

# Dependent case by Agree: ergative in Shawi\*

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## Abstract

Ergative and accusative behave as dependent cases insofar as their appearance on a nominal depends on the presence of another nominal in the same domain. Recent work on case theory has taken the phenomenon of case dependency to challenge the idea that case is assigned via the operation Agree. Focusing on the Shawi language (Kawapantan; Peru), we show not only that patterns of case dependency *can* be captured via Agree, but also that doing so opens up a new way of understanding the typology of global case splits. Ergative in Shawi appears when the subject is at least as high as the object on the person hierarchy—a global split pattern—and can be accompanied by explicit realization of the object’s features on the subject nominal (“object agreement on the subject”). We propose that ergative arises in Shawi when a probe on *v* Agrees with both the object and the subject, transferring object features to the subject; these features are spelled out as ergative case and as object agreement. In general, we show that dependent cases, both ergative and accusative, can be seen as a morphological outcome of syntactic Agree between a probe and a second goal, realizing features on that goal that were transferred from a previous goal in an earlier step of Agree.

## 1 Introduction

A central issue in contemporary case theory concerns the role of functional structure in the calculus of case. In classic versions of case theory, case is determined (assigned/checked) via structural relations with functional heads; in current theoretical terms, this is to say that case is determined via Agree between a nominal and a head. “Configurational” case theories diverge from this perspective in attributing case assignment to special rules independent of functional heads, such as the dependent ergative assignment rule in (1). On a strict version of such a theory (e.g. Levin and Preminger 2015), the only role for functional structure in case theory is to delimit domains in which such rules apply (see esp. Baker 2015, ch. 4).

- (1) Configuration rule for ergative assignment (Baker 2015: 49)

If there are two distinct NPs in the same spell out domain such that NP1 c-commands NP2, then value the case feature of NP1 as ergative unless NP2 has already been marked for case.

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The “dependent” cases ergative and accusative have played a key role in spurring the development of configurational case theories.<sup>1</sup> Appearance of a dependent case seems to depend primarily on the presence of multiple nominals in a domain, as stated directly in the rule in (1). This type of relationship between two nominals whereby one triggers dependent case on another has been taken as a serious challenge for Agree-based views (see e.g. Baker and Vinokurova 2010, Baker 2014, 2015, Preminger To appear): how is it, without the adoption of rules like (1), that the presence of one nominal could determine the case behavior of another?

Our goal in this paper is to develop and defend what we see as a solution to the puzzle of case dependency from the perspective of Agree-based case theory—one in which syntactic dependencies between nominals and heads, rather than rules like (1), are responsible for the determination of case.<sup>2</sup> Our solution builds in particular on two ideas explored in depth in the recent literature on Agree. First, probes may Agree with multiple goals, and this one-probe-many-goals type of setup gives rise to hierarchy effects of various types (Béjar 2003, Béjar and Rezac 2009, Coon and Keine 2021, Clem 2022, Deal To appear b, among many others). Hierarchy effects emerge as a function of the fact that a single probe is able to Agree with multiple arguments only some of the time. Second, the feature transfer effected by Agree is bidirectional (Chomsky 2001, Pesetsky and Torrego 2001, 2007, Hiraiwa 2005, Clem 2019, Deal 2022, To appear a, a.m.o.). That is, in addition to a transfer of features from the goal to the probe (“valuation”), Agree also involves transfer of features from the probe to the goal. (To clarify the conceptual separation from probe valuation, Deal (To appear a) dubs this transfer of features “goal flagging.”)

Bringing these conceptual pieces together, we propose that “dependent” cases arise when features of a first goal are transferred to a second goal. In support of this view, we will show that the emergence of dependent case can be subject to hierarchy effects in exactly the way predicted if it results from Agree. Building on prior work on ergative case by bidirectional feature transfer (Deal 2010, Clem 2019), we propose that feature transfer under Agree is transitive. A first Agree relation between probe H and goal G1 transfers G1’s features to H (valuation) and H’s features to G1 (goal flagging). A subsequent Agree relation between H and a second goal G2 transfers G2’s features to H (valuation) and the *combined* features of H and G1 to G2 (goal flagging). It is this transitive transfer of features from G1 to H, and then from H to G2, that gives rise to the case dependency phenomenon. *Dependent case is the realization on a second goal of a first goal’s features.* Crucially, on our approach, the phenomenon does not reflect either two nominals directly Agreeing with each other or case-specific syntactic rules such as (1). Instead, it emerges naturally from the mechanics of how one probe Agrees with multiple goals, once feature transfer is understood in a transitive way.

We illustrate our proposal primarily with the particularly striking case of ergativity in the Kawan language Shawi, spoken in Peru. In Shawi, ergative appears on the subject only when the object is equal or lower on the person hierarchy 1>2>3—a type of hierarchy effect (“strictly de-

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<sup>1</sup>For this reason, such theories are sometimes referred to as “dependent case theories” (e.g. by Yuan 2020, Poole 2023b, Bány and Sheehan To appear). In this paper we use the term “dependent case” as a pre-theoretic label for patterns in which the case of one nominal depends on the presence of another. We distinguish this from the particular body of theoretical work that seeks to capture such patterns via rules like (1), referring to these instead as “configurational” case theories (taking this terminology from Baker 2010, Baker and Vinokurova 2010, Levin and Preminger 2015, Poole 2023a, i.a.)

<sup>2</sup>While our implementation is slightly different, our perspective converges with recent work by Poole (2023a), who likewise seeks to capture the phenomenon of case dependency via Agree.

scending PCC” or “ultrastrong PCC”) well known from ditransitives in languages such as Spanish and Arabic (Nevins 2007, Walkow 2012, Pancheva and Zubizarreta 2018). Even more strikingly, when the subject qualifies for ergative case, a morpheme explicitly indexing the features of the object may attach to it (the boxed instance of *nke* in (2b)). This type of morpheme—“object agreement on the subject”—is not possible on the subject when the subject does not qualify for ergative case, as in (2a).

- (2) a. 2SG→1SG: no ergative (Bourdeau 2015: 27)

I’wara kema(\*-ri) nu’wi-r-an-ku.  
yesterday 2(\*-ERG) tell.off-IND-2-1.O  
‘You told me off yesterday.’

- b. 1SG→2SG: ergative (Bourdeau 2015: 24)

I’wara ka-ri-nke pera-ra-(w)-nke.  
yesterday 1-ERG-2.O call-IND-1-2.O  
‘I called you yesterday.’

In terms of the distribution of ergative case, the Shawi system falls under the heading of *global case splits* (Silverstein 1976, de Hoop and Malchukov 2008, Keine 2010, Georgi 2012, Bárány 2017, Bárány and Sheehan To appear): the subject’s case is determined not based on its own features but rather based on the comparison between its features and the object’s. This type of case dependency falls out in our system from the mechanics of Agree: the probe Agrees with both arguments only when the person hierarchy is respected, and it is in this situation that ergative appears. The ergative case marker itself spells out the presence of object features transferred to the subject (in view of the transitivity of Agree relations), and the additional morpheme of object agreement on the subject available in Shawi allows particular object  $\phi$ -values transferred to the subject in this way to be overtly realized.

The paper is organized as follows. In Section 2 we discuss further aspects of case and agreement in Shawi. We lay out our Agree-based analysis of ergative case marking and object agreement on the subject in Section 3. In Section 4, we discuss potential alternative analyses for global case splits and (apparent) agreement between nominals, showing that alternative approaches, including potential alternatives grounded in configurational case theory, miss the connection between these two phenomena in Shawi. In Section 5, we offer an extension of our analysis to other types of case systems, including accusative systems in Sakha and Kolyma Yukaghir, showing both how we account for languages without global case splits and how we account for global case splits that follow other types of hierarchical patterns (strong PCC and weak PCC). Our theory predicts the overall typology of global case splits to reflect the range of person hierarchy effects found elsewhere in agreement, in particular in ditransitives; we discuss the evidence that this is so. We offer concluding remarks in Section 6.

## 2 Ergativity in Shawi

Spoken in Peru, Shawi is a member of the small Kawapangan language family. Previous work on the language includes Hart 1988, Barraza de García 2005, Ulloa 2019, To appear, and Bourdeau 2015, the last of which we have drawn on extensively for characterization of the relevant patterns.

We have also confirmed certain of the crucial patterns in the Shawi Bible (*Yosë Nanamën* 2011), and we thank Luis Ulloa (p.c.) for confirming them in recent fieldwork.

Shawi verbs are inflected for the person and number of both the subject and object.<sup>3</sup> Subject agreement is expressed via suffixes that follow the root, any derivational morphology, and any morphology for aspect. Subject agreement shows mood sensitivity. The paradigm in (3) reflects what Barraza de García (2005) and Ulloa (To appear) term the ‘indicative’.<sup>4</sup>

- (3) Shawi subject agreement, indicative mood (Hart 1988: 272, Barraza de García 2005: 141, Ulloa To appear)<sup>5</sup>

	MIN	AUG
1EXCL	-(a)we	-ai
1INCL	-e’	-ewa’
2	-(a)n	-(a)ma’
3	-in	-pi

Object agreement markers are also suffixes and appear on the verb following subject agreement markers. The form of object agreement is TAM-invariant.

- (4) Shawi object agreement (based on Hart 1988: 272, Barraza de García 2005: 141)<sup>6</sup>

	MIN	AUG
1EXCL	-ku	-kui
1INCL	-(n)pu’	-(n)pua’
2	-(n)ken	-(n)ke)ma’
3	Ø	Ø

The corpus examples in (5) illustrate the agreement system. Note that the same form is used for both transitive and intransitive subject agreement, showing a surface nominative/accusative alignment.<sup>7</sup>

- (5) a. kara taweri=keran pa’-ma-nte-r-**in**.  
           three day=ABL      go-DOWN-AGAIN-IND-3  
           After three days he went back again. (Ulloa To appear)

<sup>3</sup>Shawi uses a minimal-augmented number system (Ulloa To appear; see Corbett 2000 on systems of this type), as can be seen by the contrasts made in the agreement system in the paradigms in (3) and (4). However, most previous work has not glossed Shawi examples this way. Here, in glossing, a lack of indicated number is used for minimal number (generally previously described as ‘singular’), and augmented number is glossed as PL(ural).

<sup>4</sup>This category is labelled ‘non-future’ in Rojas-Berscia 2019. See Ulloa To appear for corpus evidence that mood rather than tense is the relevant category in Shawi.

<sup>5</sup>For both subject and object markers, Barraza de García (2005) does not include a final glottal stop (’) for any of the markers while Hart (1988) and Ulloa (To appear) do include this for some of them. We have chosen to represent the final glottal stop here. For the subject markers where the vowel *a* is indicated as optional, this seems to represent a difference in analysis across the available sources on the language in whether this vowel is treated as part of the subject marker or part of the preceding TAM suffix *-r(a)* ‘indicative’. There is also dialect variation to be grappled with, as Luis Ulloa (p.c.) notes.

<sup>6</sup>The indicated optionality of the initial *n* represents variation across sources for the 1st person markers and indicated optionality for the 2nd person markers in Hart 1988. The *ke* portion of the 2nd person plural marker is included by Hart (1988).

<sup>7</sup>We remark that this is the *surface* alignment because we will propose that the syntax underlying agreement in Shawi is somewhat more complex than this.

- b. Tata a'pa-r-in-ku.  
 father send-IND-3-1.O  
 Father sent me. (Ulloa To appear)

Shawi shows ergative case marking on some transitive subjects, expressed via the suffix *-ri*. This suffix shows the basic profile behavior of ergative as a dependent case: it appears only on transitive subjects and is ungrammatical in intransitive clauses, such as those in (6).

- (6) a. Ka-(\*ri) yunka-w.  
 1-ERG swim-1  
 'I swim.' (Bourdeau 2015: 19)  
 b. Wi'nawe-(\*ri) chiwe-r-in tanan-ke.  
 my.son get.lost-IND-3 forest-LOC  
 'My son got lost in the forest.' (Bourdeau 2015: 19)

The distribution of ergative case can be characterized as showing a global case split, that is, a split conditioned by the features of both arguments in a transitive clause. An initial description of the pattern is given in (7) (see Bourdeau 2015: 36).

- (7) Shawi hierarchical global case split (preliminary version)  
 Ergative appears when the subject is at least as high as the object on the person hierarchy  $1 > 2 > 3$ . Otherwise, subjects are nominative (morphologically unmarked).

We first illustrate this general pattern and then discuss complications related to 3rd person objects.

In the examples in (8), the subject outranks the object on the person hierarchy. Ergative marking on the subject is obligatory. Note that these examples show the object agreement on the subject (henceforth: OAgr-on-S) pattern described above—an additional marker of the object's features appears on the subject, after the ergative suffix. We return to this pattern at the end of this section and in Section 3.3.

- (8) Ergative obligatory when subject outranks object  
 a. 1SG→2SG (Bourdeau 2015: 24)  
 I'wara ka-ri-nke pera-ra-(w)-nke.  
 yesterday 1-ERG-2.O call-IND-1-2.O  
 'I called you yesterday.'  
 b. 1PL.EXCL→2PL (Bourdeau 2015: 24)  
 Kiya-ri-nke(ma) au-ra-i-nkema kampita.  
 1PL.EXCL-ERG-2PL.O hit-IND-1PL.EXCL-2PL.O 2PL  
 'We hit you.'

