

Case and agreement alignment in ditransitive constructions*

A typological gap and its explanation

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I describe a typological gap in case and agreement alignment in ditransitive constructions. In languages in which verbal agreement is controlled by the subject and at most one object, object case and agreement in ditransitive constructions do not exhibit all logically possible combinations of alignment. I show that this typological gap follows from assumptions about the structure of ditransitive constructions (recipients c-command themes) and the interaction of morphological case and agreement (case-marking restricts agreement). These assumptions derive exactly and only the attested patterns of alignment. I also argue that the typological gap in ditransitive constructions has a parallel in transitive constructions, providing further support for the proposals made here.

1 INTRODUCTION Just like intransitive and transitive clauses are characterised as (among others) neutral, nominative–accusative, or ergative–absolutive based on their case-marking and agreement patterns, (mono)transitive and ditransitive clauses can be characterised as showing NEUTRAL, INDIRECTIVE, or SECUNDATIVE alignment (using the terminology of Haspelmath 2005, Malchukov and colleagues 2010a).

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As Figure 1 shows, these terms refer to particular groupings of arguments, where the label *P* (mnemonic for *PATIENT*) refers to the single object of a monotransitive construction, *R* refers to the *RECIPIENT* argument of a ditransitive construction, and *T* refers to the *THEME* argument of a ditransitive construction. Both (morphological) case-marking and agreement with the verb can underlie a particular grouping.

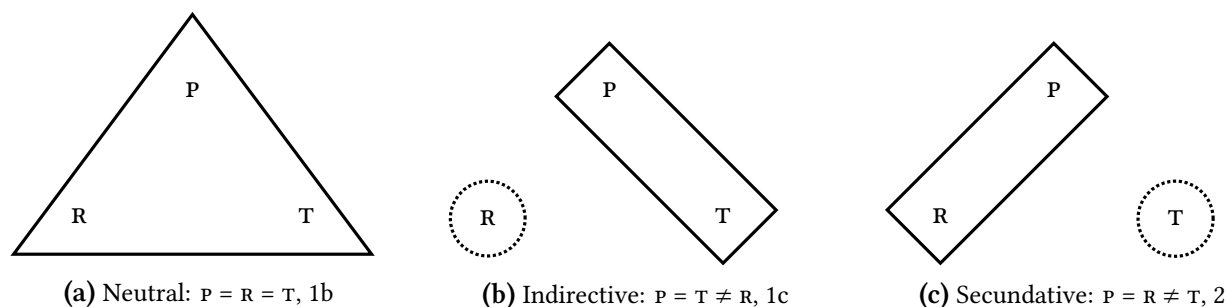


Figure 1 Ditransitive alignment types (following Haspelmath 2005, Malchukov and colleagues 2010a)

The following examples illustrate the alignment types shown in Figure 1. Although English does not show much case-marking, various case alignment types can be illustrated using this language for ease of exposition (see Section 2 for cross-linguistic data). Consider the well-known English ‘dative alternation’, which can be characterised as alternating between neutral and indirective case alignment, as shown in 1.

(1) English

- a. Monotransitive
You kissed [_P Mary].
- b. Ditransitive, neutral alignment
You gave [_R Mary] [_T a bicycle].
- c. Ditransitive, indirective alignment
You gave [_T a bicycle] [_R to Mary].

In the so-called double object construction (DOC) in 1b, the *R* and *T* arguments are expressed in the same way as the single object of a monotransitive (see 1a for *Mary*). In contrast, in the prepositional dative construction (PDC) in 1c, the *T* argument is expressed as an object while the *R* argument appears as a PP with the preposition *to*.

Haspelmath (2005) calls the pattern in 1b neutral alignment (as *R* and *T* are not distinguished from each other and *P*) and the pattern in 1c indirective alignment (*R* is expressed differently from *T* and *P*). In Dryer’s (1986) terminology, in indirective alignment, *T* and *P* are *DIRECT OBJECTS*, while *R* is an *INDIRECT OBJECT*.

Example 2 is an attempt to illustrate a ditransitive predicate with secundative alignment in English. Here, the recipient *R* is expressed like the single object of a monotransitive, *P*, while the theme *T* is expressed differently, as a PP (cf. 1). In secundative alignment, Dryer 1986 refers to *R* and *P* as PRIMARY OBJECTS, while *T* is a SECONDARY OBJECT.

(2) English ditransitive, secundative alignment

You equipped [_R Mary] [_T with a bicycle].

In addition to case-marking, AGREEMENT and CLITIC DOUBLING in ditransitive constructions also show different alignment patterns (throughout, I subsume both agreement and clitic doubling under ‘agreement alignment’; see Section 2.1 for discussion). In this paper, I focus on languages in which the arguments cross-referenced on the verb are the subject and one of the verb’s objects. In ditransitive constructions in such languages, either the *R* (secundative agreement alignment) or the *T* argument (indirective agreement alignment) will control agreement or be doubled by a clitic on the verb, although some languages also show variation in their agreement alignment. Throughout, what is relevant for identifying agreement alignment is which of the two objects is cross-referenced on the verb rather than the specific form of the marker (which sometimes varies for arguments with different case).

Variation in case and agreement alignment is further illustrated in 3 and 4 with examples from Kalaallisut (West Greenlandic). First, 3 shows a monotransitive clause with an object in absolutive case, cross-referenced on the verb with the suffix *-vaa* (together with the subject in the indicative).

(3) Kalaallisut (Fortescue 1984:210)

akkam-ma	[_P aataaq] aalaa-vaa
uncle-1SG.POSS.ERG	harp.seal.ABS	shoot-3SG.SBJ>3SG.OBJ.INDIC

‘My uncle shot the harp seal.’

Second, 4 shows two alternative ways of expressing ditransitive constructions in Kalaallisut. In 4a the *R* argument is expressed in absolutive (like the single object in 3, *P*) while the *T* argument appears in instrumental case. The absolutive recipient *Niisi* controls agreement (throughout, I will mark indexing of the *R* argument by underlining the controller and agreement morphology). Since *R* is expressed like *P* and both control agreement, while *T* gets distinct case-marking and does not control agreement, 4a shows secundative case alignment as well as secundative agreement alignment.

In contrast, in 4b, the *T* argument *aningaasa-t* ‘money-PL’ is absolutive and controls agreement while *R* is expressed in allative case (indexing of *T* arguments is marked by bold-faced controllers and agreement morphology).

(4) Kalaallisut (Fortescue 1984:88, 89)

- a. Secundative case and agreement alignment (agreement with ABS R)

[_R Niisi] [_T aningaasa-nik] tuni-vaa
 Niisi money-INS.PL give-3SG.SBJ>3SG.OBJ.INDIC
 ‘He gave money to Niisi.’

- b. Indirective case and agreement alignment (agreement with ABS T)

[_T **aningaasa-t**] [_R Niisi-mut] tunni-up-**pai**
 money-PL Niisi-ALL give-APPL-3SG.SBJ>3PL.OBJ.INDIC
 ‘He gave **the money** to Niisi.’

In 4, case and agreement alignment alternate together: it is always the ABS object that controls agreement, be it R or T, not an INS or ALL argument. Case and agreement alignment can differ, however. Amharic, for example, allows both ACC and DAT objects to be cross-referenced by doubling clitics, as shown in the following examples. 5 serves as a baseline, showing that the single ACC of a monotransitive can be cross-referenced by the clitic *-at*.

The examples in 6 show that the alignment alternation in Amharic differs from that in Kalaallisut. The marker on the verb refers to R in a ditransitive, whether it is dative or accusative. This means that case and agreement alignment can diverge: in 6a, showing indirective case, the recipient is marked with DAT while the theme is ACC (like the single object of a monotransitive). In 6b, showing neutral alignment, both objects are ACC. The clitic, again, cross-references the recipient.

(5) Amharic (Amberber 2005:305)

səw-iyyəw [_P aster-in] sam-(at)
 man-DEF Aster-ACC kiss.PRF.3.M.SBJ-3.F.OBJ
 ‘The man kissed Aster.’

(6) Amharic (Baker 2012:261, 258)

- a. Indirective case and secundative agreement (agreement with DAT R)

Ləmma [_R l-Almaz] [_T tarik-u-n] nəggər-at.
 Lemma.M DAT-Almaz.F story.M-DEF-ACC tell.3.M.SBJ-3.F.OBJ
 ‘Lemma told Almaz the story.’

b. Neutral case and secundative agreement (agreement with ACC R)

Ləmma [R Aster-in] [T his'an-u-n] asaj-at.
 Lemma.M Aster.F-ACC baby-DEF-ACC show.3.M.SBJ-3.F.OBJ
 'Lemma showed Aster the baby.'

These data show that in addition to combining indirective case and agreement (special case-marking of R and agreement with T) and secundative case and agreement (regular 'object' case-marking of R and agreement with R), indirective and neutral case alignment can occur with secundative agreement alignment.

