause. Instead, these markers appear to be sensitive to abstract Case differences between reference clause DPs, regardless of whether these features are realized overtly as morphological case. This can be seen clearly in the examples in (56) and (57).

(56) [hoxa=shara=**hax**]=mun ka=hi   **xano**=ki=nu
      sleep=well=SS.NOM=C   go=IPFV woman=3.PRES=DECL

      'Having slept well, the woman is going.'

(57) [hoxa=shara=**xon**]=mun kuntii choka=hi   **xano**=ki=nu
      sleep=well=SS.ERG=C   pot   wash=IPFV woman=3.PRES=DECL

      'Having slept well, the woman is washing pots.'

In both (56) and (57), the reference clause subject DP *xano* 'woman' surfaces in the unmarked form because it remains in situ. In (56), this DP is the subject of the intransitive verb *ka* 'go', and triggers the nominative switch-reference marker in the marked clause. In (57), however, the same DP is the subject of the transitive verb *choka* 'wash', and triggers the ergative switch-reference marker in the marked clause. These two DPs are morphologically case-marked in the same way (i.e. unmarked), yet they trigger different switch-reference markers. This must mean that the switch-reference system tracks something other than morphological case or the full complex of features necessary for overt case marking.

We must then ask what features these switch-reference markers are sensitive to. In (56) and (57), the subject DP remains in situ. It does not move out of *v*P and therefore does not agree with T. Under the current analysis, the lack of agreement with T is reflected by the fact that the subject in (57) does not receive ergative case. What features differentiate these two DPs then? As outlined in Section 5, *v* will always probe its complement and specifier. All subject and object DPs will therefore receive features from *v* in their externally merged

positions. It is these features from v that differentiate the two subjects in (56) and (57), in a way that is reminiscent of inherent case. In (56), v has not agreed with any other DPs, so the subject receives only a category feature from v. In contrast, in (57), by the time v agrees with the subject, it has already agreed with the object DP. Therefore, as we have seen previously, it passes on the bundle [v,ϕ] to the subject.

Putting this all together with respect to vocabulary insertion, we can say that the ergative switch-reference marker will be inserted when the coreferential DP in the reference clause bears the feature bundle [v,ϕ]. The nominative switch-reference marker will be inserted when the coreferential reference clause subject DP bears only the feature [v]. Finally, the accusative switch-reference marker will be inserted when the coreferential reference clause DP is the one whose ϕ-features are within the [v,ϕ] bundle of the reference clause subject. No other features of the DPs (such as [T]) need to be appealed to for the switch-reference markers.[29]

We have seen, then, that the switch-reference system of Amahuaca supports the analysis of ergative case as exponing multiple Agree operations. Specifically, it provides evidence that even DPs that are not morphologically marked have abstract featural differences based on agreement with v. For A arguments, ergative switch-reference is triggered solely by these features from v, but ergative case marking requires a second Agree operation between the subject and T. Notably, neither an inherent nor dependent case account can capture how a DP could behave as ergative for some purposes, like switch-reference, but not others, like morphological case, since case assignment is the result of one syntactic relationship in both of these accounts. However, a theory of case in which ergative is the result of relationships with multiple functional heads can capture these patterns. This system, in effect, allows for a distinction between transitive subject as a "grammatical function" (determined in situ) and transitive subject as a case category. It does this, however, without appeal to any notion of grammatical function that goes beyond constituency and Agree relations. In the next section we will see that nominative marking, like ergative marking, also requires more than the features received from an agreement relationship with v, providing additional support for the idea that case marking can expone multiple features.

7   Nominative case as a feature complex

Amahuaca nominative case marking, like ergative, appears to be sensitive to multiple syntactic relationships. Specifically, nominative case is sensitive to focus, appearing only on focused DPs. This suggests that exponence of complex feature bundles, rather than atomic case features, is characteristic of the Amahuaca case system more generally.

To understand the focus properties of nominative case in Amahuaca, it is first necessary to understand how the language typically marks focus. As mentioned in Section 3.2, Amahuaca has a second position clitic =*mun* in C, which is preceded by exactly one XP in Spec,CP. The obligatoriness of a constituent in Spec,CP can be derived from an EPP feature on C.

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[29]This pattern raises the interesting question of how such transmission of features between clauses is mediated – a matter which is outside the scope of the current work. I refer interested readers to Clem 2017 for a more detailed account of Amahuaca's switch-reference system.

If a phrase is focused, it appears in the initial position in Spec,CP, as shown in (58) with a focused object, and (59) with a focused subject.

(58) a. jau=ra   joni=n   rutu=hax
      what=INT man=ERG kill=PERF
      'What did the man kill?'

b. jono=mun joni=n   rutu=xo=nu
   peccary=C man=ERG kill=3.PST=DECL
   'The man killed a PECCARY.'

(59) a. tzova=n=ra   jono   rutu=hax
      who=ERG=INT peccary kill=PERF
      'Who killed the peccary?'

b. jaa joni=n=mun jono   rutu=xo=nu
   DEM man=ERG=C peccary kill=3.PST=DECL
   'That MAN killed the peccary.'