In the examples in (9), it is instead the object that outranks the subject on the person hierarchy, and ergative is ungrammatical.

(9) Ergative impossible when object outranks subject

- a. 2SG→1SG (Bourdeau 2015: 27)  
I'wara kema(\*-ri) nu'wi-r-an-ku.  
yesterday 2-ERG tell.off-IND-2-1.O  
'You told me off yesterday.'
- b. 3PL→1PL.EXCL (Bourdeau 2015: 27)  
Ya'wan-(r)usa(\*-ri) kete-r-in-kui.  
snake-PL-ERG bite-IND-3-1PL.EXCL.O  
'Snakes bit us.'
- c. 3SG→2SG (Bourdeau 2015: 28)  
Pitru(\*-ri) nate-r-in-(n)ke.  
Peter-ERG trust-IND-3-2.O  
'Peter trusts you.'

In view of this general pattern, we would anticipate ergative marking on the subject when the object is 3rd person, at least when the subject is itself higher on the hierarchy (1st or 2nd person). Indeed, it is possible to have an ergative subject with a 3rd person object, regardless of subject person, as shown in (10). However, ergative is now optional, in contrast to the pattern in (8).

(10) Ergative “optional” with 3rd person object

- a. 1PL.EXCL→3SG (Bourdeau 2015: 31)  
Kiya(-ri) na'wan-(r)a-i Pitru.  
1PL.EXCL-ERG miss-IND-1PL.EXCL Peter  
'We miss Peter.'
- b. 2SG→3SG (Bourdeau 2015: 31)  
Kema(-ri) paki-r-an mi'ne.  
2-ERG break-IND-2 mocahua  
'You broke the mocahua.'
- c. 3SG→3SG (Bourdeau 2015: 33)  
Pitru(-ri) iwa-r-in pepekunu.  
Peter-ERG steal-IND-3 necklace  
'Peter stole a necklace.'

Anticipating our analysis to be given in Section 3.2, we take this optionality to reflect variation in the external syntax of 3rd person objects. Notably, when a 3rd person object is fronted or is *pro*-dropped, ergative on the subject becomes obligatory (Barraza de García 2005, Bourdeau 2015). This is illustrated in (11) for object fronting. Ergative is optional on the subject with a 3rd person object and SOV order, as in (11a), but obligatory when the order is OSV, as in (11b).

- (11) Ergative sensitive to position of 3rd person object
- a. SOV: ergative optional (Barraza de García 2005: 159)  
Pituru-(**ri**) Kusi awe-r-in  
Pedro-ERG Jose hit-IND-3  
‘Pedro hit Jose.’
  - b. OSV: ergative obligatory (Barraza de García 2005: 159)  
Kusi Pituru-\*(**ri**) awe-r-in  
Jose Pedro-ERG hit-IND-3  
‘Pedro hit Jose.’

We will suggest that local person objects always move out of their base position in Shawi, and that 3rd person objects may but need not do so. Only when this movement has happened for the object does ergative, the “dependent” case, appear on the subject. This type of proposal, which closely follows other analyses made in connection with the idea of dependent case (e.g. Baker and Vinokurova 2010), allows the generalization about the Shawi case split to be refined as in (12).

- (12) Shawi hierarchical global case split (final version)  
Ergative appears when the subject is at least as high as the object on the person hierarchy  $1 > 2 > 3$  and both arguments are in the same syntactic domain. Otherwise, subjects are nominative (morphologically unmarked).

Considering the contexts that allow and disallow ergative case, the emerging pattern reflects what has been termed a ‘strictly descending’ (or ‘ultrastrong’, Nevins 2007) person hierarchy effect, well known from studies of agreement (Nevins 2007, Béjar and Rezac 2009, Walkow 2012, Bárány 2017, Pancheva and Zubizarreta 2018, Coon and Keine 2021, Clem 2022, Deal To appear b, i.a.):

- (13) Distribution of ergative case by person of subject and object

Subject	Object	Ergative
1	2	✓
1	3	(✓)
2	1	*
2	3	(✓)
3	1	*
3	2	*
3	3	(✓)

With this generalization in place, in the next section we show how an Agree-based case theory explains and connects two notable aspects of the Shawi data. The first is exactly this strictly descending  $1 > 2 > 3$  pattern in the distribution of ergative case. The second is the related fact that object agreement on the subject, OAgr-on-S, appears in Shawi *only if* the subject bears ergative case.<sup>8</sup> Where the subject does not bear ergative, e.g. in the  $2 > 1$  configuration shown in (14), OAgr-on-S cannot appear.

<sup>8</sup>As we discuss again in Section 3.3, this connection is an *only if* and not an *iff*: when the subject is ergative, OAgr-on-S is optional. Bourdeau (2015) notes that speakers “tend to double the object marking on the A argument

- (14) I'wara kema(\*-ku) nu'wi-r-an-ku.  
 yesterday 2(\*-1.O) tell.off-IND-2-1.O  
 'You told me off yesterday.' (Luis Ulloa, p.c.)

When present, OAgr-on-S (boxed in (15)) “doubles” the  $\phi$ -feature marking also realized on the verb (bolded in (15)).

- (15) 1PL.EXCL→2PL (Bourdeau 2015: 24)  
 Kiya-ri-nkema au-ra-i-**nkema** kampita.  
 1PL.EXCL-ERG-2PL.O hit-IND-1PL.EXCL-2PL.O 2PL  
 'We hit you.'

As we will see, this pattern is not just accommodated but in fact predicted on a theory where case dependency reflects the workings of Agree.

### 3 Shawi ergative case via Agree

#### 3.1 Theoretical background

The foundation for our analysis rests on the (relatively uncontroversial) idea that  $\phi$ -features are privative and geometrically organized, with the effect that nominals higher on the person hierarchy have a greater number of features. We assume in particular, following Harley and Ritter (2002), Béjar (2003), and many others, and setting aside number, that 1st persons bear [SPKR,PART, $\phi$ ], 2nd persons bear [PART, $\phi$ ], and 3rd persons merely bear [ $\phi$ ]. Béjar (2003) shows that this theory of features makes it straightforward to postulate probes that sometimes Agree with one goal, and sometimes with multiple goals, depending on the configuration of features available to them on potential goals in their domain. If, for instance, a probe is specified to halt only when [SPKR] is encountered, then if the first nominal it encounters is 1st person, that probe will Agree with just that one goal. If on the other hand, the probe first encounters a 2nd person goal, it will Agree with that goal, which has a proper subset of the features of a 1st person, and then proceed to inspect additional nominals in its domain for the presence of the feature [SPKR]. We will argue that in Shawi, the presence of ergative case on the subject is a signal that the subject has served as the second goal for the probe, whereas the absence of ergative on the subject reflects an elsewhere condition.

The pattern of separable “subject agreement” versus “object agreement” on the Shawi verb, and in particular the fact that the former but not the latter is TAM sensitive, suggests that agreement in the language involves two distinct loci, T and  $v$ .<sup>9</sup> The latter will be our emphasis here.<sup>10</sup> For Béjar

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right after the ergative marker *-ri*”, and notes that this doubling is found in most of his examples. He also notes that “the double marking of the O argument ... does not seem to convey any additional information compared to the unique marking strategy [i.e. no OAgr-on-S]. These two morphosyntactic strategies may [be] momentarily in free variation” (Bourdeau 2015: 26). Examples of ergative subjects both with and without OAgr-on-S are also documented in other work on Shawi, such as Barraza de García 2005.

<sup>9</sup>As noted above, Ulloa (To appear) has argued that Shawi is tenseless and that subject agreement reflects mood sensitivity. Thus it may be that the higher probe is somewhat higher in the functional sequence than T is typically assumed to be, a potential conclusion that leaves our reasoning here unperturbed.

<sup>10</sup>To be clear, we assume that subject agreement in Shawi involves a high probe that halts at the single highest



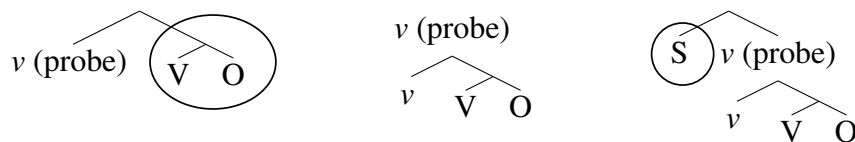
and Rezac (2009) and much following work, probes on  $v$  have a natural connection to multi-goal Agree, which arises from the pattern that Rezac (2003) dubs *cyclic expansion*. Suppose a probe on  $v$  is specified for a highly specific feature, such as [SPKR]. Upon merge of the  $v$  head, it probes its c-command domain, yielding Agree with an object if any object with  $\phi$ -features is present. (See (16) step ❶; the probe's domain is circled.) If the object bears [SPKR], probing stops. If, however, the object does *not* bear [SPKR], then the probe on  $v$  projects along with the head (❷), forming a new syntactic object (in  $X'$  terminology,  $v'$ ) that then merges with the subject (in Spec,  $vP$ ) and c-commands it, providing the probe with a new domain (❸).

(16) Cyclic expansion (Rezac 2003, Béjar 2003, Béjar and Rezac 2009), probe domains circled

❶ Probe is merged; Agree

❷ Probe projects

❸ Spec is merged; Agree



The merge location of  $v$  between object and subject thus gives a probe located there access to both arguments, beginning with the object, in view of the way its c-command domain changes in the course of structure building.<sup>11</sup>

The derivation of 1>2>3 person hierarchy effects under cyclic expansion is explored by Béjar and Rezac (2009) and more recently by Deal (To appear b), whose analysis we adopt here. (We note for clarity that this choice is not forced by the Shawi data, but rather made with an eye towards Section 5.2. There we discuss certain other global case splits, notably the weak-PCC-type pattern of Kolyma Yukaghir, which is difficult to capture using the tools of Béjar and Rezac 2009.) We assume accordingly that probe specifications are to be given separately in terms of the features that a probe copies (interaction) and those that cause it to halt its search (satisfaction) (see Deal 2015a, To appear b, §2). Furthermore, nominals in some languages bear features that are dynamic: they change the interaction specification of a probe that Agrees with them (see Deal To appear b, §5). The 1>2>3 hierarchy pattern arises when a probe positioned with potential access to multiple goals is satisfied by [SPKR] (probe specification [SAT:SPKR]) in a language where the feature [PART] interacts dynamically. In the next subsection we illustrate these assumptions for the Shawi  $v$  probe, focusing on the overall generalization that ergative occurs when the subject is a second goal for  $v$ . This then sets the stage for a closer look at the syntactic and morphological results of Agree in Shawi, including ergative case, in Section 3.3.

### 3.2 Deriving 1>2>3

Our goal in this section is to establish the generalization that ergative occurs in Shawi when the subject serves as the second goal for the  $v$  probe, whereas the absence of ergative is an elsewhere form.

argument, i.e. the subject, copying  $\phi$ -features from it and nothing else. Thus we assume multi-goal Agree in Shawi only for  $v$ .

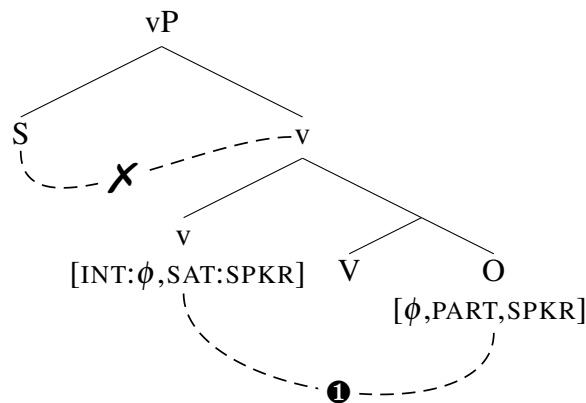
<sup>11</sup>For recent further discussion of cyclic expansion, see Clem 2023 and Keine and Dash To appear.

We begin with examples involving 1st person objects. In such cases, the object bears the feature [SPKR] which satisfies the probe. The  $v$  probe, specified to copy  $\phi$ -features (interaction specification  $\phi$ ), Agrees with the object and the Agree algorithm halts. Regardless of the subject's features,  $v$  does not Agree with the subject; the subject does not bear ergative case.<sup>12</sup>

(17) 1st person object: no ergative (Bourdeau 2015: 27)

- a. I'wara kema(\*-ri) nu'wi-r-an-ku.  
yesterday 2-ERG tell.off-IND-2-1.O  
'You told me off yesterday.'
- b. Ya'wan-(r)usa(\*-ri) kete-r-in-kui.  
snake-PL-ERG bite-IND-3-1PL.EXCL.O  
'Snakes bit us.'