The main empirical claim of this paper is that no language exclusively shows the remaining logically possible combination of case and agreement alignment in ditransitives: no language allows object agreement with only theme arguments in ditransitive constructions unless the recipient bears a distinct case, for example dative.

In more technical terms, no language in which the verb agrees with the subject and one object shows secundative (or neutral) case alignment and indirective agreement ONLY (that type may appear as an alternative, Section 4). This pattern constitutes a TYPOLGICAL GAP, described in 7 and Table 1. The basis of this observation is a sample of 124 spoken languages from 97 genera from all macroareas (Section 2.1). All of these languages show subject and object agreement with one object in monotransitives and ditransitives.

(7) *A typological gap in ditransitive case and agreement alignment*

In languages in which the subject and one object are agreement controllers, secundative or neutral case alignment is never exclusively combined with indirective agreement alignment.

	Indirective case	Secundative (or neutral) case
Secundative agreement	e.g. Amharic, 6a	e.g. Kalaallisut, 4a, Amharic, 6b
Indirective agreement	e.g. Kalaallisut, 4b	—

Table 1 Attested and unattested combinations of case and agreement alignment

A version of the generalisation in 7 was, as far as I can tell, first proposed explicitly by Bárány (2015, 2017) and developed in Bárány (2021a). Faltz (1978), Dryer (1986), and Haspelmath (2005) and in particular Baker (2018) also discuss restrictions on ditransitive alignment but do not reach the same overall conclusion. The present paper expands on all of these works in empirical coverage, by providing an explicit theoretical account of the typological gap, and by relating the typological gap to another well-known generalisation about case and agreement alignment.

According to this observation by Moravcsik (1978b) and Bobaljik (2008), among others, not all logically possible combinations of case and agreement alignment in intransitive and monotransitive clauses are actually attested. Specifically, Moravcsik (1978b:259) notes that there are no languages with nominative–accusative case alignment but ergative–absolutive agreement alignment, while languages with NOM–ACC case and agreement alignment, ERG–ACC case and agreement alignment, and ERG–ACC case but NOM–ACC agreement alignment exist. The principles underlying Bobaljik’s (2008) analysis of this typological gap inform the explanation of why case and agreement alignment in ditransitives is distributed as shown in Table 1 (see Section 3), providing evidence that both gaps reflect independent properties of clause structure, case, and agreement rather than specific properties of subjects vs. objects or particular cases such as ergative and accusative. The main theoretical contribution of this paper is an explanation of the typological gap in ditransitive constructions. As I show in detail in Section 3, exactly and only the gap shown in Table 1 follows from independently motivated assumptions about locality, the structure of ditransitive constructions and the interaction of (morphological) case and agreement. The first assumption concerns the locality of the agreeing verbal head and the agreement controllers: following Harley (2002), Anagnostopoulou (2003), Pylkkänen (2008), Bruening (2010), and Georgala (2012), among others, I assume that the head realising object agreement (*v* or Voice) c-commands both the recipient and the theme in a ditransitive construction. Second, following the same authors, I will assume that in DOCs, the recipient is more prominent than the theme. In the analysis presented in Section 3, prominence will be interpreted structurally, as c-command, but other interpretations could be possible, such as precedence on an argument structure list or a hierarchy of grammatical functions. Crucially, my sample includes only languages in which the recipient argument is clearly not expressed as a PP (as in the PDC). This is because PPs are generally assumed not to control agreement; if the recipient is expressed as a PP, it is therefore not a viable agreement controller anyway (see Section 3 for further discussion). This distinction is not always easy to draw, however. Amharic is a case in point, where the marker *l(ä)* is glossed as DAT by Baker (2012) and Kramer (2014) and discussed as a marker of indirect objects by Leslau (1995), while the same form is also used and analysed as a preposition (see e.g. Leslau 1995:601–2). In this case, the fact that recipients marked with *l(ä)* can control agreement made me include Amharic. In contrast, a language such as Hixkaryana (Carib; Derbyshire 1979, Kalin 2014), which does not show any case-marking on subjects and objects, but marks recipients with a postposition, is not included in the sample. In general, in the absence of evidence that recipients behave like object arguments, I did not include languages where the distinction between case and adpositional marking on recipients was not clear.

Finally, building on typological and theoretical work (e.g. Moravcsik 1978a, Blake 2001, Bobaljik 2008, Caha 2009, Harðarson 2016, Zompì 2019, Bárány 2021b), I will assume that (morphological)

cases can be ordered on a hierarchy, which restricts agreement in a particular way. If a language allows agreement with arguments bearing a certain morphological case on the hierarchy, it will also allow arguments bearing cases higher on the hierarchy (see Section 3 for details). For example, if a language allows agreement with accusative arguments, it will also allow agreement with nominative arguments (Moravcsik 1978a), but not necessarily vice versa.

From these assumptions, the typological gap follows. If the recipient is closer to the agreeing head than the theme, in languages with object agreement, an agreement relation with the recipient must be possible in secundative or neutral case alignment. This is because in both of these alignment types, the recipient's case must be the same as that of the single object of a monotransitive. Locality, that is closest c-command, predicts agreement with the theme, past the recipient, to be impossible (see Section 4). Thus, for secundative or neutral case alignment, secundative agreement alignment (with \mathbf{R}) must be available and indirective agreement alignment (with \mathbf{T}) should not be. This is the gap shown in Table 1.

In indirective case alignment, the recipient's case is by definition different from that of the theme and the single object of monotransitives, for example dative (\mathbf{DAT} , in Amharic) or allative (\mathbf{ALL} , in Kalaallisut). Whether agreement is secundative (with \mathbf{R}) or indirective (with \mathbf{T}) then depends not just on locality, but also on whether a certain morphological case is accessible for agreement. As the examples in 6 show, dative arguments are accessible for agreement in Amharic. In Kalaallisut, allative arguments are not – therefore Amharic shows indirective case and secundative alignment as one of its patterns, while in Kalaallisut, indirective case necessarily goes together with indirective agreement.

Locality, the structure of ditransitives, and the interaction of case and agreement therefore derive the three attested patterns shown in Table 1 while ruling out the one unattested pattern, the typological gap. In the remainder of this paper, I will provide the empirical basis for the typological gap and discuss the proposed analysis in more detail, including apparent but, as I will argue, not actual counterexamples.

The paper is structured as follows. In Section 2, I discuss the data underlying the typological gap and I describe the sample of 124 languages which forms the basis for the generalisation in 7. In Section 3, I develop the analysis explaining the typological gap in detail. I address alignment alternations (similar in principle to the English dative alternation) in Section 4 and argue that while such alternations introduce further variation, they can be incorporated into the analysis naturally.

2 DATA In this section, I will first discuss my sample of languages and the criteria for inclusion (Section 2.1) before illustrating case and agreement alignment types in more detail (Section 2.2).

2.1 THE SAMPLE The sample of languages underlying the data discussed in this paper consists of 124 spoken languages from 97 genera and 70 families. A list of languages with their alignment types and the sources I consulted is provided in Appendix A. A map of all languages, classified by genera, is shown in Figure 2. The languages in the sample were chosen with typological and areal balance in mind but the selection and the ultimate number reflect the availability of data to some degree. The full data set is available as Bárány and Classe 2022.

I use the term **AGREEMENT** to refer to doubling indexing of arguments on the predicate. With many others, for example Béjar and Rezac 2003, Kramer 2014, Baker and Kramer 2018, Roberts 2010, van der Wal 2022, Paparounas and Salzmann 2023a,b, I assume that both agreement and clitic doubling are the consequence of Agree relations established in syntax. Thus, even if the morphophonological properties of agreement markers and doubling clitics vary, I will hypothesise that both are the outcome of a syntactic operation, Agree, subject to locality in the same way. Independently of whether they are agreement markers or doubling clitics, verbal markers in the languages in the sample can co-occur with the arguments they index (‘conominals’ in Haspelmath 2013). I take this to indicate that the agreement markers or clitics do not represent the arguments of the verb but cross-reference them. Languages in which co-occurrence of the agreement marker or clitic and the argument they index is impossible or for which I have not been able to verify doubling are not included in the sample. For at least one language in the sample, this has been a subject of some controversy, namely for the Bantu language Zulu (see e.g. Adams 2010, Buell 2005, Cheng and Downing 2009, Halpert 2012, Zeller 2012, 2015). In Zulu, like in some other Bantu languages (e.g. Chichewa, Bresnan and Mchombo 1987), the object cross-referenced on the verb cannot appear in the same phrase (the VP; see Buell 2005, Cheng and Downing 2009, Halpert 2012, Zeller 2012, 2015 for discussion). Cheng and Downing 2009, Zeller 2012 thus argue that objects cross-referenced on the verb right-adjoin to *vP* (see Zeller 2015 for a modification). While this means that objects and object markers cannot co-occur in a local domain, a possible analysis is that exactly those objects that trigger object markers dislocate out of the VP. Zeller 2012 proposes an analysis along these lines and suggests that Zulu object markers are on the way of becoming agreement markers; in Zeller 2015, he also treats object marking in Zulu as agreement. I believe this justifies the inclusion of Zulu in the sample. For further detailed discussion of object marking as agreement in Bantu see van der Wal 2022. Each language in the sample has doubling agreement of the type just described with two arguments: the subject and one object. I will refer to this type of agreement with one object as ‘one instance of object agreement’ (in the rest of this paper, I will refer to clitics where relevant but generally use the term ‘agreement’). I have also included languages in which agreement is **DIFFERENTIAL**, that is, agreement is not realised in every (di)transitive clause but can be sensitive to particular properties (see e.g. Dalrymple and Nikolaeva 2011, Kalin and van Urk 2015, Kalin 2018, Bárány