In the question and answer pair in (58), the object DP in (58b) corresponds to the *wh*-word in (58a), which can be used as a diagnostic of focus (Rochemont, 1998; Polinsky and Potsdam, 2001). This object DP appears in the initial position before =*mun*. In contrast, in the pair of sentences in (59), the subject DP in (59b) corresponds to the *wh*-word of the preceding question. In this instance, it is the subject DP that appears in the initial position preceding the second position clitic. This suggests that this position is a focus position. There is, however, only a one way implication between focus and fronting. Constituents that receive a narrow focus interpretation are fronted, but not all fronted constituents receive a narrow focus interpretation. This will be further exemplified by (63) below.

The association of the initial position with focused constituents is not restricted to question and answer pairs. Other contexts which trigger focus, such as corrective contexts, also result in the focused constituent being fronted to the initial position, as demonstrated in (60).

(60) a. hatza=mun choka=hi   xano=ki=nu
      manioc=C   wash=IPFV woman=3.PRES=DECL
      'The woman is washing manioc.'

b. maki, joni=n=mun hatza   choka=hi=ki=nu
   no   man=ERG=C manioc wash=IPFV=3.PRES=DECL
   'No, the MAN is washing manioc.'

In (60b) the part of the sentence that is being corrected from (60a) is the DP *joni* 'man', which replaces the DP *xano* 'woman'. This subject DP is fronted to the initial position before the clitic =*mun*. This initial position, then, seems to be a general purpose focus position.

In Amahuaca, nominative marking is triggered only when an S argument is focused. This is illustrated in the contrast between (61) and (62).[30]

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[30]The Amahuaca plural marker surfaces as a portmanteau exponing plural and case. The nominative form of the plural marker is -*vaux* and the ergative form is -*vaun*. The form -*vo* acts as the default form of the plural.

(61) a. jau   kuza=hi=ra   xano-vo=ki
          what do=IPFV=INT woman-PL=3.PRES
          'What are the women doing?'

      b. hoxa=mun=hax **xano-vo**=ki=nu
          sleep=C=PERF   woman-PL=3.PRES=DECL
          'The women are SLEEPING'.

(62) a. tzova=x   hoxa=hax=ra=ki
          who=NOM sleep=PERF=INT=3.PRES
          'Who is sleeping?'

      b. **xano-vaux**=mun   hoxa=hax=ki=nu
          woman-PL.NOM=C sleep=PERF=3.PRES=DECL
          'The WOMEN are sleeping.'

In (61), the *wh*-question in (61a) should focus the verb, and in the response in (61b), the non-initial plural subject *xanovo* 'women' is unmarked for case. In (62), in contrast, the *wh*-question in (62a) should focus the subject, and in the corresponding response in (62b), the subject appears in the initial focus position with the nominative form of the plural marker *-vaux*.

Unlike with ergative marking, descriptively, nominative marking is not fully predictable based on surface position. While the contrast between (61b) and (62b) might make it seem like the presence or absence of nominative case is, like ergative, due to a difference in whether the nominative DP has moved and agreed with T, this is not an accurate generalization. As mentioned above, the relationship between focus and fronting is not bi-conditional. It is possible for unfocused subjects to appear initially in contexts that lack a constituent with a narrow focus interpretation. In contexts with wide focus on the entire sentence, the initial S argument is unmarked for case, as seen in (63).

(63) *Context: You see a group of people gathered around a tree and you ask, 'What happened?'.*
      Someone responds:

      joni(#=x)=mun pakuu=xo=nu
      man=NOM=C   fall=3.PST=DECL
      'A man fell.'

In (63), the presence of the second position clitic *=mun*, which is in C, indicates that the subject is in Spec,CP, just as the nominative marked subject in (62b). Therefore, syntactic position does not seem to play a direct role in whether a DP is marked nominative or not. Instead, nominative marking is sensitive to focus.

If nominative marking is, in fact, conditioned by focus, it is important to establish that the nominative marker *=x* (or *-vaux* for plurals), is not simply a general focus marker. Specifically, given that Amahuaca exhibits an underlyingly tripartite case system, it is important to establish that this marker can only be used on S arguments, and not on A or O arguments, if it is indeed related to case. This is what we find.

The marker *=x* is incompatible with focused objects, as demonstrated in (64).

(64) a.　jau　choka=hi=ra　　xano=ki
　　　　　what wash=IPFV=INT woman=3.PRES

　　　　　'What is the woman washing?'

　　　b.　**kari(*=x)**=mun choka=hi　jan=ki=nu
　　　　　yam=NOM=C　wash=IPFV 3SG=3.PRES=DECL

　　　　　'She is washing YAMS.'

In (64b), the focused object *kari* 'yams', which should be accusative, cannot surface with the marker =*x*. It must surface in the unmarked form. This suggests that the =*x* is not a focus marker that is compatible with accusative arguments.

　　The ungrammaticality of =*x* with the transitive subject in (65b) also indicates that it is not simply a focus marker for subjects.