(18)

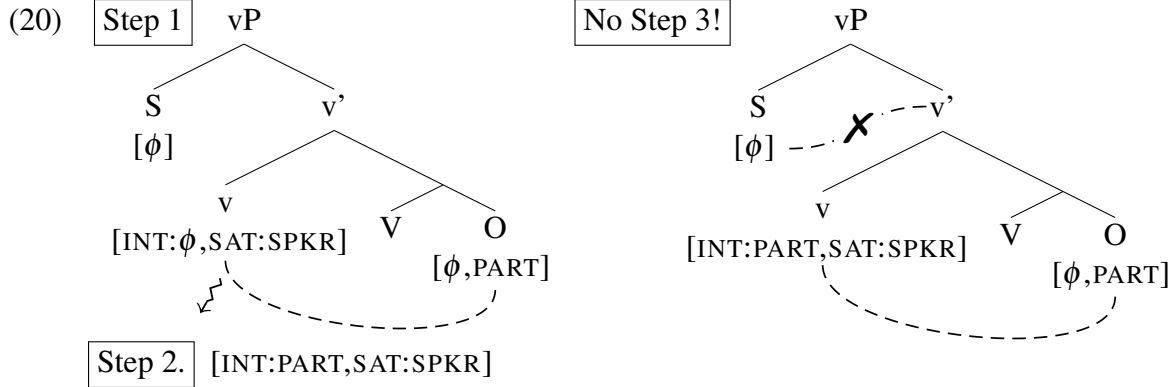


Next we turn to 2nd person objects. 2nd persons do not carry the feature [SPKR] and thus do not satisfy the  $v$  probe. Encountering a 2nd person object does, however, have an effect on the probe. This is because 2nd persons carry the feature [PART], which interacts dynamically: it changes the probe's interaction specification from  $[\phi]$  to [PART]. The consequence is that only subjects bearing the feature [PART]—which will have to be 1st person, given that the object is 2nd person—will be able to Agree with the  $v$  probe. When the subject is 3rd person, as it is in (19), it lacks [PART], and thus cannot interact with the probe. Once again, then, here the subject does not Agree with  $v$  and ergative case is absent.

(19) 3→2: no ergative (Bourdeau 2015: 28)

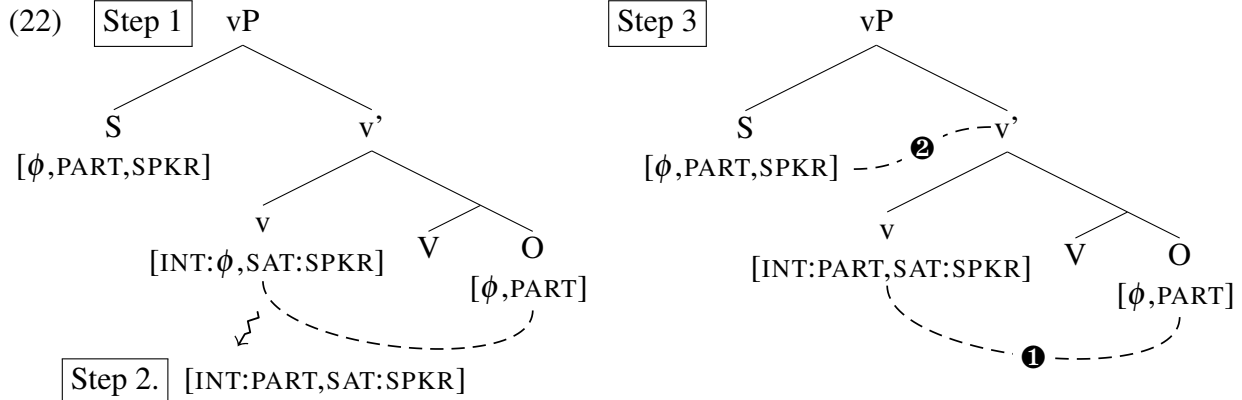
- Pitru(\*-ri) nate-r-in-(n)ke.  
Peter-ERG trust-IND-3-2.O  
'Peter trusts you.'

<sup>12</sup>Here and throughout, for ease of reading, we present trees linearized in a head-initial way, and generally write probe specifications only on heads (although we take probes to project, as described above).



Now we turn to configurations where *v* does successfully Agree with both the object and the subject. Continuing with 2nd person objects, changing the 3rd person subject of (19) to a 1st person subject, as in (21), makes it possible for the subject to Agree: it has a [PART] feature. This derivation is shown in (22). Note that in this instance, where the subject has served as a second goal for Agree with *v*, ergative case is now present on the subject.

- (21) 1→2: ergative (Bourdeau 2015: 24)
- I'wara ka-**ri**-nke pera-ra-(w)-nke.  
 yesterday 1-ERG-2.O call-IND-1-2.O  
 'I called you yesterday.'



The final situation to consider is one where the object is 3rd person. While ergative case has been described as generally optional in this situation, we suggest that the apparent optionality reflects a structural ambiguity relevant to agreement. In particular, we propose that some but not all 3rd person objects are available for Agree with the *v* probe. Since 3rd persons do not ever show overt object agreement in Shawi, our evidence comes indirectly, from patterns of ergative case in sentences with 3rd person objects. What is notable here is that the optionality disappears—and in fact ergative becomes obligatory—when the object is fronted or *pro*-dropped. The pattern is illustrated for fronting/scrambling in (23), contrasting optional ergative in SOV order with obligatory ergative in OSV.

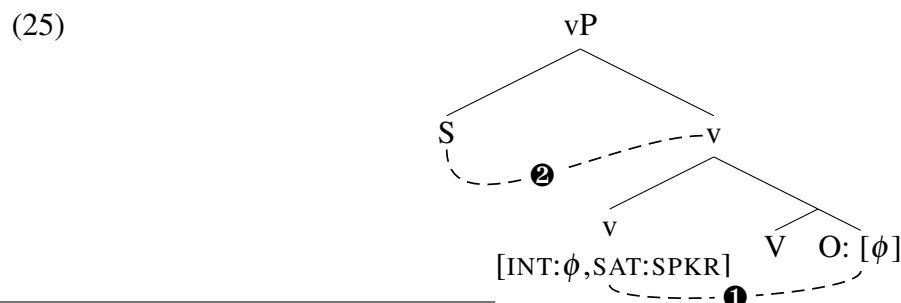
- (23) Ergative sensitive to position of 3rd person object
- SOV: ergative optional (Barraza de García 2005: 159)  
 Pituru-**(ri)** Kusi awe-r-in  
 Pedro-ERG Jose hit-IND-3  
 ‘Pedro hit Jose.’
  - OSV: ergative obligatory (Barraza de García 2005: 159)  
 Kusi Pituru-**\*(ri)** awe-r-in  
 Jose Pedro-ERG hit-IND-3  
 ‘Pedro hit Jose.’

The pattern is illustrated for *pro*-drop in (24).<sup>13</sup> When only the subject is overt in a transitive clause, it must be ergative marked, (24a). A single unmarked nominal in a transitive clause can only be interpreted as the object, (24b).

- (24) Ergative obligatory with 3rd person object *pro*-drop (Barraza de García 2005: 161-162)
- Sanapi-**\*(ri)** i-te-r-in  
 woman-ERG say-VAL-IND-3  
 ‘The woman told someone.’
  - Sanapi i-te-r-in  
 woman say-VAL-IND-3  
 ‘Someone told the woman.’

Such patterns strongly suggest that the syntax of the object is the decisive factor in determining case, a point familiar from the differential object marking literature. (The twist here is that the argument showing the differential marking according to object syntax is the subject, not the object itself.<sup>14</sup>) We conclude that one possible syntactic structure for the object allows the object to avoid agreement (and the details of this structure are to be discussed momentarily), whereas the other does not.

When the object is 3rd person and Agrees, it neither satisfies the probe (as it lacks [SPKR]) nor interacts dynamically with it (as it lacks [PART]). Therefore the subject will also serve as a second goal for Agree, regardless of its own features, (25). We take this to underlie the versions of (26) where the subject is indeed marked ergative.

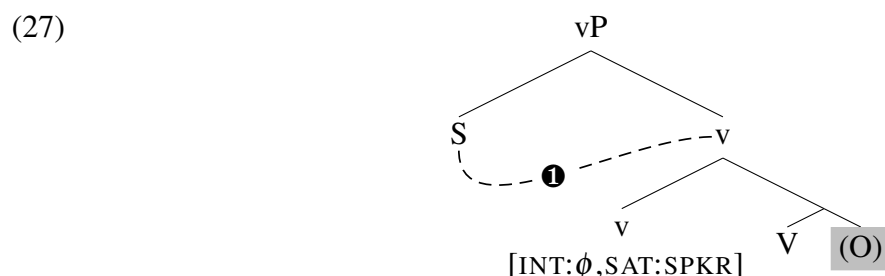


<sup>13</sup>The reader will note that many examples above with local person objects also show object *pro*-drop. The special thing about 3rd person objects is this: when they do NOT drop or scramble, ergative on the subject is merely optional. This is different for local person objects. See e.g. (15) above, with a 2nd person object, where ergative is obligatory on the subject despite an overt object and SVO order.

<sup>14</sup>Bárány (2017) makes a similar point for case in Sahaptin.

- (26) Ergative “optional” with 3rd person object
- a. 1PL.EXCL→3SG (Bourdeau 2015: 31)  
 Kiya(-ri) na’wan-(r)a-i Pitru.  
 1PL.EXCL-ERG miss-IND-1PL.EXCL Peter  
 ‘We miss Peter.’
- b. 2SG→3SG (Bourdeau 2015: 31)  
 Kema(-ri) paki-r-an mi’ne.  
 2-ERG break-IND-2 mocahua  
 ‘You broke the mocahua.’
- c. 3SG→3SG (Bourdeau 2015: 33)  
 Pitru(-ri) iwa-r-in pepekunu.  
 Peter-ERG steal-IND-3 necklace  
 ‘Peter stole a necklace.’

In contrast, 3rd person objects that do not Agree are invisible to the  $v$  probe. We first discuss the mechanics of Agree in this situation and then potential reasons why the object is not visible. Cases where objects are not visible to the probe are those where Agree proceeds as in an intransitive. In (27), we show the object parenthesized and in gray to indicate that the derivation proceeds in the same way when there is no object at all and when the object is not visible to the probe. The probe on  $v$  scans its domain, finds no features, cyclically expands, and Agrees with the subject:<sup>15</sup>



We take this structure with no object to underlie basic intransitives such as (28), and with an invisible object to underlie the versions of (26) where the subject is not marked ergative.

- (28) Ka>(\*ri) yunka-w.  
 1-ERG swim-1  
 ‘I swim.’ (Bourdeau 2015: 19)

The absence of ergative in such structures, even though  $v$  has Agreed with the subject, underlines a crucial piece of our generalization. The distribution of ergative is not simply about whether  $v$  has Agreed with the subject, but rather whether it has Agreed with the subject second, i.e. *after Agreeing with an object*. We return to this generalization in Section 3.3.

The major question raised by (27), of course, is how it should be that 3rd person objects are sometimes visible to Agree and sometimes not, and how this should connect with the word order

<sup>15</sup>We show this for an unergative structure here; for an unaccusative, similarly the probe finds only one argument, just without having to first undergo cyclic expansion.

and *pro*-drop facts noted in (23)-(24) above. We conclude this section with discussion of this issue. The literature on the syntax of differential object marking suggests two (potentially overlapping) lines of analysis. First, it might be that 3rd person objects are variable in their external syntax, occupying either higher or lower positions in the clause. This follows previous work such as Torrego 1998, Baker and Vinokurova 2010, and Baker 2014. Second, it might be that 3rd person objects vary in their internal syntax, coming in both smaller (e.g. NP) and larger (e.g. DP) varieties. This follows previous work such as Danon 2006, Deal 2010, and Bárány 2017. These views could also be combined, to the effect that smaller objects stay low and larger objects raise (e.g. Massam 2001, Coon 2010, López 2012). As applied to Shawi, either view would need to maintain that 3rd persons sometimes do and sometimes don't have a behavior in common with local persons, which themselves would always move to a higher position (on the height-based view) or always project a larger structure (on the size-based view).

While we think a version of either theory could be adapted to the Shawi data, we note that currently available evidence favors a height-based approach. A key prediction of this approach is that objects that appear high in the clause, to the left of other landmarks such as the subject, should have to participate in Agree, triggering ergative. This is exactly what we saw in (23), repeated below in (29). On the height based view, ergative is obligatory in OSV example (29b) because this word order can only be generated when the object moves high in the clause. When it moves high, it is visible to Agree with *v*. SOV example (29a), by contrast, is structurally ambiguous: the object may either remain low, e.g. in its base position, where it is invisible to *v*, or else undergo string-vacuous movement to a higher position (still internal to the *v*P, as we suggest in (33)) where the *v* probe can access it.

- (29) Ergative sensitive to position of 3rd person object
- a. SOV: ergative optional (Barraza de García 2005: 159)  
Pituru-(**ri**) Kusi awe-r-in  
Pedro-ERG Jose hit-IND-3  
‘Pedro hit Jose.’
  - b. OSV: ergative obligatory (Barraza de García 2005: 159)  
Kusi Pituru-\*(**ri**) awe-r-in  
Jose Pedro-ERG hit-IND-3  
‘Pedro hit Jose.’