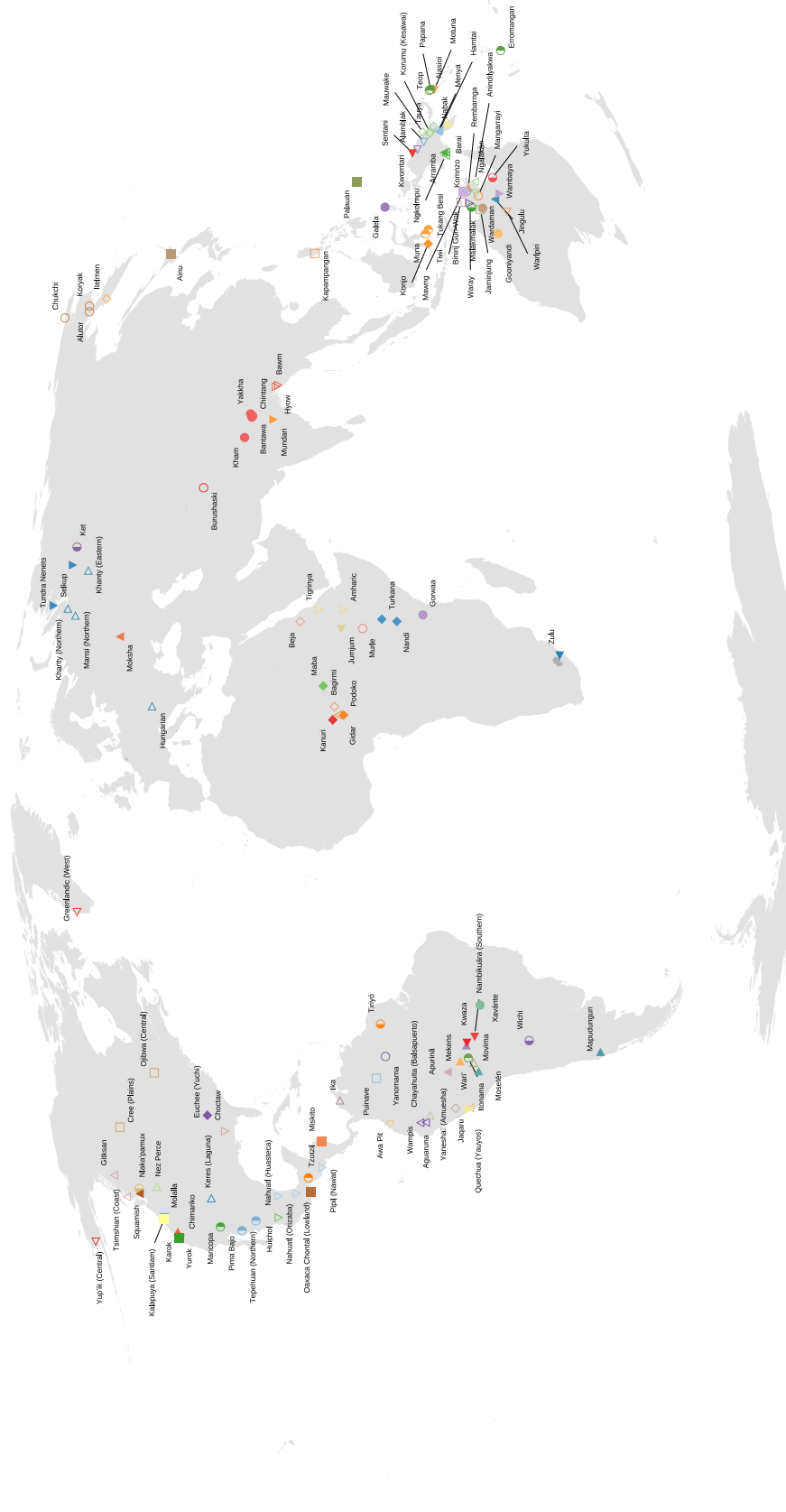
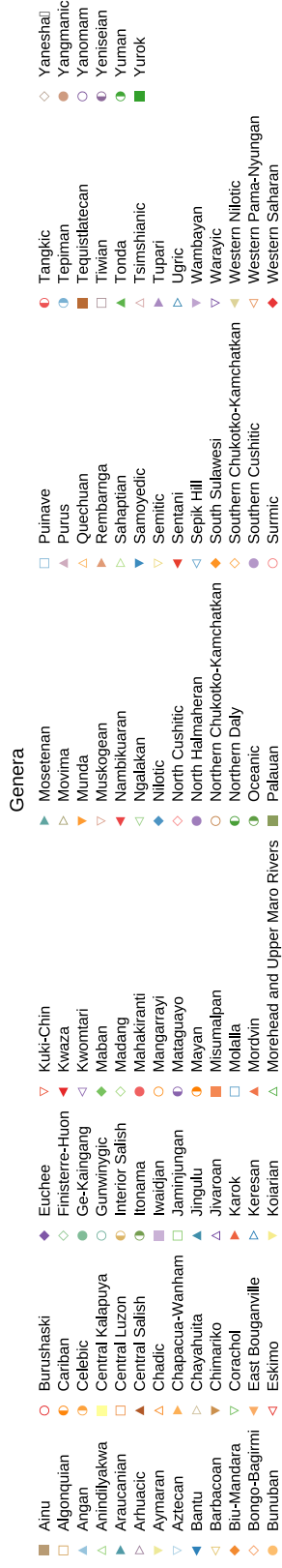


Figure 2 Map of the 124 languages in the sample with each unique genus marked by a unique combination of colour and shape (created using the R package ggmap, Kahle and Wickham 2013)

2017, Bárány and Kalin 2020). The sample features languages in which agreement is realised through CUMULATIVE (as in Kalaallisut 3, 4) or SEPARATIVE (as in Amharic 5, 6) exponence (Bickel and Nichols 2007). In Kalaallisut, subject and object agreement can be expressed by a single marker in certain moods and person combinations, while in Amharic, objects are indexed separately from the subject. This distinction does not appear to affect alignment patterns.

I have excluded languages from the sample in which the verb can agree with both objects in a ditransitive (for example Basque, Hualde and Ortiz de Urbina 2003). This decision is motivated by the aim to study in particular the ‘competition’ of the two objects as agreement controllers. In languages in which the verb can agree with both objects, this is not as clear.

Among languages that show subject agreement and one instance of object agreement, languages which lack ditransitive constructions are not included in the sample. Examples include Emerillon (Tupí-Guaraní, Rose 2008) and Lavukaleve (Papuan, Terrill 2003).

Many languages in the sample have verbs expressing TRANSFER-OF-POSSESSION corresponding to English *give*. This predicate features in much of the data, but other ditransitive predicates are included as well (see Malchukov and colleagues 2010a:§5 for discussion of lexical variation in ditransitives; see van der Wal 2022 for discussion of agreement patterns in valency-increasing operations such as causatives and applicatives in Bantu languages in terms compatible with the present proposal).

In the following section, I present representative examples of alignment types from languages in my sample.

2.2 ALIGNMENT TYPES As mentioned in Section 1, several combinations of case and agreement alignment types are attested. Indirective case and agreement alignment as well as secundative case and agreement alignment occur together, while among mixed alignment types indirective and neutral case alignment co-occur with secundative agreement. Table 2 shows the numbers of languages exhibiting each alignment type in the sample. Two notes are in order here: first, languages exhibiting alignment alternations are only represented once in Table 2, that is, I have chosen one alignment type as their main type. For example, 12 languages with indirective case and secundative agreement, as well as 9 languages with secundative case and agreement alternate with indirective case and agreement in some scenarios (see Section 4 for discussion). Among languages with indirective case, there are 13 non-alternating languages with secundative and 8 with indirective agreement alignment. One reason for this relatively low number could be the uncertainty of whether recipients are marked by dative or an adposition in a given language, in which case the language might not be included in the sample (see Section 1).