(65) a.　hatza=mun choka=hi　xano=ki=nu
　　　　　manioc=C　wash=IPFV woman=3.PRES=DECL

　　　　　'The woman is washing manioc.'

　　　b.　* maki, **joni(=n)=x**=mun　hatza　choka=hi=ki=nu
　　　　　no　　man=ERG=NOM=C manioc wash=IPFV=3.PRES=DECL

　　　　　'No, the MAN is washing manioc.'

In the corrective context in (65b), the focused A argument *joni* 'man' cannot surface with the marker =*x*. The incompatibility of =*x* with A arguments holds even if the ergative marker is not present on the subject DP.

　　The incompatibility of the marker =*x* with focused A and O arguments provides evidence that it does not mark focus alone. If it were a focus marker unrelated to case, we would expect any focused DP (and perhaps other types of constituents) to be able to surface with this marker. This suggests that the marker in question actually does serve to mark nominative case, but only on focused S arguments.[31]

　　If we assume, as with fronted ergative DPs, that fronted nominative DPs agree with T and pass through Spec,TP, a fronted S argument will bear the feature [T], distinguishing it from a fronted O argument, which does not agree with T. Additionally, the nominative marked DP must bear a focus feature, since only focused S arguments receive nominative case. The vocabulary item for the nominative marker, along with the previously posited ergative and default case markers, is given in (66).

(66)　*Ergative vs. nominative vs. default*
　　　　[D],[v,ϕ],[T]　　↔　/n/
　　　　[D],[T],[Foc]　　↔　/x/
　　　　[D]　　　　　　↔　/∅/

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[31]A similar connection between case and information structure has been discussed for Tibeto-Burman languages that show "optional" ergative or "agentive" marking (Chelliah and Hyslop, 2011). In some of the languages that show optional case marking it appears that both pragmatic and syntactic factors are at play in determining whether subjects receive agentive case marking. Note, though, that, unlike in Amahuaca, these patterns do not concern S arguments specifically. (They typically involve A arguments.)

This nominative marker will be in competition with the more highly specified ergative marker, which will block its insertion on focused A arguments. Further, as seen before for ergative case, if an S argument does not have all of the features necessary for the nominative marker to be inserted, the DP will surface in the unmarked form.

This sensitivity of nominative marking to features from T shows that functional heads must play a crucial role in Amahuaca case marking more generally, beyond ergative case. The additional sensitivity to focus demonstrates that Amahuaca case morphology expones bundles of features rather than single case features.

8 Conclusion

In this paper I have introduced a pattern of ergative case marking in Amahuaca that is sensitive to the syntactic position of the transitive subject. Subjects which remain low are not marked ergative, while subjects which have moved up to at least Spec,TP receive ergative case marking. In a view of case in which it is the morphological exponence of a configurational relationship between two DPs, it is difficult to account for why the structural relationship between a DP and T should affect case marking. Instead, these data point to an analysis in which functional heads play a crucial role in case assignment. It is important to note, however, that the analysis here departs from the traditional implementation of ergative case as assigned directly by a functional head, namely v. Instead, the account I pursue relies on the relationship between the transitive subject and two functional heads, v and T.

This account is able to capture both the insight of the transitivity condition of Woolford (2006) and the insight from the dependent case literature about the crucial role of a DP lower in the structure. This is implemented through the Agree operations between v and DPs. Since the insertion of the ergative morpheme is sensitive to the feature bundle $[v,\phi]$ it can be inserted only when the v that has agreed with the subject has already agreed with a lower DP. In addition to capturing this insight about transitivity, the account pursued here is also able to incorporate the importance of the structural relationship between T and the ergative DP in Amahuaca. It is this fact that previous approaches to ergativity are unable to capture.

Furthermore, the switch-reference system of the language, introduced in Section 6, provides evidence that DPs can have abstract features which differentiate them along the lines of Case without being morphologically case marked. These data support the analysis of ergative as deriving from multiple Agree operations rather than from a single syntactic relationship with a head or another DP, a fact which previous accounts cannot capture.

These patterns from Amahuaca suggest, then, that case cannot always be the exponence of a relationship between nominals – in at least some languages, functional heads must play a more direct role in case assignment than simply delimiting phases and, by extension, case domains. Crucially, in contrast to what has been argued for previously, the Amahuaca data also provide evidence that ergative case may be derived from a relationship with multiple functional heads, rather than a single head. This account leaves open the possibility, however, that ergative case in some languages may be inherent or dependent, in line with the literature that shows that there is considerable diversity in the properties of ergative case systems crosslinguistically. In exploring how many languages

have an Amahuaca-like ergative system, it may be fruitful to look for other instances of ergative case associated with particular structural configurations, specifically ergative case assigned in Spec,TP. The expectation is that other ergative systems may exhibit a similar pattern of complex ergative case derived from multiple Agree operations, which highlights the role of functional heads in case marking and provides evidence that even ergative case can be the morphological reflection of a structural relationship between heads and nominals.

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