Such contrasts suggest that a pure size-based approach is inapplicable to Shawi: object height matters, even if object size does as well. We note though that we are not aware of any evidence for variation in object size, either in the form of visible functional structure or indirectly, via effects on interpretation. Shawi does not have determiners. Possessive morphology on the object is possible both with and without ergative on the subject, as shown in (30). The form of the nominal phrase outlined by Barraza de García (2005: 104) suggests that numerals occupy the highest position; a numeral on the object is possible both with and without ergative on the subject, as in (31).<sup>16</sup>

<sup>16</sup>Luis Ulloa (p.c.) notes that the repetition of the noun *kayu* ‘egg’ in (31) may indicate the presence of clausal structure, such as a relative clause, embedding *atari kayu* ‘hen egg’. In this case, a better translation might be ‘I received three eggs, which were hen eggs.’ This leaves our main point unaffected.

- (30) Pitru-(**ri**) na'wan-in sa'-**in**  
 Peter-(ERG) miss-3 spouse-3  
 Peter misses his wife. (Bourdeau 2015: 32)
- (31) Ka-(**ri**) mapa-te-ra-we **kara** kayu atari kayu.  
 1-ERG receive-VAL-IND-1 three egg hen egg  
 I received three eggs. (Bourdeau 2015: 31)

In view of the evidence of height distinctions and the absence of evidence of size distinctions, we will henceforth assume a simple height-based distinction among 3rd person objects in Shawi. To account for the *pro*-drop facts shown in (24), we assume following van Urk (2015) that *pro*-drop in some languages requires movement to a high position. In Dinka, *pro*-drop is possible only in the Spec,CP position, giving rise to a surface V1 order in an otherwise V2 language.

- (32) *Pro*-drop only from Spec,CP in Dinka (van Urk 2015: 159)
- |  |   |
|--|---|
| <p>a. (Yêen) à-cùukù tîiŋ.<br/>       3SG 3SG-PRF.1PL see.NF<br/>       'Her/him, we have seen.'</p> | <p>b. Wóok cé *(yêen) tîiŋ.<br/>       1PL PRF.SV 3SG see.NF<br/>       'We have seen her/him.'</p> |
|--|---|

While Shawi is not a V2 language, it has in common with Dinka the abstract property that the object can only drop when it behaves in other respects like an object that is structurally high. In Shawi, behaving like a high object means triggering ergative case on the subject.

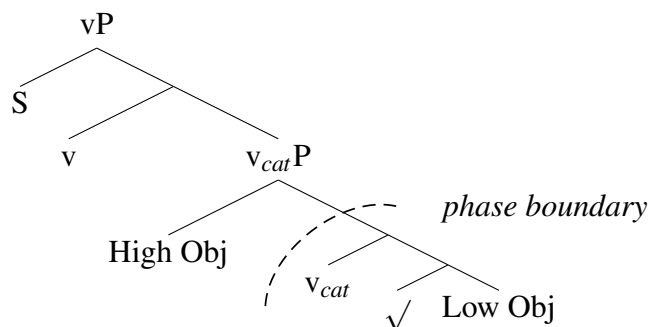
Height-based approaches to differential agreement typically work by positing that a given nominal can occur either above or below a locality boundary, e.g. a phase head. In the complement of the phase head, the nominal is invisible to probes in the higher phase; in the specifier position of the phase head, or higher, the nominal is visible to such probes. Adapting this logic to the Shawi data suggests the presence of a locality boundary between two positions for the object, both in the complement of the head introducing the external argument (which we have labeled *v*). One possibility for a phase head of this type is inner aspect (Travis 2010); another is the type of low *v<sub>caus</sub>* head posited by Legate (2014) and Harley (2017); a third is a low categorizing *v<sub>cat</sub>* head merged just above the root and its complement, as commonly postulated in Distributed Morphology.<sup>17</sup> For concreteness, inspired by the idea in Newell 2008 that categorizing heads are always phasal, we adopt the last of these views. Decomposing the node previously shown as V, we thus propose that verbs in Shawi reflect a root ( $\sqrt{\quad}$ ) and a phasal categorizing *v<sub>cat</sub>* head. The object first merges with the root; this is its low position.<sup>18</sup> 3rd person objects optionally move to Spec,*v<sub>cat</sub>* (and local person objects do so obligatorily); this is the high object position.<sup>19</sup> In the high object position, the object Agrees with *v* and serves as *v*'s first goal. In the low object position, the object is not visible to *v* and cannot Agree with it.

<sup>17</sup>Note that we have used the label *v* for what proponents of these latter two views dub Voice; readers are welcome to substitute the label Voice for *v* above. Our usage follows Béjar and Rezac (2009), Bány (2017), Deal (To appear b), and much other work on agreement hierarchy effects. The labels *v<sub>caus</sub>* and *v<sub>cat</sub>* are intended to clarify the distinctness of these proposed heads from the head introducing external arguments.

<sup>18</sup>On objects as true arguments of verbs, in contrast to subjects, see Kratzer (1996).

<sup>19</sup>Plausibly, the movement of these objects to Spec,*v<sub>cat</sub>* reflects a featural commonality between local persons and some 3rd persons—e.g. in Béjar 2003 and Bány 2017, the presence of a person feature.

(33)



In sum, in this section we have seen that ergative appears on the subject in Shawi when the subject serves as second goal for Agree with  $v$ . When the object is 1st person, or the object bears [PART] but the subject does not, the subject does not Agree with  $v$ . No ergative is possible here. This corresponds to rows c, e, and f in (34). By contrast, when the object is 2nd person and the subject is 1st person, the object and then the subject Agree with  $v$ . Ergative appears. This corresponds to row a in (34). Finally, for the remaining rows, b, d, and g, we have proposed that the optionality of ergative reflects structural ambiguity. The 3rd person object may stay low and thus avoid Agree with  $v$ . In this situation, while the subject Agrees with  $v$ , it is not the second goal for Agree with  $v$ . No ergative appears. The other option is for the object to move out of its minimal phase, making it accessible to the  $v$  probe. In this situation, the object Agrees first and the subject then Agrees second. Ergative appears on the subject.

(34) Distribution of ergative case by person of subject and object

	Subject	Object	Ergative	Derivation
a.	1	2	✓	(22)
b.	1	3	(✓)	with ergative, (25); without ergative, (27)
c.	2	1	*	(18)
d.	2	3	(✓)	with ergative, (25); without ergative, (27)
e.	3	1	*	(18)
f.	3	2	*	(20)
g.	3	3	(✓)	with ergative, (25); without ergative, (27)

In the next subsection we show how this generalization about the distribution of ergative, along with object agreement on the subject, follows naturally from Agree-based case theory, once feature transfer under Agree is understood as transitive.

### 3.3 From agreement to case

As in other work in Agree-based case theory, starting from Chomsky 2001, we take feature exchange under Agree to be bidirectional: features are copied from the goal to the probe and also from the probe to the goal. For clarity, to discuss this distinction, we adopt Deal's terminology (To appear a): we call copying in the goal-to-probe direction *valuation*, and copying in the probe-to-goal direction *goal flagging*.<sup>20</sup> One general way of describing Agree-based case theories is that

<sup>20</sup>While this terminology is relatively new, we emphasize that the idea behind it is not; bidirectional feature exchange under Agree, specifically for the matter of case, is clearly outlined in Chomsky's original works on Agree theory and widely adopted since.



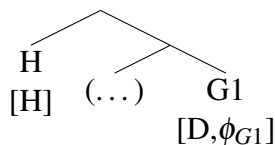
they are theories that treat case as goal flagging. More precisely, morphological case spells out features on a goal deposited there in virtue of an Agree relation established by a probe.

What exactly are these features that a probe deposits? We follow a broad range of approaches to case in assuming that descriptive case categories such as nominative, accusative, ergative, etc., do not reflect atomic features [NOM], [ACC], [ERG], and so on; rather, these descriptive categories emerge from the distribution of more primitive syntactic features, potentially in combination with each other (see e.g. Kiparsky 2001, McFadden 2004, Deal 2010, Caha 2013, Pesetsky 2013, Bárány 2017, Clem 2019). A clear example of this reduction of case to more primitive features is found in the work of Pesetsky and Torrego (2001), who propose to understand nominative case as a [T] feature on a nominal. This means that, instead of a model where a  $\phi$ -probe on T receives [ $\phi$ ] and transmits a *sui generis* [NOM] feature, we have a model where a  $\phi$ -probe on T receives [ $\phi$ ] and transmits [T]—in more general terms, *a probe flags its goal with its own features*. In a language where nominative case is spelled out with a special affix on a DP, this affix spells out the feature [T] in the context of the DP’s ‘native’ feature [D]. [T] is the goal-flag feature gotten from Agree with a T head; the context of [D] differentiates the occurrence of this feature on T itself vs. its occurrence on the goal that has Agreed with T.

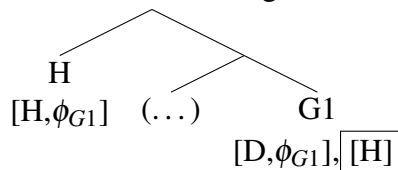
Which exactly are the features of a probe that are used to flag a goal? We propose a simple answer: all of them. That is, when a probe on head H Agrees with a DP, it flags that DP with the entirety of H’s features. A consequence is that feature transfer under Agree is transitive. Suppose probe H Agrees first with G1 and subsequently with G2. (In the example derivation in (35), we show a case where H occurs between its two arguments and Agrees with the second one after cyclic expansion. The same logic of course applies to instances in which H finds both of its goals within its initial c-command domain.) When it Agrees with G1, it transfers all its features (which for simplicity we treat here as just a category feature [H]) to G1 and it obtains G1’s  $\phi$ -features [ $\phi_{G1}$ ], as shown in (35b). The features of G1 now include [H] as a goal-flag; in the examples below, we separate out the features of a goal obtained via goal-flagging, and highlight them for the reader with a box. The features of the probe after this step are [H,  $\phi_{G1}$ ]. When H now proceeds to Agree with G2 (shown here after cyclic expansion in (35c)), it obtains G2’s  $\phi$ -features [ $\phi_{G2}$ ], and it transfers *all* its features, [H,  $\phi_{G1}$ ], to G2, as shown in (35d). The result is that G1’s  $\phi$ -features are transferred from G1 to H and from H to G2.

(35) Schematic of valuation and goal-flagging in multi-goal Agree

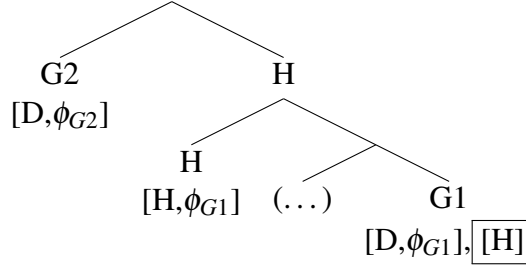
a. Merge H



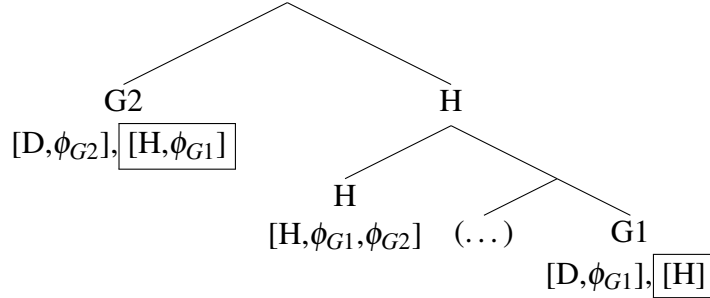
b. H Agrees with G1, bidirectional feature exchange



c. Cyclic expansion: H projects, Merge G2



d. H Agrees with G2, bidirectional feature exchange



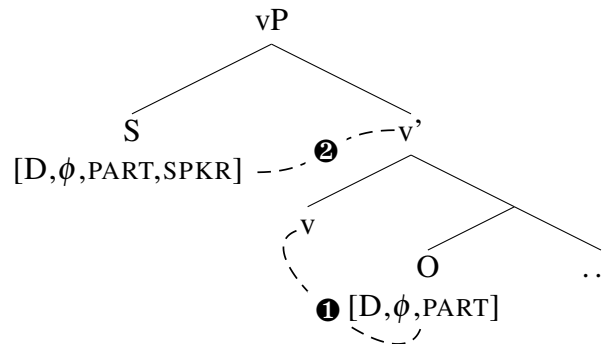
The upshot of this kind of system is that situations in which a single probe Agrees with multiple goals are situations in which the features of the first goal are transferred to the second goal by (two steps of) Agree. This, we propose, is the central mechanism by which patterns of case dependency arise in language. *Dependent cases are the spell out on a second goal of features transferred from the first goal.*

This generalization provides an immediate explanation of two aspects of the Shawi data reviewed above. First, as established in Section 3.2, ergative appears on the subject in Shawi when the subject serves as second goal for Agree with  $v$ . Second, as shown in Section 2, OAgr-on-S appears only if the subject is ergative. Both ergative case and OAgr-on-S appear in (36), where the subject is 1st person and the object is 2nd person. For this example, we have proposed that  $v$  Agrees with both arguments, as in (37). (This tree represents Step 3 of (22) above, lightly modified in view of object movement.)