Table 2 thus shows that no language in the sample exclusively shows secundative or neutral case alignment and indirective agreement alignment (see again Section 4). Second, the numbers

appear somewhat skewed by combining secundative and neutral case alignment. In the sample, there are 33 languages with indirective case alignment, 23 languages with secundative case alignment, and 68 (the majority) with neutral case alignment. As mentioned in Section 1, combining secundative and neutral case alignment here is legitimate, since in both types, the recipient's case will be identical to that of the single object of a monotransitive (P).

	Indirective case	Secundative (or neutral) case
Secundative agreement	25	91
Indirective agreement	8	0

Table 2 Numbers of languages with attested and unattested combinations of case and agreement alignment in the sample of 124 languages

In this section, I will provide further examples of languages illustrating these alignment types (see also Dryer 1986, Haspelmath 2005 and the chapters in Malchukov and colleagues 2010b for further data and discussion).

2.3 INDIRECTIVE CASE AND INDIRECTIVE AGREEMENT ALIGNMENT The first example of a language with indirective case and indirective agreement alignment (ICIA; agreement with τ) comes from the Uralic language Hungarian, 8. In Hungarian, the finite verb show subject agreement and differential object agreement (DOA). Simplifying somewhat, definite direct objects trigger object agreement (see e.g. Bartos 1997, 1999, É. Kiss 2002, den Dikken 2006, Coppock and Wechsler 2010, Coppock 2013, 2022, Bárány 2017). Direct objects appear in accusative case, while indirect objects show dative case. Object agreement is only ever possible with accusative objects. As 8 shows, the single object of a monotransitive (P) is marked like the theme in a ditransitive (τ) and both control agreement. The recipient in the ditransitive (R) is marked differently and does not control agreement: the marker *-ja* on *adja* 's/he gives it' is not compatible with a second person object. As 8 also makes clear, the agreement marker and the object can co-occur.

(8) Hungarian (ICIA)

- a. Lát-ja [_P a kutyá-t].
 see-3SG.SBJ>3.OBJ the dog-ACC
 'S/he sees the dog.'
- b. [_R Neked] ad-ja [_T a kutyá-t].
 you.SG.DAT give-3SG.SBJ>3.OBJ the dog-ACC
 'S/he gives you **the dog**.'

Another language showing indirective case and agreement alignment is the isolate Puinave (Colombia; Girón 2008, Birchall 2014), among others (see Appendix A). The following examples illustrate transitive and ditransitive patterns in Puinave.

(9) Puinave (ICIA; Girón 2008:320, 351, 331, Birchall 2014:63, 62)

- a. *ja-bi-bý-k-at*
 3SG.OBJ-1PL.SBJ-bury-CMPL
 ‘We already buried him.’
- b. *ót ja-ka-búuk-ni* [_T *padatá*] [_R *býi-at*]
 3PL 3SG.OBJ-3PL.SBJ-give-REC.PST money 3SG.INDEF-OBL
 ‘They gave **the money** to another one.’
- c. *ka-ja-búu-denok* [_R *’ăn*]
 3PL.OBJ-3SG.SBJ-give-while 1SG.DAT
 ‘S/he lends them to me.’

In 9a,b,c, the agreement marker indexing the subject is expressed closer to the verb stem. The marker *ja-* refers to P in 9a (only expressed on the verb) and T in 9b, where the agreement marker is doubling the direct object *padatá* ‘money’ (see Girón 2008:218, 229 for further examples involving doubling agreement). The recipient, a pronoun, is marked with an ‘oblique’ or dative suffix (Girón 2008:357). In 9c, the third person plural T is dropped but is cross-referenced by the agreement marker *ka-*. The first person dative R does not control agreement. Note that it does not matter for indirective case-marking whether P and T are overtly case-marked (as in Hungarian) or not (as in Puinave), as long as R is marked differently.

2.4 SECUNDATIVE CASE AND SECUNDATIVE AGREEMENT ALIGNMENT Among languages that show secundative case and secundative agreement alignment (SCSA; agreement with R), several alternate with ICIA. An example from Kalaallisut was shown in 4 in Section 1. Other languages showing such alternations are the Uralic languages Khanty (F. Gulyás 2018, Nikolaeva 1999, 2001, Dalrymple and Nikolaeva 2011), Mansi (Bíró and Sipőcz 2017, Virtanen 2012), and Tundra Nenets (Nikolaeva 2014), as well as Tukang Besi (Austronesian; Donohue 1999:102–3).

The following examples illustrate further languages with SCSA. 10 shows a transitive and a ditransitive sentence from Nez Perce (also Niimiipuutímt; Sahaptian; see e.g. Rude 1986, Deal 2010, 2013, 2019). Nez Perce shows various patterns of case-marking in transitive clauses. In addition to sentences without morphological case on the subject and object and without agreement (‘caseless’ in Deal 2010:75), the language shows tripartite case-marking: transitive subjects are

marked with ergative case, objects of monotransitive clauses (P) and recipients in ditransitive clauses (R) are marked with objective case (or accusative for present purposes), and intransitive subjects as well as themes in ditransitives (T) are unmarked for case (Deal 2010). Apart from an intransitive subject, these are illustrated in 10. Since P and R (*nuun-e* and *lepit picaloo-na*, respectively) show objective (or accusative) case, case alignment is secundative (-e and -na are allomorphs conditioned by vowel harmony and the preceding segment). Agreement, like case, is secundative. In both 10a and 10b, the case-marked object controls agreement on the verb, indicated by the allomorphs of the plural object agreement marker *nees-* in 10a and *neec-* in 10b.

(10) Nez Perce (SCSA; Deal 2019:393)

- a. Angel-nim hi-nees-cewcew-téetu [P nuun-e].
 Angel-ERG 3.SBJ-OBJ.PL-call-HAB.PRS 1PL-OBJ
 ‘Angel calls us.’
- b. Beth-nim hi-neec-’ni-Ø-ye [R lepit picaloo-na] [T hipt].
 Beth-ERG 3.SBJ-OBJ.PL-give-PFV-REM.PST two kitten-OBJ food.NOM
 ‘Beth gave the two kittens food.’

Another language showing SCSA is Kham, a Sino-Tibetan Mahakiranti language (Watters 2002), illustrated in 11. Like in Nez Perce, the ditransitive theme T can be morphologically unmarked for case, while R is marked in the same way as P (see also Watters 2002:205, 206, 248–49, 333; the distinct form of the 1SG.OBJ marker in 11a,b appears to be a (morpho)phonological alternation).

(11) Kham (SCSA; Watters 1973:68, Dryer 1986:817)

- a. [P ŋa-lai] cyu:na-ke-o.
 1SG-OBJ watch-1SG.OBJ-PST-3SG.SBJ
 ‘He watched me.’
- b. [R ŋa-lai] bəhtanji y-ā-ke-o.
 1SG.OBJ potato give-1SG.OBJ-PST-3SG.SBJ
 ‘He gave me a potato.’

A final example of an SCSA language is Movima, an isolate spoken in Bolivia (Haude 2006). In Movima, core arguments are morphologically unmarked, while non-core arguments are marked as obliques by the prefix *n-* (Haude 2006:258). Subject agreement is mostly marked by enclitics for speech act participants (SAPs) apart from 1SG, which lacks a marker; enclitics can double

arguments (Haude 2006:269–74). While the person and number of objects is not expressed via clitics in the same way, Movima has *DIRECT* and *INVERSE* markers indicating the relative prominence of arguments on the hierarchy in 12.

(12) Movima person hierarchy (Haude 2006:276)

1SG > 1.INCL / 1.EXCL > 2SG > 2PL > 3.HUMAN > 3.NON-HUMAN

If the subject's person and number are higher on 12 than the object's, the verb is marked as *DIRECT* (DIR); if the object's person and number are higher than the subject's, the verb is marked as *INVERSE* (INV; see e.g. Zúñiga 2006, Béjar and Rezac 2009 for general discussion). This is shown in 13, where A is the label for a transitive subject (I'm glossing over 'internal' and 'external' cliticisation here and mark both using '='; see Haude 2006:55–56 for discussion).

(13) Movima (SCSA; Haude 2006:276)

- a. Direct, 1SG A > 3.HUMAN P

inla jema' ew-na=us
PRON.1SG.SBJ also grasp-DIR=M.ABSNT
'I held him, too.'

- b. Direct, 1SG A > 2SG R; SCSA

kay<a:>le [T n-i'ko] jayna
give<DIR> OBL-PRON.PL DSC
'I'll give them to you now.'

- c. Inverse, 2SG A > 1SG R; SCSA

ulkwañ [R i] kayle:-kay [T n-a'ko]
PRON.2SG 1 give-INV OBL-PRON.N
'You gave me this.'

The monotransitive example 13a shows direct alignment as the subject (A) is 1SG and the object (P) is a third person human. In ditransitives, what determines whether the verb shows direct or inverse marking is the person and number of the recipient argument (R), that is P and R are grouped together, to the exclusion of T. This is shown in 13b and 13c.

If T's person and number were relevant, 13c should be direct, like 13a. This is not the case, however: R is 1SG and thus triggers inverse alignment on the verb. Assuming that inverse and direct alignment reflect agreement (see e.g. Béjar and Rezac 2009), I take this to be evidence for secundative agreement alignment. As pointed out by a reviewer, even if this assumption

turned out to be false and the direct/inverse pattern in 13 reflected a kind of passive (cf. Haude 2006:276, 278), the locality conditions for both passive and agreement appear to match in 13, because R's features, rather than T's, provide the input for the direct/inverse alternation in ditransitives. Finally, in 13c, T is marked with the oblique prefix *n-* in contrast to morphologically unmarked P and R. Case-marking is thus also secundative and singles out T.

I now turn to two attested types of mixed alignment, both involving secundative agreement.

2.5 NEUTRAL CASE AND SECUNDATIVE AGREEMENT ALIGNMENT As mentioned in the context of Table 2, languages with neutral case alignment are the most frequent in my sample. In most of these, P, R and T are all morphologically unmarked, but as the Amharic examples 5 and 6b showed, neutral case alignment can also indicate that P, R and T are all morphologically case-marked identically. All languages with neutral case in the sample occur with secundative agreement, with a few showing alternations of various kinds (see Section 4).

Examples from Maricopa illustrate this pattern. Maricopa is a Hokan language from the Yuman genus (Gordon 1986). Verbs have pronominal prefixes indexing the subject's and one object's person and number. Free pronouns can be used in addition to these prefixes (Gordon 1986:21) and nouns can double agreement as well. Third person subject agreement as well as agreement with both third person subject and object is morphologically unmarked. The subject (S/A) is marked with the marked-nominative suffix *-sh* while both objects in a ditransitive are morphologically unmarked. While not providing negative evidence, Gordon (1986:42) writes that 'the verb agrees not with the semantic object, but with the semantic dative', that is object agreement is controlled by the recipient, not the theme.

The examples in 14 show that agreement can double arguments. In 14b, R and T are both morphologically unmarked. As all arguments are third person, the verb does not show any agreement. In 14c, in contrast, the prefix *m-* indicates agreement with a third person subject (*Pam-sh*) and a second person object — the recipient. The same prefix can be seen in 14a. R and P arguments thus control agreement (secundative agreement alignment) while there are no differences in case-marking (neutral case alignment).

(14) Maricopa (NCSA; Gordon 1986:37, 42)

- a. 'iipaa-ny-sh m-yuu-k
 man-DEM-NOM 3.SBJ>2.OBJ-see-REAL
 'The man saw you.'
- b. Heather-sh [_R Pam] [_T kwnho] aay-m
 Heather-NOM Pam basket give-REAL
 'Heather gave a basket to Pam.'

- c. Pam-sh [_T kwnho] m-aay-m
 Pam-NOM basket 3.SBJ>2.OBJ-give-REAL
 ‘Pam gave you the basket.’

2.6 INDIRECTIVE CASE AND SECUNDATIVE AGREEMENT The mixed type involving indirective case and secundative agreement was illustrated for Amharic in 6 in Section 1. In languages showing this alignment type, R is marked differently from P and T, usually with a case called dative. This is the same for languages with indirective case and indirective agreement discussed in Section 2.3, such as Hungarian or Puinave.

In languages with indirective case and secundative agreement, however, R’s case is accessible for agreement: a nominal with dative case can control agreement on the verb.

In Warlpiri, at least one class of verbs, including *yi-nyi* ‘give’, shows indirective case alignment (Legate 2002:170, Simpson 1991:24, Hale *et al.* 1995:1432). Legate (2002:171–75) further shows that the dative recipient does not behave like a prepositional phrase but like an object argument of the verb (see also Simpson and Bresnan 1983). For present purposes, its ability to control agreement is most relevant. Case and agreement alignment are shown in 15. Agreement in 15 is spelled out on an auxiliary in the second position; in both 15a,b, the markers index a first person subject and second person non-subject. In 15a, this non-subject is P, in 15b, it is R. Both of these control agreement, agreement alignment is thus secundative. Comparing the form of P and R, 15a shows the absolutive form *nyuntu* while 15b shows the dative form *nyuntu-ku* – the theme *karli-patu* ‘boomerang-PAUC’ is absolutive. Case alignment is thus indirective.

(15) Warlpiri (ICSA; Hale and colleagues 1995:1430, 1432)

- a. Ngajulu-rlu ka-rna-ngku [_P nyuntu] nya-nyi.
 I-ERG IPFV-1SG.SBJ-2SG.NON.SBJ you see-NON.PST
 ‘I see you.’
- b. Ngajulu-rlu kapi-rna-ngku [_T karli-patu] yi-nyi [_R
 I-ERG FUT.COMP-1SG.SBJ-2SG.NON.SBJ boomerang-PAUC give-NON.PST
nyuntu-ku].
 you-DAT
 ‘I will give you (the) (several) boomerangs.’

Legate 2002:172–73 shows that there is an alternative way of expressing ditransitives, too. In 16, the recipient is expressed in allative case. Allative DPs cannot control agreement, so in this case frame, the theme controls agreement instead of the recipient.

(16) Warlpiri (ICIA; Laughren 1985 via Legate 2002:173)

Yu-ngu-ju-lu [_R Jakamarra-kurra].
 give-PST-1SG.OBJ-3PL.SBJ Jakamarra-ALL
 ‘They gave **me** to Jakamarra.’

2.7 INTERIM SUMMARY In this section, I have shown examples of all the alignment types mentioned in Table 2 which appear as main alignment types in a given language. What is missing is a language that shows secundative or neutral case alignment but indirective agreement alignment: languages with only this alignment pattern are absent in my sample (Table 2), but 17 provides a hypothetical schematic example showing secundative case alignment (P and R are marked identically as ACC) with indirective agreement alignment (P and T control agreement).

(17) Schematic representation of SCIA (unattested)

- a. SBJ VERB-2PL.OBJ-SBJ.AGR [_P OBJ_P.2PL-ACC]
- b. SBJ VERB-3SG.OBJ-SBJ.AGR [_R OBJ_R.2PL-ACC] [_T OBJ_T.3SG]

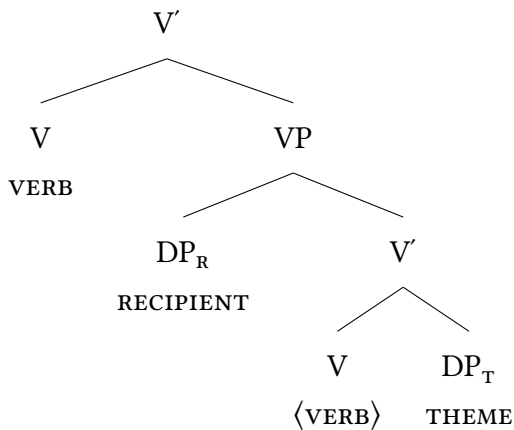
In the following section, I will develop an analysis of how the existing alignment patterns are derived and how the non-existing patterns are ruled out.

3 ANALYSIS In this section, I will propose an analysis that derives the patterns of case and agreement alignment in ditransitives discussed in Section 2. The analysis relies on three assumptions. First, the agreeing head is structurally more prominent than both objects. Second, the recipient is structurally more prominent than the theme argument. Third, languages differ in whether arguments with particular morphological cases can be indexed on the verb. In particular, in some languages the case of the recipient is accessible for agreement or clitic doubling, while in others it is not. These assumptions predict that the unattested pattern of secundative or neutral case alignment and indirective agreement alignment cannot be derived. In secundative and neutral case alignment, R’s case is the same as P’s. In languages with object agreement, both R and P can control agreement, so an agreeing head looking for an agreement controller cannot skip past R. The other, attested patterns shown in Section 2 are straightforwardly derived. I will start by discussing in more detail independently motivated assumptions about the structure of ditransitives and the relation between case and agreement in Section 3.1 before turning to the analysis itself in Section 3.2.

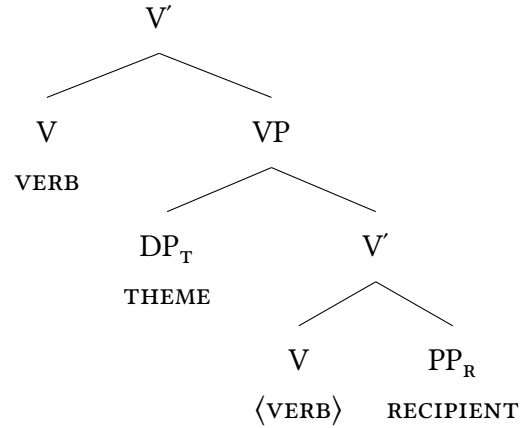
3.1 ASSUMPTIONS I begin by introducing and motivating three assumptions that underlie the analysis presented in Section 3.2. The first two of these concern the structure of ditransitive constructions. Ditransitive constructions in English have long been used as an argument for an additional layer above the VP. Larson 1988 argues that to accommodate English word order and two arguments in a ditransitive construction, an additional verbal projection is necessary to provide a position for the structurally higher XP, which moves there from a lower position. 18 shows partial structures of a double object construction and a prepositional dative construction, respectively, modelled after Larson 1988 (without movement). In the DOC, the recipient is in SpecVP while the theme is the sister of V. In the PDC, the theme is in SpecVP and the recipient is expressed as a PP complement to V (see Harley 2002:30–32 for some alternatives).