(36) 1SG→2SG: ergative (Bourdeau 2015: :24)

I'wara ka-ri-nke pera-ra-(w)-nke.  
yesterday 1-ERG-2.O call-IND-1-2.O  
'I called you yesterday.'

(37)



After Agree, the object in this derivation (serving as G1) bears  $[D, \phi, \text{PART}], [\boxed{v}]$ , where the feature

[*v*] is a goal-flag. The subject, serving as G2, bears its own features [D,  $\phi$ , PART, SPKR] as well as the goal-flag features obtained from Agree with *v*: its overall feature structure at derivation's end is thus [D,  $\phi$ , PART, SPKR], [ $\phi$ , PART, *v*]. Ergative case and OAgr-on-S each realize part of the goal-flag feature complex. We propose in particular that the ergative case morpheme realizes the geometry root feature  $\phi$  in the goal-flag bundle, thus indicating strictly that *v* has Agreed with an object nominal of some type before Agreeing with the subject:

- (38) Shawi ergative case vocabulary item  
 $ri \leftrightarrow \phi / - [\phi, D]$

This vocabulary item ensures that *ri* will be realized only on a nominal (bearer of [D]) that hosts two instances of [ $\phi$ ] (one which the morpheme itself realizes and one which it requires for its context of insertion). Such nominal structures are characteristic of second Agree goals, allowing ergative to emerge precisely when an object is present to Agree with *v* first. What it means for ergative to be a dependent case is that it realizes a feature structure which can only be created when another nominal is also present in the same domain.

OAgr-on-S, for its part, plausibly realizes the remaining features in the goal-flag bundle: [PART, *v*]. We propose that the object agreement paradigm in general in Shawi reflects the feature [*v*] along with various  $\phi$ -features. To be more precise about object agreement, we note that while *v* Agrees in the syntax with both arguments of a transitive, its morphology overtly reflects only the first argument with which it Agrees. This type of situation is not unusual; see e.g. Rackowski and Richards 2005 and van Urk and Richards 2015, where a single probe Agrees with two goals and spells out features of only the first.<sup>21</sup> We suggest that this situation arises in Shawi due to impoverishment of *v*'s features in the morphology prior to Vocabulary Insertion. This process of impoverishment is plausibly related to the fact that the subject also Agrees with T, and thus that the subject's features are present twice in the structure underlying the verb word. Deletion of redundant agreement internal to a single word has elsewhere been studied under the heading of Kinyalolo's Constraint (see i.a. Kinyalolo 1991, Carstens 2003, 2005, Baker 2010, Tyler and Kastner 2022).<sup>22</sup>

- (39) Kinyalolo's Constraint (as formulated by Baker 2010)  
 \*Agreement on a lower head with NP X if there is a higher head that also agrees with X and the two functional heads are part of the same word at PF.

Notably, impoverishment applies to *v* specifically in those cases where *v* bears features that are also borne by T. In a transitive, this occurs when *v* Agrees with both arguments; the features of the outer argument (the subject) are also borne by T and are deleted from the lower head (*v*), as Kinyalolo's Constraint requires. In an intransitive, *v* only Agrees with the subject, and the same constraint applies (see (27)). In a transitive where *v* only Agrees with the object, however (which will occur when the object is 1st person, or the object is 2nd person and the subject is 3rd person), *v* and T do not bear features of the same argument, and no impoverishment occurs.

With the subject's features impoverished from *v*, *v* contains only the object's features at the point of Vocabulary Insertion. We propose therefore that Shawi object agreement morphemes, as

<sup>21</sup>Thanks to Peter Grishin for noting the relevance of this literature to questions of which features a probe expones. See also Halpert 2019, Grishin 2023, and Grishin and Deal 2023 for discussion of the idea that probes that interact with multiple goals can systematically vary in which features they expone.

<sup>22</sup>This constraint is not universal; see Baker 2010 for discussion. We assume, however, that it holds in Shawi.

shown in the paradigm repeated in (40), generally realize combinations of  $[v]$  and one or more  $\phi$ -features. A selection of vocabulary items are proposed in (41) (setting aside the precise featural nature of the inclusive/exclusive contrast).

(40) Shawi object agreement (based on Hart 1988: 272, Barraza de García 2005: 141)

	MIN	AUG
1EXCL	-ku	-kui
1INCL	-(n)pu'	-(n)pua'
2	-(n)ken	-((n)ke)ma'
3	Ø	Ø

(41) Shawi object agreement vocabulary items (selected)

- a. *ku*  $\leftrightarrow$  [SPKR,v]
- b. *kui*  $\leftrightarrow$  [SPKR,AUG,v]
- c. *-(n)ken*  $\leftrightarrow$  [PART,v]
- d. *-((n)ke)ma'*  $\leftrightarrow$  [PART,AUG,v]

The fact that object agreement can appear both on the verb and on the subject in Shawi reflects the fact that these two syntactic loci both bear  $\phi$ -feature/ $[v]$  combinations.

A consequence of the paradigm in (40) and the particular 1>2>3 hierarchy effect in place in Shawi is that OAgr-on-S is overt only when the subject is 1st person and the object 2nd person. There is no dedicated 3rd-person object agreement morpheme to insert, either on the subject or the verb, when the object is 3rd person; any other combination of subject and object features results in a situation where the subject does not Agree with  $v$ .

As a final note on the Shawi data, Bourdeau (2015) describes OAgr-on-S as preferred but not required in instances where the subject bears ergative case (and notes that this alternation does not carry meaning). There are several ways to capture the version of Shawi grammar without overt OAgr-on-S. One is to posit an impoverishment rule that applies to DPs, deleting [PART] features transferred there by Agree. Another is to amend the proposed vocabulary items for object agreement morphemes, e.g. by adding a context of insertion that allows them only to be realized in the verb-word. A third is to amend the proposed vocabulary item for the ergative case-marker such that it expones the entire  $\phi$ -bundle of the object on the subject, leaving no features left for object agreement morphemes to expone. A general observation to be made here, looking ahead to our discussion of other ergative and otherwise dependent case patterns in Section 5, is that the overt morphological appearance of OAgr-on-S (and its logical parallel, SAgr-on-O) is made possible but in no way necessary by the assumption of bidirectional feature transfer. Overt expression in the morphology requires not just the presence of features in the syntax but also the right range of vocabulary items for expressing those features in the relevant contexts (as well as the absence of impoverishment rules or other changes in the morphological component that may obscure the underlying syntactic structure).

To summarize this section, we have shown how the idea of bidirectional feature-transfer under Agree, combined with the plausible assumption that probes use all of their features as goal-flags (none of their features being any more special than any others in this respect), produces a theory in which feature transfer under Agree is transitive. This transitivity means that the second goal to Agree with a probe will in general inherit the features that the probe obtained from its first goal.

This, we claim, is the mechanism by which case dependency arises. Ergative is available on a subject only when an object is present because ergative case morphology actually *is* features of the object realized on the subject.

Before turning to a comparison of our theory with other work in the following section, we wish to emphasize how our account of ergative case builds on the understanding of ergative developed in Deal 2010 and Clem 2019. Like this prior work, we have understood ergative case patterns as reflective not of a syntactic primitive [ERG], but rather of a complex of features, including those of the object, on the subject. A direct precursor of our analysis of Shawi OAgr-on-S is the discussion of the global case split in Sahaptin in Deal 2010 (§6). In Sahaptin, only a local person object gives rise to ergative on the subject. Deal proposes that this is so because the “ergative” marker in this language in fact expones the object’s [PART] feature, transferred to the subject. On this analysis, the Sahaptin ergative marker can be seen as a portmanteau realization of two pieces that are realized separately in Shawi, namely ergative case and OAgr-on-S.

## 4 Alternative approaches

The Shawi data present two analytical puzzles: 1) how to derive the global nature of the case split, and 2) how to account for the presence of object agreement on the subject (OAgr-on-S). Crucially, these two issues are interrelated in Shawi. The expression of OAgr-on-S is only possible when the subject is marked with ergative case. While both global case splits and apparent agreement between nominals have been theorized elsewhere in the literature, we will show that no existing approach (and no simple extension of configurational case theory) provides a unified account of these two phenomena. Thus, under alternative analyses it would be a coincidence that OAgr-on-S is possible only when the subject and object meet the conditions for ergative case to be marked. We therefore conclude that our unified account is preferable. We discuss alternative approaches to the two phenomena in turn, starting with global case splits.

### 4.1 Global case splits

As we have seen, global case splits like that found in Shawi necessitate a consideration of the features of multiple nominals in the clause in order to determine case marking on a single nominal. At a broad level, this type of global consideration of multiple nominals simultaneously to determine case marking is the type of procedure that underlies the configurational case theory we discussed in Section 1. To our knowledge, however, the only previous attempt to account for Shawi-type global case splits within a configurational case rule framework is Bárány and Sheehan To appear—a work whose major conclusion is that configurational frameworks are, indeed, *not* adequate to this task.

Bárány and Sheehan discuss two potential ways that global case splits could in principle be handled in a configurational theory. The first is via person-sensitive argument shift. This type of proposal has been made by Yuan (2020) for a global case split in the Papuan language Yimas. Yimas has a different type of hierarchical pattern than does Shawi: ergative appears only when the object is 3rd person. (This is parallel to a strong PCC pattern. We discuss this kind of pattern again in Section 5.) Yuan makes use of an idea we have also used for Shawi, namely that 1st and 2nd person objects undergo a type of movement that 3rd person objects generally do not. Due to this movement, she proposes, 1st and 2nd persons receive a special inherent case (dative), and thus do

not serve as case competitors for subjects. Therefore, subjects do not receive ergative. In Shawi, we do not see special (dative) case marking on objects in sentences where ergative is unavailable, but more centrally, the difference in the type of hierarchy effect renders an explanation based on person-sensitive object shift unavailable (as Bárány and Sheehan also note). A  $1 > 2 > 3$  hierarchy effect means that second person objects sometimes do and sometimes do not trigger ergative on the subject, depending on the subject's own features. As Bárány and Sheehan conclude, "Since this is a global split, the properties of the object itself cannot be the movement trigger." We concur with their conclusion that person-conditioned object shift, together with simple ergative rules of the kind in (1), does not suffice to derive the Shawi-type pattern.

A second option explored by Bárány and Sheehan is to write language-specific hierarchy patterns into the configurational case rules themselves.<sup>23</sup> This might look as in (42):

(42) Potential configurational rule for Shawi ergative

If there are two distinct NPs in the same spell out domain such that NP1 c-commands NP2, and NP1 is at least as high as NP2 on the person hierarchy  $1 > 2 > 3$ , then value the case feature of NP1 as ergative unless NP2 has already been marked for case.

Such a rule is simple to state. However, we see three challenges raised by an extension of configurational case theory in this direction.

The first two challenges relate to the connection between case and agreement. Under configurational approaches to case, (dependent) case and agreement rely on entirely separate grammatical mechanisms; this is by design (see discussion in Baker 2015, ch. 2). In the particular case of Shawi, this means that the connection between ergative distribution and the distribution of OAgr-on-S will be missed (a problem that recurs for many other potential approaches, as we discuss below). One of these patterns reflects a rule like (42), whereas the other reflects an entirely different mechanism of grammar altogether. Beyond Shawi, this separation precludes unification of the person hierarchy effect in a rule like (42) with instances of an identical person hierarchy effect in agreement (e.g. in Spanish ditransitives; Pancheva and Zubizarreta 2018). If, in general, the same types of person hierarchy effects crop up in case splits and in agreement—and we will give some reason to think this is so in Section 5—that generalization will be missed.

Our third concern is that the introduction of hierarchy effects into configurational case rules opens the door to other types of amendments to case rules in a way that weakens the predictive power of the theory. That is to say, if we allow configurational case rules to take account of factors other than the number of nominals and their c-command (and, for Baker 2015, the domain they occur in), we see no principled limit to the kinds of factors or stipulated hierarchies that such rules may and may not include.<sup>24</sup> We note here by contrast that our Agree-based approach is constrained by the theory of features we adopt and the particular workings of the operation Agree; it would not be possible in our system to derive a version of Shawi where the hierarchy effect were instead  $1 > 3 > 2$ , for instance.<sup>25</sup> But we see no way of ruling out this type of system on a theory built on

<sup>23</sup>There are more and less direct ways to do so. While we focus on a more direct way here, see Bárány and Sheehan (To appear: §3.4.2) for a discussion of a less direct way, involving person-sensitive DP structure.

<sup>24</sup>This issue is also alluded to by Bárány and Sheehan (To appear), who reference in particular the connection between configurational case theory and the idea of a 'distinctness' requirement on nominals, esp. as understood by Richards (2010).

<sup>25</sup>See Deal To appear b for typological discussion of predicted person hierarchy effects in the model of Agree we assume.

rules like (42), given that the person hierarchy there is simply stipulated.