In both structures, the verb originates in V but is spelled out in a higher position, also V in 18 (to be modified). This reflects the word order in English ditransitive constructions, in which the verb generally precedes both the recipient and the theme. The higher position of the verb also c-commands both the recipient and the theme, and not just the lower phrase.

(18) a. Structure of a DOC



b. Structure of a PDC



The additional VP layer is by now widely accepted and has been termed Voice (Kratzer 1996) or *v* (Chomsky 1995, 2000, 2001). This head introduces the external argument, that is, the subject of a (di)transitive or unergative predicate, and is responsible for case assignment and object agreement through the operation AGREE, according to Chomsky 2000, 2001. I will not be concerned with how case is assigned in ditransitives here. I assume that agreement through Agree happens after case-assignment in the languages discussed in this paper, although in general, Agree can be independent of case-assignment (see Béjar 2003, Bobaljik 2008, Preminger 2011, Deal 2015b, 2022a, Bárány 2017, van der Wal 2022 for discussion and recent developments of Agree).

The motivation for positing recipients in the structurally higher position in 18a comes from the observation that there is an asymmetry in the DOC such that the recipient can bind into the theme but the theme cannot bind into the recipient (Barss and Lasnik 1986).

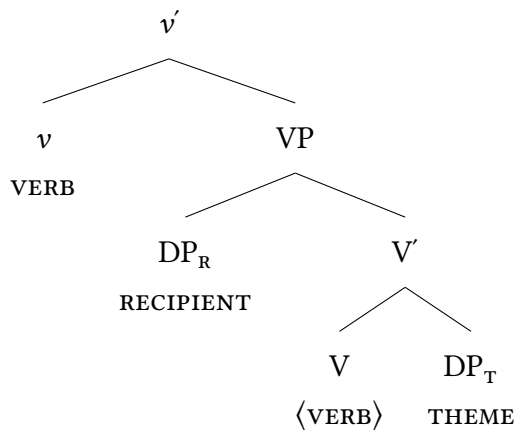
(19) English (Barss and Lasnik 1986:348)

- a. I denied [_R each worker] [_T his paycheck].
- b. I showed [_R every friend of mine] [_T his photograph].
- c. I denied [_R its owner] [_T each paycheck].
- d. I showed [_R its trainer] [_T every lion].

Barss and Lasnik 1986 argue that the universal quantifiers in R in 19a,b can bind the variables in T such that each paycheck and photograph, respectively, is understood to be linked to *worker* and *friend of mine*. Variable binding is not possible in 19c,d.

This is compatible with a structure such as 20 in which the recipient asymmetrically c-commands the theme, which I will assume as the structure underlying ditransitive constructions from now on (see Harley 2002, Anagnostopoulou 2003, Pylkkänen 2008, Bruening 2010, Georgala 2012, Harley and Miyagawa 2018, van der Wal 2022 for further discussion). I present both objects in VP rather than in ApplP and VP for ease of exposition; the proposal below is compatible with DP_R being introduced in SpecApplP as well.

(20) DOC with *v*



English is not the only language providing support for the configuration in 20. I have been able to find clear evidence for the asymmetric structure only for some languages in my sample; nevertheless, the following examples present evidence for R asymmetrically c-commanding T in different alignment patterns.

shown in Section 2, for example, DAT R in Hungarian cannot control agreement, while DAT R in Amharic can be doubled by a clitic.

Additionally, to rule out agreement patterns beyond the ones attested in my sample, I am assuming that there exists a hierarchy of cases such as 23 (see e.g. Bobaljik 2008, Blake 2001, Caha 2009, Harðarson 2016, Graf 2019, Zompì 2019, Bány 2021b).

(23) NOM/ABS > ACC/ERG > DAT > OBL (INS, ALL, ...) > ...

In recent years, versions of 23 have been discussed in particular in the context of case syncretism, with Caha 2009 showing that regular case syncretism generally only targets continuous sequences along the hierarchy. For example, accusative (ACC) and instrumental (INS) are generally not syncretic to the exclusion of dative (DAT; see Harðarson 2016, Graf 2019, Zompì 2019, Smith and colleagues 2019, Bány 2021b for discussion).

Bobaljik 2008, building on Moravcsik 1978a, proposes an additional generalisation based on 23. Starting from morphologically unmarked cases, NOM and ABS, Bobaljik suggests that if a DP with a case on a given level of 23 can control agreement (he calls this property ‘accessibility’), a DP with a case to its left on 23 will also be able to control agreement. To give a concrete example, if an ergative–absolutive language allows DAT DPs to control agreement, ERG DPs and ABS DPs must be able to control agreement, too. Thus cases accessible for agreement in a given language form a continuous sequence, starting at NOM/ABS, on 23. As a reviewer points out, the case hierarchy is not necessary to derive generalisation 7. It does, however, rule out additional patterns not found in my sample, for example languages with indirective case alignment in which only the DAT R but no other argument controls agreement (see also Baker 2015:64–67, Bány 2017:170–75, Forbes 2018:83 for discussion of potential counterexamples).

Summarising, I am assuming that (i) the recipient asymmetrically c-commands the theme in ditransitive constructions, (ii) the agreeing head asymmetrically c-commands both the recipient and the theme, and (iii) that a DP controlling agreement in a given language must bear a case that is part of a continuous sequence of 23 starting with NOM/ABS. I will now show how these assumptions derive the typological gap in ditransitive constructions.

3.2 DERIVING ALIGNMENT PATTERNS Recall generalisation 7, repeated here. Based on the assumptions just described, it is possible to explain the typological gap in 7.

(7) *A typological gap in ditransitive case and agreement alignment*

In languages in which the subject and one object are agreement controllers, secundative or neutral case alignment is never exclusively combined with indirective agreement alignment.

The argument goes as follows. In indirective case alignment, the recipient of a ditransitive (R) has a case that differs from that of the single object of a monotransitive (P) and the theme of a ditransitive (T). In a common pattern, shown in 5, 6a, and 8 for Amharic and Hungarian, respectively, P and T are ACC, while R is DAT. Kalaallisut 3 and 4b and Warlpiri 15 show indirective case with P and T as ABS and R as ALL and DAT or ALL, respectively. These patterns are summarised in Table 3.

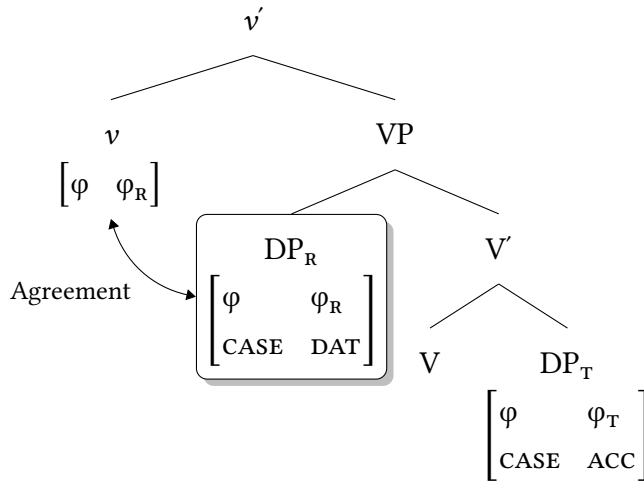
Language	P = T		R	Agreement alignment
Amharic	ACC	ACC	DAT	secundative (with R)
Hungarian	ACC	ACC	DAT	indirective (with T)
Kalaallisut	ABS	ABS	ALL	indirective (with T)
Warlpiri	ABS	ABS	DAT	secundative (with R)

Table 3 Indirective case patterns and associated agreement alignment

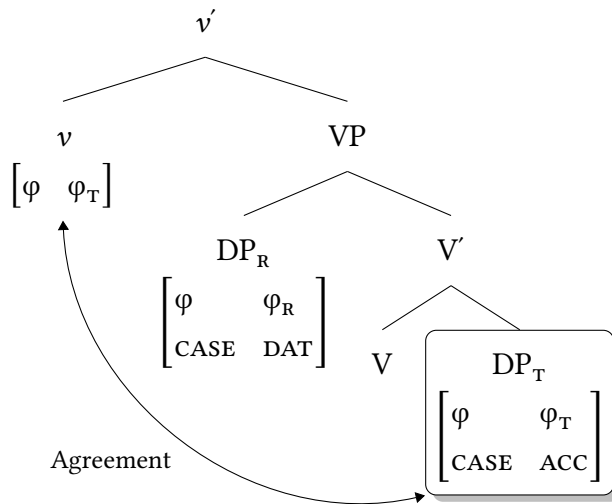
Given a ditransitive structure such as 20, the recipient is structurally higher than the theme. As the languages in the sample (and the scope of the generalisation in 7) have agreement with only one of their objects, I am assuming that there is one agreement probe on ν , c-commanding both the recipient, DP_R in the following trees, and the theme, DP_T .