We now turn to other accounts of global case splits in the previous literature, which can be sorted into two approaches, representational and derivational. Representational approaches to global case splits typically rely on Optimality Theoretic (OT) constraints as a type of filter. There have been many OT analyses of case marking patterns (Legendre, Raymon, and Smolensky 1993, Aissen 1999, 2003, de Hoop and Lamers 2006, de Swart 2006, a.o.), and here we illustrate with de Hoop and Malchukov's (2008) approach to case marking as applied to global splits. For de Hoop and Malchukov, there are competing pressures at stake in determining case marking. Due to general economy considerations, morphological marking of case is dispreferred (ECONOMY). However, there is also a pressure for the two arguments of a transitive verb to be distinguishable from one another, as enforced by a constraint DISTINGUISHABILITY. Arguments can satisfy DISTINGUISHABILITY by being sufficiently semantically distinct in a canonical way (e.g. by the agent being higher in person or animacy than the patient). Arguments can also satisfy DISTINGUISHABILITY by bearing case marking that indicates their grammatical function, though this is penalized as a violation of ECONOMY. When DISTINGUISHABILITY outranks ECONOMY and there is not a sufficient semantic distinction between arguments, a morphological distinction between the arguments (i.e. case marking) will have to be made.

This type of approach predicts that in a global split ergative pattern, ergative should occur when the object ranks higher than the subject in terms of person or animacy. However, that is not the pattern that we find in Shawi. The strictly descending pattern of Shawi instead involves subjects being marked with ergative case only when the object is equal or *lower* on the hierarchy  $1 > 2 > 3$ .<sup>26</sup> Additionally, like the potential configurational case theory approach discussed above, this type of approach to case marking has nothing to say about OAgr-on-S and would require a distinct mechanism to derive this additional agreement found in the presence of ergative case.

In the realm of more derivational approaches, the basic strategy is to locate agreement and case assignment in a single functional head that establishes a dependency with both arguments relevant for calculating the case split (e.g. Béjar and Rezac 2009, Keine 2010, Georgi 2012, Bány 2017, Bány and Sheehan To appear); this of course in general terms is also the strategy we have pursued above. As we will see, however, previous work in this vein has taken a different approach to case assignment than ours, and accordingly a quite different line on how case and agreement are connected. Previous accounts differ in the details of how they implement the interaction between agreement and case, and here we focus on a set of accounts that rely on impoverishment to derive global splits.

Keine (2010), Bány (2017), and Bány and Sheehan (To appear) offer impoverishment-

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<sup>26</sup>de Hoop and Malchukov (2008) present the Papuan language Fore as having ergative marked on the subject when the object is higher on the person hierarchy (i.e. the opposite of the Shawi pattern, and the pattern they predict). Fore is also characterized this way in Malchukov 2008 and Georgi 2012, as is the Gunwinyguan language Dalabon in Silverstein 1976. For Fore, as Bány (2017) points out, it is very much in question whether there even is an ergative case system. The morpheme analyzed as an ergative case marker by de Hoop and Malchukov can appear on unaccusative subjects and even on objects; the original source on the language, Scott 1978, suggests it is a 'pure nominative-accusative type language' (p. 102). Further empirical work on this language is likely necessary to clarify the exact nature and distribution of the nominal marking in question. For Dalabon, more recent and in-depth descriptive work (Luk and Ponsonnet 2019) has shown that the supposed ergative marker referenced by Silverstein can (like in the Fore situation) appear in certain intransitive clauses as well, suggesting again that it is not a dependent case. Luk and Ponsonnet (2019) conclude that the function of the morpheme in question is to 'mark out the unexpected referent', a notion connected to topicality.

based analyses of global case splits. While the analyses differ in several respects (for instance, Keine uses harmonic alignment of scales in an OT framework to govern impoverishment while Bárány and Bárány and Sheehan rely on language-specific impoverishment rules), we focus here on what these approaches have in common. These analyses assume that heads bear *sui generis* case features for assignment to nominals, and that processes of impoverishment can alter (delete) these features; they furthermore assume that impoverishment rules (contrary to their general use in Distributed Morphology) can actually apply *in the narrow syntax*, which makes it possible for impoverishment to feed or bleed syntactic operations. The general idea is that a head collects features from (potentially) multiple arguments via  $\phi$ -Agree, and depending on the outcome of that collection, it potentially loses (via impoverishment) some of its ability to assign case. A stipulated order of operations is crucial here:  $\phi$ -agreement with all nominals comes first, followed by syntactic impoverishment, followed by assignment of case. If applied to Shawi, this type of theory could assume that  $\nu$  enters the derivation with an [ERG] feature to assign. When it Agrees with only one argument, however, an impoverishment rule applies and takes its [ERG] feature away.<sup>27</sup> It is only in instances where  $\nu$  successfully Agrees with both arguments that its ergative-assigning capacity is able to survive.

Both the similarities and the differences between this account and ours bear mention. In terms of similarities, both accounts make crucial use of the idea that sometimes just one argument Agrees, sometimes two, as determined by the basic architecture of Cyclic Agree (Béjar and Rezac 2009). Both accounts also take case to be assigned as part of Agree. Two major differences relate to the way that impoverishment works and the nature of case and its underlying features. For us, impoverishment is strictly an operation of the morphological component and cannot feed or bleed operations in syntax. We take this to be the more constrained position. In terms of the features responsible for morphological case, Keine, Bárány, and Bárány and Sheehan treat case features as *sui generis* syntactic objects, properties of a head that can be altered by a rule that looks at the  $\phi$ -features collected on that head. Assignment of case by those features is a separate step of a derivation that can be explicitly ordered with respect to other syntactic operations. For us, case features in a strict sense do not exist. What is found in the syntax are category features, and these features alone or in combination with other features are what is realized as morphological case. There is no separable step in a derivation when “case is assigned”; case is simply a consequence of the goal flagging that comes with  $\phi$ -Agree. Again we take this position to be the more parsimonious one.

These theoretical differences come with empirical differences regarding predicted patterns. A theory such as Bárány (2017) or Bárány and Sheehan (To appear), which allows for free writing of syntactic impoverishment rules, faces the same challenge of overgeneration as discussed above for a potential approach in configurational case theory. That is, there is no particular reason why impoverishment should have to apply in an “inverse” configuration according to a  $1 > 2 > 3$  hierarchy, instead of (say) a  $1 > 3 > 2$  hierarchy instead. It is also not clear that either Keine’s (2010), Bárány’s (2017) or Bárány and Sheehan’s (To appear) views lends itself to a connection between ergative case and OAgr-on-S. That is, there is no principled reason under this type of approach

<sup>27</sup>This type of proposal fits better into Bárány (2017) and Bárány and Sheehan’s (To appear) treatment than Keine’s (2010). Because Keine’s (2010) approach to impoverishment is governed by harmonic alignment of scales, the Shawi strictly descending pattern of ergative marking is unexpected. For Bárány and Bárány and Sheehan, on the other hand, impoverishment is simply governed by language-particular syntactic rules and we see no obstacle to positing the relevant rules.



that extra agreement should only be possible in the presence of the more marked case value. Other derivational approaches to global case splits (Béjar and Rezac 2009, Georgi 2012) also fail to make this connection.

## 4.2 Agreement between nominals

Now we turn to the pattern of one nominal bearing the  $\phi$ -features of another nominal—in Shawi, OAgr-on-S. Existing analyses of similar phenomena differ in whether they assume that nominals Agree directly with each other or rather whether agreement is mediated by a functional head, as we assume here. Regardless of the approach taken, though, previous accounts do not connect this  $\phi$ -agreement on nominals to case marking.

An approach to apparent agreement between nominals that bears significant similarity to ours is the mediated Agree analysis of Archi (Nakh-Daghestanian; Russia) pursued by Polinsky, Radkevich, and Chumakina (2017). In Archi, certain 1st person pronouns bear noun class agreement that is controlled by the absolutive argument in the clause. Polinsky et al. analyze this pattern as the result of agreement with  $v$ . In transitive clauses,  $v$  Agrees with the absolutive object before it Agrees with structurally higher non-absolutive DPs. When these higher DPs enter into an Agree dependency with  $v$ , they can receive a copy of the class feature on  $v$  that originated with the lower absolutive DP. This approach thus resembles the bidirectional feature exchange that we have pursued in our analysis of Shawi.

An important point that distinguishes our current proposal from Polinsky et al.’s treatment of Archi concerns the connection between the transmission of  $\phi$ -features between arguments via  $v$  and the presence of case marking on the subject. While Polinsky et al. assume that ergative case is assigned by  $v$  only in clauses that have an absolutive argument, their analysis does not connect the availability of ergative case to the presence of object  $\phi$ -features on  $v$ . Given the tight connection between ergative case and the availability of OAgr-on-S in Shawi, a unified analysis of the two phenomena appears to be motivated.

Another approach to agreement between arguments that differs more substantially from the account we pursue here is offered by Branan (2019). Branan offers an analysis of a typologically unusual pattern of agreement found in Coahuilteco, an extinct language isolate that was spoken in what is now Texas and Mexico. Non-subject arguments in Coahuilteco can bear morphology that covaries with the  $\phi$ -features of the subject of the clause. Rather than pursuing an analysis where this agreement is mediated by a functional head, Branan proposes that nominal arguments can establish Agree dependencies directly with one another. Specifically, he assumes that the subject can probe its c-command domain to establish a dependency with a lower nominal argument. The  $\phi$ -features of the subject are then transferred to this lower goal.

One crucial way in which the Coahuilteco pattern differs from the pattern found in Shawi is that, judging from Branan’s exposition, there does not appear to be a nominal hierarchy effect in Coahuilteco. In order to derive the strictly descending pattern of Shawi, the ability of a nominal to copy or expone  $\phi$ -features of another nominal would have to depend on the relative person values of the nominals involved. In a mediated approach to agreement between arguments, this is straightforwardly derivable via existing approaches to person hierarchies in agreement. In terms of the connection between OAgr-on-S and ergative case, Branan does briefly mention a possible connection between direct agreement between arguments and dependent case. However, there is no attempt made to implement case assignment via this inter-argument agreement. Under our

approach, the implementation of this aspect of the analysis also relies on previous work, namely the treatment of ergative case as reflecting the fact that  $v$  had Agreed with a lower argument before Agreeing with the transitive subject (Deal 2010, Clem 2019).

### 4.3 Summary

We have seen in this section that alternative approaches to global case splits and alternative approaches to agreement between arguments could potentially be applied to each of those pieces of the Shawi pattern independently. The recurrent challenge for alternative approaches is to connect these two aspects of the data to each other, explaining why it is that OAgr-on-S happens only when the subject is ergative in Shawi.

On our approach, the unification of these two phenomena comes from the bidirectionality of feature exchange under Agree. Agree includes both valuation and goal flagging, transferring features not just from goal to probe but also from probe to goal. Because the derivation proceeds cyclically, this means that as a probe collects features from goals, it will gain more features that will be transmitted to future goals. As we have shown, these simple assumptions prove to be all that is needed in the syntax to derive the global nature of the case split in Shawi and the distribution of OAgr-on-S from existing mechanisms that derive person hierarchy effects in agreement. This approach is thus simpler than alternatives that would have to posit multiple distinct mechanisms (potentially with additional technology that is not independently motivated) to derive global splits and apparent agreement between arguments.

## 5 Typology

In this section, we explore how our analysis can be extended to a range of other case patterns. We first consider how the analysis developed in Section 3 can be adapted to account for simple dependent case patterns—both ergative and accusative—in the absence of global splits. We then consider other types of hierarchy effects found in global splits and illustrate how our analysis can extend to those patterns as well. A take-away will be that global case splits show the same variety of person hierarchy effects found elsewhere in the world of agreement (e.g. in PCC effects in ditransitives, Nevins 2007 a.m.o., and in inverse systems, Clem 2022).

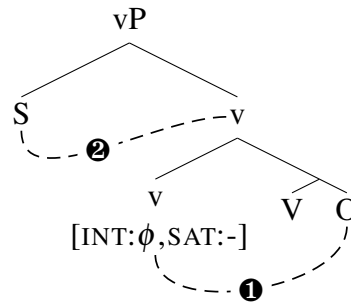
### 5.1 From ergative to accusative: Dependent case via Agree generalized

Our analysis derives the dependent nature of ergative case from the fact that ergative case expones the features of another argument that has previously been Agreed with by  $v$ . The distribution of ergative therefore essentially depends on the ability of  $v$  to Agree with a subject after an object has already Agreed. Different types of Agreement patterns by this type of head are expected to yield different distributions of ergative case.

The agreement pattern of interest in this section is one where both arguments always Agree with the probe, regardless of their person specification. Following the analysis of strictly descending person hierarchy effects in Deal To appear b, we have attributed the strictly descending hierarchy found in the Shawi global split to two factors:  $v$  is satisfied by the feature [SPKR], and it dynamically interacts with the feature [PART]. Consider now what would happen if neither of

these constraining factors were in place—in particular, let us assume that the  $v$  probe lacks any satisfaction condition (i.e. it is insatiable; Deal 2015b, To appear b), and no features dynamically interact. This will yield the desired result: the probe Agrees with both arguments regardless of their person features, yielding consistent ergative marking on the transitive subject. This is essentially the analysis that has been proposed in previous work for ergative case marking in Nez Perce (Deal 2010) and Amahuaca (Clem 2019).

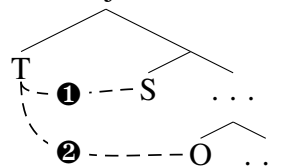
- (43) Ergative, no global split: insatiable  $v$  always Agrees with both arguments



In the world of ditransitives, this type of derivation mirrors the pattern that Deal (To appear b) calls ‘Double Weakness, no PCC’: both arguments arguments Agree and there is no person restriction.

Let us now consider what should be expected if a similarly insatiable probe were to occur higher than both the subject and the object. In this instance, we expect the subject to Agree with the probe first, serving as G1. The object Agrees second, serving as G2. By the transitivity of feature transfer, the result will be that subject features are transferred to the object in this type of setup. We suggest that this underlies what through the lens of dependent case theory is the mirror image of ergative case: dependent accusative case. The basic structure is schematized for a T probe in (44).<sup>28</sup>

- (44) Dependent accusative: T Agrees with subject and then object



To illustrate this approach to accusative case, we will consider a pattern of accusative marking in Sakha (Turkic) that has been argued to provide support for a configurational approach to case assignment (Baker and Vinokurova 2010). Sakha shows a differential object marking (DOM) pattern that is conditioned by definiteness and specificity and is also correlated with word order differences. With respect to word order, when direct objects appear to the left of indirect objects and VP-adverbs, they are generally marked with accusative case, as shown in (45).

<sup>28</sup>The connection between probe height and dependent case pattern is also explored in Poole (2023a): dependent accusative reflects a high probe, whereas dependent ergative reflects a low probe.

(45) DOM and VP-adverbs in Sakha (Baker and Vinokurova 2010: 602)

- a. Masha salamat-\*(y) tūrgennik sie-te.  
Masha porridge-ACC quickly eat-PST-3SG  
'Masha ate the porridge quickly.'
- b. Masha tūrgennik salamat-(#y) sie-te.  
Masha quickly porridge-ACC eat-PST-3SG  
'Masha ate the porridge quickly.'

This pattern is not unlike the pattern of word order sensitivity seen with ergative case and 3rd person objects in Shawi. As Baker and Vinokurova (2010) argue, when the object moves into the same syntactic domain as the subject, accusative case is marked, but when the object remains low and is in a different syntactic domain than the subject, there is no accusative case marking. As we saw with Shawi, this type of pattern is straightforwardly captured under our Agree-based approach to case as well.

We take the structure underlying accusative case assignment in Sakha to be (44). (Note that the postulation of a high probe on T, Agreeing with the subject, follows Baker and Vinokurova 2010.) The Sakha T probe is insatiable and no features interact dynamically. Therefore T will always first Agree with the subject, but it will not be satisfied, and it will retain the ability to interact with all  $\phi$ -features. Thus it will continue to probe. If the object has moved to a high enough position in the clause (outside of a low  $\nu$ P phase), it will be able to serve as a second goal for Agree, as schematized in (44).

As the result of Agree, the object will be goal-flagged with a bundle of features from T. This bundle of features will contain the subject's  $\phi$ -features, thus indicating the presence of another nominal in the same syntactic domain. It is this bundle of  $\phi$ -features from the subject that will be spelled out as accusative case on the object, as seen in (46).

(46) Sakha accusative case vocabulary item<sup>29</sup>

$$y \leftrightarrow \phi / - [\phi, D]$$

Note that, aside from the phonological form of the marker, this vocabulary item is identical to the Shawi ergative marker shown in (38). This is what we expect given the dependent nature of both ergative and accusative case: both case markers reflect that a nominal was the second goal for a probe. The difference between ergative and accusative systems lies in the location of the probe. If a probe is located between the subject and the object (e.g. on  $\nu$ ), it will Agree with the object first and then the subject, resulting in dependent ergative marking of the *subject*. If the probe is located higher than both arguments (e.g. on T), it will Agree with the subject first and then the object, resulting in dependent accusative marking of the *object*.

A crucial difference between our Agree-based approach to accusative case and previous Agree-based analyses (apart from Poole 2023a) concerns exactly the logic that makes accusative case “dependent”. We have sketched a view of accusative in Sakha that predicts accusative to occur on the lower of two nominals Agreeing with T. Our view notably does *not* predict that accusative should be available only when the higher argument receives a certain theta role (Burzio’s generalization).

<sup>29</sup>We use the form of accusative from (45) to illustrate, though accusative in Sakha shows allomorphy (Baker and Vinokurova 2010: 598).

As Baker and Vinokurova (2010) argue, this is correct (and is “perhaps the most spectacular evidence for the dependent case account of accusative in Sakha” (p. 615)): there are a number of configurations in Sakha where a nominal can be marked with accusative case by virtue of appearing in the same syntactic domain as the subject, even when the main predicate is unaccusative or passive. Example (47), for instance, shows a type of raising to object construction that allows for accusative on the raised element in spite of the unaccusativity of the matrix verb.

- (47) Masha [ Misha-**ny** [ yaldj-ya                    dien ]] tönün-ne.  
 Masha Misha-ACC fall.sick-FUT.3SG that return-PST.3SG  
 Masha returned (for fear) that Misha would fall sick. (Baker and Vinokurova 2010: 618)

Our account of Sakha case marking is able to capture this pattern: any nominal that appears in the domain of T’s probe but lower than the subject can be marked with dependent accusative case, regardless of the functional structure in which the arguments themselves are introduced. Under our approach, just as in Baker and Vinokurova’s analysis, what is crucial for accusative case is that there are two nominals in the same syntactic domain. So long as a nominal is the second goal for Agree with T, it can be marked with (the features that are realized as) accusative case. Thus, our analysis is able to derive the “dependent” nature of this case in Sakha (and beyond).

## 5.2 Other types of global case splits: Weak and strong PCC

So far we have discussed two types of patterns in Agree between a single head and (potentially) multiple goals. In Shawi, the 1>2>3 person hierarchy effect results from the combination of the [SAT:SPKR] specification of the probe and the dynamic interaction behavior of the feature [PART]. In languages without global case splits, on the other hand, the presence of dependent case without a person hierarchy effect results from an insatiable probe [SAT:-] and the absence of features that dynamically interact. As Deal (To appear b) shows, as applied to ditransitives, these two possibilities are part of a broader attested space of options, the two best attested of which are the so-called ‘strong PCC’ and ‘weak PCC’ patterns. In this section we show that these patterns occur in global case splits and that our analysis straightforwardly accounts for them.

In a strong PCC pattern, Agreement with two goals requires G1 to be 3rd person. Shiwilu, Shawi’s sister language and the other member of the Kawapanan family, shows a case split reflecting this constraint.<sup>30</sup> Our discussion of this pattern is based on the data and generalizations in Valenzuela 2011. In Shiwilu, there is an enclitic =*ler* that can appear only on transitive subjects. This marker is only possible when the object is 3rd person, as shown in (48)–(49).

- (48) No ergative with local person objects  
 a. 1SG→2SG (Valenzuela 2011: 100)  
 Kwa tek-susu-lle.  
 1SG CAUS-grow.up-1SG>2SG  
 ‘I raised you.’

<sup>30</sup>So too does Yimas, another ergative language; see section 4.

- b. 2PL→1SG (Valenzuela 2011: 100)  
 Ma'ki'na kenmama' lumer-lama'u'ku?  
 why 2PL laugh.at-NFUT.2PL>1SG  
 'Why did you (plural) laugh at me?'

(49) Ergative with 3rd person objects

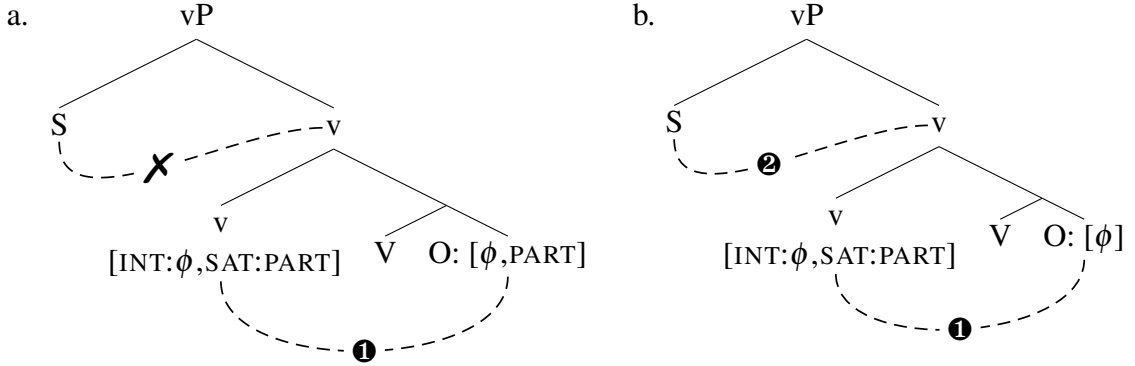
- a. 1PL.EXCL→3PL (Valenzuela 2011: 100)  
 Kuda=**ler** aperku-tu-dek-llidek pu'yek.  
 1PL.EXCL=ERG not.share-VAL-3PL.O-1PL.EXCL>3PL fishing  
 'We (exclusive) did not share the fishing with them.'
- b. 3SG→3SG (Valenzuela 2011: 105)  
 Kishu(=**ler**) ka'-lli nana isha.  
 Jesús=ERG eat-NFUT.3SG that paujil  
 'Jesús ate the paujil (a species of curassow).'

In (48), both arguments are local persons and there is no ergative marking on the subject. In fact, Valenzuela (2011: 109) notes that adding the ergative =*ler* in these examples would result in ungrammaticality. While the lack of ergative in the 2→1 configuration in (48b) mirrors what we saw in Shawi, the lack of ergative in the 1→2 configuration in (48a) represents a difference between the two languages. In Shiwilu, the subject outranking the object is insufficient to result in ergative marking; instead, a local person object precludes ergative marking altogether, regardless of the person of the subject. Only with 3rd person objects, as in (49), is ergative case marking possible.<sup>31</sup>

Following Deal's (To appear b) analysis of the strong PCC, we assume for Shiwilu that the probe is satisfied by the feature [PART]. When *v* probes its c-command domain and encounters a local person argument ([PART]), it is satisfied and is thus unable to Agree with the external argument, resulting in the impossibility of ergative case, (50a). If, on the other hand, the object is 3rd person, lacking [PART], the probe on *v* will be able to successfully Agree with both arguments, (50b). As in Shawi, the ergative case marker in Shiwilu spells out the object's  $\phi$ -features on the subject, transferred via *v*.

<sup>31</sup> As in Shawi, a number of factors, including word order, influence whether ergative is attested on the subject when the object is 3rd person. We refer the reader to Valenzuela 2011 for a discussion of the relevant factors in Shiwilu, but we assume for the current purposes that "optionality" in ergative marking reflects two possible structures for 3rd person objects, following the assumptions we made for Shawi.

(50) Ergative, strong PCC:  $v$  satisfied by [PART]



The type of strong PCC pattern observed in Shiwilu can also be found in the accusative-aligned language Yurok (Algic; USA). In Yurok, singular local person objects appear in an accusative form when the subject is 3rd person (Robins 1958: 21, Garrett 2014: 32-33). Note that this is the reverse of the pattern for Shiwilu, in the following way: in Shiwilu, the dependent case (ergative) appears on the *subject* only when the *object* is 3rd person. In Yurok, the dependent case (accusative) appears on the *object* only when the *subject* is 3rd person. On our theory, the “directionality” of the hierarchy pattern and the location of the dependent case are correlated. The dependent case appears on G2, and in a strong PCC pattern, G2 will Agree only when G1 is 3rd person. The Yurok pattern, then, can be captured via the same probe specification as we assumed for Shiwilu: [INT:φ, SAT:PART]. The difference will be that this probe will be located high on T so that it will encounter the subject first. If the subject is 3rd person (no [PART]), the probe will be able to continue to probe past it and Agree with the object, resulting in accusative case marking on this second goal. The difference between Shiwilu and Yurok is schematized in (51).<sup>32</sup>

(51) Two strong PCC-type global case splits: Shiwilu vs. Yurok

- a. Shiwilu: ergative case, “forward” PCC
  - i. Object is G1, subject is G2
  - ii. Subject (=G2) gets dependent case only when object (=G1) is 3rd person
  - iii. Analysis: the probe is low and Agrees with the object first
- b. Yurok: accusative case, “reverse” PCC
  - i. Subject is G1, object is G2
  - ii. Object (=G2) gets dependent case only when subject (=G1) is 3rd person
  - iii. Analysis: the probe is high and Agrees with the subject first

In a weak PCC pattern, agreement with two goals requires that if either of the goals is 3rd person, G1 must be 3rd person. (Alternatively: either both must be local person, or G1 must be

<sup>32</sup>The label “reverse” PCC is borrowed from Stegovec (2020), who focuses on ditransitives. In a classic “forward” strong PCC pattern in ditransitives, the DO must be 3rd person. In the reverse strong PCC pattern discussed by Stegovec, the IO must be 3rd person. In connecting these patterns to the subject/object case splits under discussion here, we analogize subjects to IO and objects to DO. Thus the Shiwilu pattern where the object must be 3rd person is akin to forward PCC, whereas the Yurok pattern is akin to reverse PCC.