When the probe on ν starts probing for an argument to value its ϕ -features, it will first encounter DP_R . At this point, the case of this argument comes into play. As the data above have shown, languages differ in whether an argument in DAT (or ALL in some languages) case can control agreement or not. This is possible in Amharic and Warlpiri, but not in Hungarian or Kalaallisut. The same structure thus leads to different outcomes of an Agree relation originating from ν : in Amharic or Warlpiri, ν can enter an Agree relation with the DAT DP_R and get the recipient's ϕ -features. In Hungarian and Kalaallisut, agreement with the DAT or ALL DP_R is not possible – ν skips the recipient and agrees with the ACC or ABS DP_T instead, getting its ϕ -features. Whether agreement with an argument in a certain case is possible is a language-specific property. The two scenarios are illustrated in 24 and 25, with the agreement controllers highlighted.

(24) Indirective case and secundative agreement, e.g. Amharic and Warlpiri



(25) Indirective case and indirective agreement, e.g. Hungarian and Kalaallisut



In sum, for indirective case alignment, agreement alignment is a matter of which cases are accessible for agreement. If a language allows DAT arguments to control agreement (in addition to unmarked cases and ACC or ERG), it will show secundative agreement alignment. If a language only allows NOM/ABS and ACC/ERG controllers, agreement alignment will be indirective.

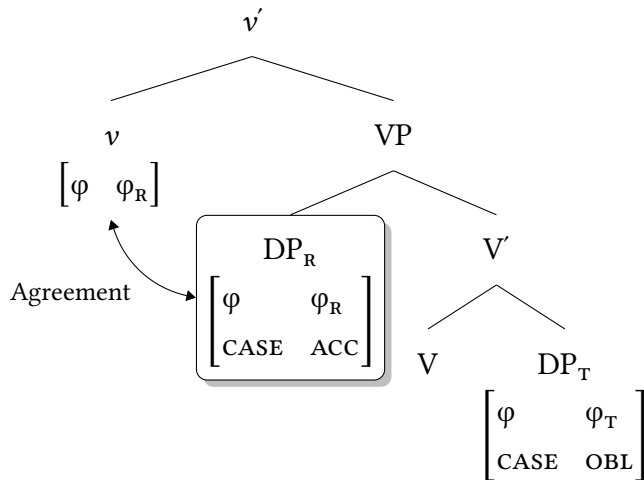
Consider now secundative case alignment. By definition, R has the same case as P in secundative case alignment. This means that, in languages with object agreement in simple transitives, P's and thus R's case MUST be accessible for agreement. Some case patterns are shown in Table 4 (both Nez Perce and Kham are tripartite languages; I use 'ACC' instead of 'OBJ' used by Deal 2010 and Watters 2002 and 'ABS' instead of NOM used by Deal 2010).

Language	P = R		T	Agreement alignment
Kalaallisut	ABS	ABS	INS	secundative (with R)
Kham	ACC	ACC	ABS	secundative (with R)
Movima	NOM	NOM	OBL	secundative (with R)
Nez Perce	ACC	ACC	ABS	secundative (with R)

Table 4 Secundative case patterns and associated agreement alignment

In the ditransitive structure shown in 26, DP_R asymmetrically c-commands DP_T and v asymmetrically c-commands both, as before. However, crucially, the question whether DP_R is accessible or not is now the same across all languages with secundative case alignment: since R's case is the same as P's, R's case must be accessible. In any language with object agreement, secundative case alignment must therefore allow secundative agreement alignment.

(26) Secundative case and secundative agreement



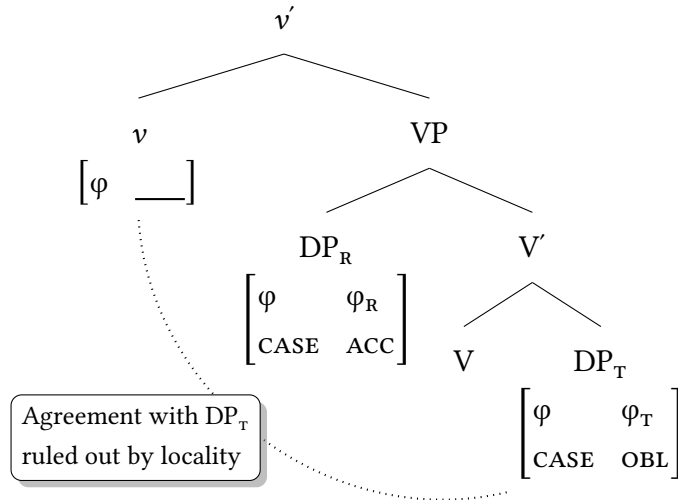
The same reasoning holds for neutral case alignment: in neutral case alignment, P, R and T all have the same case. In a structure such as 26, a probing v will always be able to enter an Agree relation with R in neutral case alignment, since R's case must be accessible.

Summarising, agreement in indirective case alignment depends on whether R's case is accessible or not. This means that there are two possible agreement alignment types when case alignment is indirective: if R's case is accessible, agreement is secundative (with R); if R's case is not accessible, agreement is indirective (with T). Accessibility is not an issue in secundative and neutral case alignment: R's case must be accessible, since it is the same as P's case. Thus secundative and neutral case alignment must allow secundative agreement (with R).

For a language to show secundative or neutral case alignment and indirective agreement alignment, agreement must skip R. In a structure such as 26, all else being equal, syntactic locality forbids

such a configuration: a probe enters an Agree relation with the closest accessible DP, where ‘closeness’ is defined as c-command (see e.g. Chomsky 2000:122, Béjar 2003, Béjar and Rezac 2009, Deal 2022a). This is shown in 27 (note that DP_T could also be NOM or ABS):

(27) Locality-violating secundative case and indirective agreement



The structural configuration of ditransitives in which v asymmetrically c-commands both R and T and R asymmetrically c-commands T combined with case accessibility therefore derives exactly the typological gap described in 7. Among the languages in my sample, there is no language that EXCLUSIVELY shows secundative or neutral case alignment and indirective agreement. The role played by locality can be understood further by considering an alternative hypothesis about the structure of ditransitives. Assume that rather than R c-commanding T as assumed so far, T is structurally more prominent and asymmetrically c-commands R . All else being equal, this alternative hypothesis would predict there to be languages in which only T controls agreement (indirective agreement alignment), even in languages with secundative or neutral case alignment. This prediction is not accurate, however. This alternative hypothesis of T c-commanding R is not supported by the languages in my sample. Yet another alternative hypothesis is that the agreement controller is not determined structurally by locality but based on a thematic hierarchy on which RECIPIENT is more prominent than THEME. All else being equal, this hypothesis would predict agreement with R over T even when T is structurally more local to the agreeing head. So far, this thematic hypothesis appears to be feasible, too, but see Section 4.3 for further discussion.

3.3 (MONO)TRANSITIVE ALIGNMENT TYPES Before concluding this section, I turn to Bobaljik’s 2008 explanation of the typological gap in intransitive and monotransitive alignment types that

inspired the analysis proposed here. Moravcsik 1978a 1978 observation is that while ergative case alignment is found with ergative and accusative agreement alignment, accusative case alignment only co-occurs with accusative agreement alignment. English and other Germanic languages are examples of languages with accusative case and agreement alignment. Subjects in intransitive and transitive clauses are nominative and control agreement, while objects in transitive clauses are accusative and do not control agreement (Figure 3b).



Figure 3 Ergative-absolutive and nominative-accusative alignment

Ergative case alignment occurs with both ergative and accusative agreement alignment. In Hindi-Urdu (Indo-Aryan), no morphologically case-marked argument can control agreement (Saksena 1981, 1985, Comrie 1981, 1985, Mohanan 1994, Bickel and Yāḍava 2000). In the perfective, Hindi-Urdu shows ergative-absolutive case and agreement alignment (ABS *s* and *P* can agree, but not ERG *A*). Nepali (also Indo-Aryan; Bickel and Yāḍava 2000) differs from Hindi-Urdu in that ergative subjects can control agreement. So Hindi-Urdu and Nepali both show ergative-absolutive case alignment, but in Nepali, intransitive (*s*) and transitive subjects (*A*) control agreement; this is nominative-accusative agreement alignment.