3rd person.) Kolyma Yukaghir (Yukaghir family; Russia) shows a global case split of this type.<sup>33</sup> For the relevant patterns, we draw on the discussion in B  r  ny 2017 with data taken from Maslova 2003. Kolyma Yukaghir displays accusative alignment with a number of different forms of the accusative marker, conditioned by the person of both the subject and the object. When the subject is 3rd person, the form of the accusative marker is *-gele*, regardless of the person of the object.<sup>34</sup> When both subject and object are local person, the form of the accusative marker is *-ul*. Finally, when the subject is a local person and the object is 3rd person, there is no accusative marking. This distribution of forms is illustrated in (52).

- (52) a. 3SG→1SG (Maslova 2003: 93)  
tet kimn   met-**kele** kudede-m.  
your whip me-ACC kill-TR.3SG  
‘Your whip has killed me.’
- b. 1SG→2SG (Maslova 2003: 95)  
met tet-**ul** kudede-t  
I you-ACC kill-FUT(TR.1SG)  
‘I will kill you.’
- c. 1SG→3SG (Maslova 2003: 89)  
met m  m   i  .  
I bear be.afraid(TR.1SG)  
‘I am afraid of the bear.’

Setting aside for a moment the form of the accusative marking and considering only its presence vs. absence, we see the weak PCC pattern: when the subject is a local person, the object must also be a local person to receive accusative case marking. Under our approach to accusative case marking, this means that when T Agrees with a local person subject, it is subsequently restricted to Agreeing only with local person objects. Following Deal (To appear b), the modeling of this type of pattern brings together the ingredients of the strictly descending pattern (Shawi) and the dependent case pattern without a hierarchy effect (e.g. Sakha). The probe itself is insatiable, as in Sakha. The person restriction comes from the same type of dynamic interaction of the feature [PART] that figured into our analysis of the strictly descending pattern of Shawi.

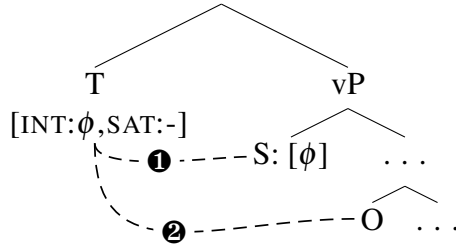
To illustrate, let us first consider the situation with 3rd person subjects, as with the 3→1 configuration in (52a). T will begin with the interaction condition  $\phi$  and will first Agree with the 3rd person subject. Since this goal does not bear the feature [PART], the interaction condition of T will not change and it will be able to Agree with the object, regardless of the person of the object. This results in accusative case marking on all objects in the presence of a 3rd person subject.

<sup>33</sup>A similar situation also holds in the Jivaroan language Wampis (Pe  a 2015), as discussed by B  r  ny and Sheehan (To appear). The connection of this language to the weak PCC pattern is somewhat obscured by the fact that 1st person singular subjects behave exceptionally. We note that number-based exceptions or complications to person-hierarchy patterns are also attested elsewhere, e.g. in ditransitives in Romanian and Italian (D’Alessandro and Pescarini 2016), though they remain ill-understood. Further understanding of these patterns is likely to cast light on the Wampis data as well.

<sup>34</sup>To simplify the discussion we set aside here the case marker *-le* that is found on indefinite 3rd person objects when the subject is 3rd person. The *-gele/-le* alternation in 3→3 contexts could be easily modeled by assuming context sensitivity to a definiteness feature on the object.

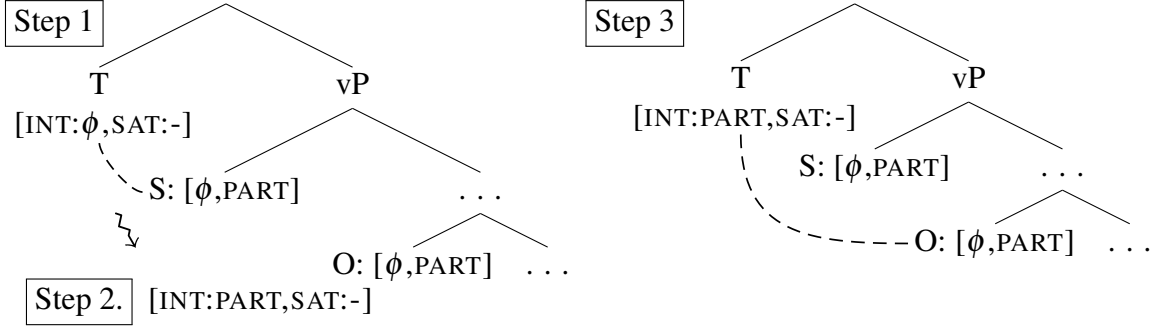


- (53) All objects Agree when the subject is 3rd person



Moving now to a configuration where the subject is a local person, the situation will be different. The local person subject bears the feature [PART], which will cause the interaction condition of T to be updated to [PART], Step 2 in (54). If the object is also a local person, as with the 1→2 configuration in (52b), T will be able to Agree with the object since it bears the feature [PART]. Thus (54) continues to Step 3. This derivation will result in accusative case marking on local person objects in the presence of local person subjects.

- (54) Local person objects Agree when the subject is local person



However, if after interacting with a local person subject, T then encounters a 3rd person object, as in the 1→3 configuration in (52c), it will be unable to interact with the object. This is because of Step 2 in (54), dynamic interaction with [PART]: after Agreeing with a local person subject, T loses the ability to Agree with elements that lack [PART]. Because 3rd person objects in the presence of local person subjects cannot serve as the second goal for Agree with T, they cannot be marked with accusative case.

Our exposition thus far covers where accusative does and does not appear on objects in Kolyma Yukaghir. Recall, though, that the actual form of the accusative marker varies both with object features *and with subject features*—that is, Kolyma Yukaghir shows a kind of SAgr-on-O. Just as we saw with OAgr-on-S morphology in Shawi, the accusative morphology in Kolyma Yukaghir is sensitive not only to the presence of  $\phi$ -features from a previous goal transferred from the agreement probe (in this case T) but also to the identity of these features. Specifically, *-ul* indicates that T Agreed with a local person subject prior to Agreeing with the object, while *-gele* can be modeled as a more general form that indicates simply that T simply passed along the feature  $\phi$  from a previous goal, as illustrated in (55).

- (55) Kolyma Yukaghir accusative case vocabulary items (selected)

- a. *ul* ↔ [ $\phi$ , PART] / - [ $\phi$ , D]
- b. *gele* ↔  $\phi$  / - [ $\phi$ , D]

In addition to the OAgr-on-S pattern on Shawi, this pattern resembles the distribution of ergative in Sahaptin. As discussed at the end of Section 3, the form of the ergative case marker in Sahaptin varies according to object  $\phi$ -features, and Deal (2010) has proposed that ergative case morphemes in Sahaptin spell out particular  $\phi$ -values transferred to the subject from the object. On the analysis just sketched, Kolyma Yukaghir shows the exact same phenomenon but in an accusative system. This confirms that the transitive pattern of transfer of features from G1 to a probe and then from that probe to G2 can function in the same way irrespective of the relative structural position of G1 and G2 in the clause. In an ergative system, the probe is low, and G2 is the subject. In an accusative system, the probe is high, and G2 is the object. In both cases, what is built in the syntax is a feature structure suitable both for the realization of “dependent” morphological case and for the realization of G1’s features on G2.

To conclude this section, we have shown that our system extends naturally from Shawi to several additional types of dependent case setups. This includes both ergative and accusative type languages, languages with and without global case splits, and languages with global case splits of varying types. In general, our theory leads to two expectations for the typology of global case splits. First, as noted above, we expect a correlation between the “direction” of the hierarchy effect and the locus of dependent case. A low probe Agrees with the object first, potentially leading to dependent ergative on the subject. Hierarchy effects arise because the object’s features can bleed further Agree. A high probe Agrees with the subject first, potentially leading to dependent accusative on the object. Hierarchy effects arise because the *subject*’s features can bleed further Agree. Thus we expect to see, alongside the Shawi-type pattern with ergative case assigned only when the subject is at least as high as the object on the person hierarchy, a language where accusative case is assigned only when the object is at least as high as the subject on the person hierarchy. This is the pattern in Kashmiri.<sup>35 36</sup>

Second, in terms of the typology of possible hierarchy effects, we expect that the possibility of dependent case should in general track the range of possibilities for one-probe-many-goal Agree attested elsewhere in language. The literature on PCC in ditransitives, where such patterns have been studied most extensively, leads us to expect an overall picture where strong, weak, and strictly descending hierarchy effects are all relatively common and attested, along with a pattern in which both goals Agree regardless of their features. Indeed, despite the relatively meager attention paid to global case splits in the previous literature, we are aware of examples of 7 out of these 8 predicted language types attested thus far; we suggest that the absence of a weak PCC-type global case split in an ergative language in our data set is an accidental gap.

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<sup>35</sup>In Kashmiri, objects are marked with a special case (called ‘dative’ in the literature) when the object is at least as high as the subject on the hierarchy 1>2>3 (Wali and Koul 1997, Béjar and Rezac 2009, Bány 2017, Bány and Sheehan To appear). This type of pattern can be captured in a similar way to the Shawi pattern, with dynamic interaction of [PART] and a probe with the specification [SAT:SPKR]—the probe would simply be located on T to derive the accusative alignment.

<sup>36</sup>A few languages—notably Fore and Dalabon—have been reported in the literature as potential counterexamples to the generalization we note here, e.g. as having ergative marked on the subject when the object is higher on the person hierarchy. As remarked in footnote 26, we are doubtful of this type of characterization for these languages, which have played a central role in previous theoretical work on the typology of global case splits.

(56) Hierarchy type and case type

	Ergative	Accusative
Both Agree, no PCC	Amahuaca	Sakha
Strong PCC	Shiwilu, Yimas	Yurok
Weak PCC		Kolyma Yukaghir, Wampis
Strictly descending PCC	Shawi	Kashmiri

We also expect that several additional, less common types of patterns may ultimately be brought into a full typology of dependent case and global case splits. First, we might ultimately expect to find global case splits that reflect quite rare but attested person-based patterns such as ‘me first’ (Nevins 2007) and ‘A-descending’ (i.e.  $2 > 1 > 3$ ; Deal To appear b). Second, features other than person *sensu stricto* may be involved in global case splits (see Ormazabal and Romero 2007, Foley and Toosarvandani 2022). This appears to be the case in Awtuw (Sepik, Papua New Guinea), where animacy matters for a global accusative case split (see de Hoop and Malchukov 2008, Bárány 2017).

## 6 Conclusion

In this paper we have proposed an approach to modeling the dependent nature of ergative and accusative case under an Agree-based case theory rather than via configurational case rules. Our analysis is rooted in the idea that feature transmission under Agree is transitive—that is, a head transmits features from one goal to a subsequent goal in the process of goal flagging. Under this approach, both ergative and accusative morphological cases can be treated as exposing features from another argument in the clause received as part of a goal-flag from a functional head. It is in this way that these “dependent” cases reflect the presence of another nominal in the clause. The difference between ergative and accusative case simply lies in the location of the probe relative to the arguments it Agrees with. Ergative case results from a probe on a head that Agrees with the object first (here, and perhaps generally,  $\nu$ ); the subject will be the second goal for Agree. Accusative case results from a probe that Agrees with the subject first (here, and perhaps generally, T); the object will be the second goal for Agree.

Adopting an Agree-based view of case dependency provides a straightforward way of modeling case patterns that display connections to agreement, such as global case splits and inflectional patterns like Shawi OAgr-on-S. We have argued that the types of person hierarchy effects found in global case splits mirror the typology of hierarchy effects found elsewhere in agreement. We have discussed examples of global case splits following the three most common of the person hierarchy patterns discussed for PCC by Nevins (2007): strong (Shiwilu, Yurok), weak (Kolyma Yukaghir), and strictly descending (Shawi). An Agree-based case theory easily accounts for these patterns under the same assumptions about probes and goals needed to model agreement hierarchies outside of case. Further, the transitive feature transmission at the core of our analysis of case dependency predicts that the form of morphology on one argument should be able to be sensitive to the features of another argument, as we find with Shawi OAgr-on-S as well as Kolyma Yukaghir and Sahaptin case morphology. Simple dependent case patterns as well as these more complicated patterns all fall out from an Agree-based case theory on the simple assumption that the bidirectional feature exchange commonly assumed to underlie Agree is, in fact, transitive.

Debates in the literature on case theory have questioned whether multiple modalities of case assignment are necessary, with some proposing that both Agree-based case and configurational case co-exist (Baker and Vinokurova 2010, Baker 2015) and others proposing that only a configurational approach to structural case is necessary (Levin and Preminger 2015). Ours is a third perspective in this option space. As we have demonstrated, case dependency can be modeled via Agree, and more complicated patterns such as global case splits are easily analyzed under an Agree-based approach without the kinds of stipulations that would be necessary under a configurational case theory. Therefore, we suggest that only one modality of case assignment is actually necessary, but that the core mechanism underlying case assignment is Agree.

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