The fourth logically possible type, a language with nominative-accusative case alignment and ergative-absolutive agreement alignment does not seem to exist. Bobaljik 2008 expresses this generalisation in terms of morphological case, such that if accusative and ergative ('dependent cases' in Bobaljik 2008) can control agreement in a given language, morphologically unmarked cases such as nominative and absolutive must be able to as well. In the unattested type of language, agreement would have to skip the nominative subject to agree with the morphologically marked accusative object. If *T* is the agreeing head ('Infl+V' in Bobaljik 2008), the closest argument in terms of c-command will be the subject in SpecvP. In languages with nominative-accusative case alignment and agreement, this NOM subject must be accessible for agreement. Therefore, skipping the subject and agreeing with the accusative object should be ruled out by locality (the same holds for neutral case alignment: even if there is no case-marking at all, the subject is the closest argument to *T* and locality should rule out agreement with the object).

Like on the the analysis presented here, the combination of structural relations (*T* c-commands the subject and object, the subject c-commands the object) and accessibility derives a typological

gap in possible alignment types: there are no languages with nominative–accusative case alignment that only show ergative–absolutive agreement alignment. Given the parallels between the two typological gaps, I suggest that the typological gap in ditransitive alignment is related to the typological gap in transitive alignment patterns.

3.4 INTERIM SUMMARY Summarising this section, I showed that independently motivated assumptions about the structure of ditransitive constructions and the interaction of morphological case and agreement derive exactly those types of alignment in ditransitive constructions that are attested. The remaining logically possible type can be ruled out by locality. This parallels the absence of languages with NOM–ACC case but ERG–ABS agreement alignment. There are, however, languages in which non-local agreement as shown in 27 is found as one possible alignment type as an alternative to another type. I discuss these in the next section.

4 ALIGNMENT ALTERNATIONS Several languages in my sample show alignment alternations. In Khanty and Mansi, for example, ditransitives can be expressed using secundative case and secundative agreement alignment, or, alternatively, using indirective case and indirective agreement alignment (Nikolaeva 2001, Sipőcz 2016; the same is true of Kalaallisut, discussed in Sections 1 and 2). In both Khanty and Mansi, case and agreement alignment change together: object agreement can only be controlled by accusative arguments (which are sometimes morphologically unmarked) and so in secundative case alignment, the recipient controls agreement, while in indirective case alignment, the theme does. Thus both languages conform to generalisation 7 established in Section 1.

But alignment types need not vary together, as we have seen for Amharic, for example. In Amharic, the verb *give* (and other predicates) shows secundative agreement alignment, that is object agreement is controlled by the recipient, but case alignment can vary: the recipient can be expressed in dative or accusative case. Again, this type of alternation is compatible with the generalisation in 7, as agreement in both patterns conforms to locality and the case hierarchy (see Section 3.2).

However, there are languages in which alignment alternations give rise to patterns that are seemingly at odds with the analysis presented in Section 3 and generalisation 7. In my sample, I have identified two such patterns. In the first, agreement alignment varies with different predicates while case alignment seems to remain constant. In other words, with some ditransitive predicates, the recipient controls agreement and with others, the theme does, even though the predicates' case frames remain the same (at least superficially). This type of alternation is illustrated by Ngkolmpu (a Yam language) in 28:

(28) Ngkolmpu (Carroll 2016:149; Matthew Carroll, p.c.)

- a. Markus-w [T pr kati] [R nson] b-mae-y.
 Markus-ERG tree leaf.ABS 1SG.DAT 1SG.OBJ-give-SG.SBJ.HOD
 ‘Markus gave me the money (earlier today).’
- b. Markus-w [T pr kati] [R nson] s-re-i.
 Markus-ERG tree leaf.ABS 1SG.DAT 3.OBJ-send-SG.SBJ.HOD
 ‘Markus sent **the money** to me.’

In 28, case alignment is indirective throughout (R = DAT, T = ABS), but agreement alignment changes with different predicates. Given the analysis presented in Section 3, this type of pattern is unexpected: if arguments bearing dative case can control agreement in a language, it should not be possible to ‘skip’ them and agree with the theme instead. If the examples in 28 represent a structure in which the recipient is closer to verb than the theme (i.e. R asymmetrically c-commands T and *v* c-commands both), ‘skipping’ the recipient amounts to a locality violation. In the second type of seemingly exceptional alternation, the same predicate allows two different agreement alignment types. Again, at first glance, this gives rise to violations of locality: if case alignment and syntactic structure do not change, a change in agreement alignment is unexpected. The examples in 29 illustrate this for Alutor (Chukotko-Kamchatkan).

(29) Alutor (Mel’čuk 1988:294–95)

- a. ICSA – agreement with R
- əlləy-a Ø-ina-jəl-i [R yəmək-əŋ] [T yəttə] []
 father-ERG 3SG.SBJ-1SG.OBJ-give-3SG.SBJ 1SG-DAT 2SG.ABS
 ‘Father gave you as a wife to me.’
- b. ICIA – agreement with T
- əlləy-a Ø-ina-jəl-i [R yənək-əŋ] [T yəmmə]
 father-ERG 3SG.SBJ-1SG.OBJ-give-3SG.SBJ 2SG-DAT 1SG.ABS
 ‘Father gave **me** as a wife to you.’

Note that the examples in 28 and 29 which seem to violate locality do not actually violate generalisation 7 about the typological gap in ditransitive constructions: neither language instantiates a pattern in which case alignment is secundative or neutral and object agreement is indirective (controlled by the theme). Rather, these examples appear to violate locality by allowing agreement with a

DP other than the closest one. They are therefore not counterexamples to generalisation 7 but they seemingly violate some principles *underlying* it.

There are four languages in my sample, among them the Semitic language Tigrinya, in which one of the ditransitive patterns *does* seem to violate 7: Tigrinya has neutral case alignment and secundative agreement alignment (agreement with R). But, in certain circumstances, it also allows for indirective case alignment (agreement with T). Again, this is not expected if syntactic locality holds (see Section 4.3 for further discussion).

(30) Tigrinya (Nazareth 2011:109–10)

a. Context: *What did Jonas give to the poor?*

[_T gänzäb] hib-u-wom.
 money.SG PFV.give-SM.3SG.M-OM1.3PL.M

‘He gave them money.’

b. Context: *To whom did Jonas give **the money**?*

[_R n-di_ka-tat] hib-u-**wo**.
 to-poor-PL PFV.give-SM.3SG.M-**OM1.3SG.M**

‘He gave **the money** to the poor.’

As they appear with different case alignment types, these patterns are independent of case-marking and thus they are arguably more general than just counterexamples to 7. In Section 4.2, I analyse them as a consequence of ‘relativised probing’: in brief, the alternations in 29 and 30 are neither random nor triggered by structural factors, but by the relative properties of the two internal arguments. In one case, represented by Alutor, among others, the person features of the objects play a role in determining agreement, while in the other, represented by the Chukotko-Kamchatkan language Itelmen and Tigrinya, among others, the information structural status of the two objects does. I will argue that by relativising agreement to particular features, locality is also relativised and thus not actually violated.

Before turning to these patterns, however, I first discuss alternations involving different predicates, as shown in 28. For similar data from Basque and Burushaski, it has been argued that not all dative arguments are alike: some are structural datives, which can control agreement, while some are underlyingly adpositional phrases (PPs), which cannot. In brief, rather than representing a violation of locality, examples such as 28 might have different underlying structures leading to different agreement patterns.

4.1 AGREEMENT ALTERNATIONS WITH DIFFERENT PREDICATES The following examples from Ngkolmpu (a Yam language of New Guinea; Carroll 2016) and Burushaski (an isolate spoken in Pakistan; Willson 1996, Baker 2015, 2018) illustrate alternations in ditransitive constructions that are closely tied to particular lexical items.

(31) Ngkolmpu (Carroll 2016:149; Matthew Carroll, p.c.)

- a. Markus-w [T pr kati] [R nson] b-mae-y.
 Markus-ERG tree leaf.ABS 1SG.DAT 1SG.OBJ-give-SG.SBJ.HOD
 ‘Markus gave me the money (earlier today).’
- b. Markus-w [T pr kati] [R nson] s-re-i.
 Markus-ERG tree leaf.ABS 1SG.DAT 3.OBJ-send-SG.SBJ.HOD
 ‘Markus sent **the money** to me.’

(32) Burushaski (Baker 2018:211)

- a. Ja-a [R in-mo-r] [T hán tofá-an] mu-ú-abayam.
 1SG-ERG 3SG.F-OBL-DAT one gift-INDEF.ABS 3.F.OBJ-give-1SG.SBJ
 ‘I have given her a gift.’
- b. Hilés-e [R dasín-mo-r] [T **toofá-muts**] píish o-t-imi.
 boy-ERG girl-OBL-DAT gift-PL.ABS present 3PL.OBJ-do-3SG.SBJ.PST
 ‘The boy presented **gifts** to the girl.’

I follow proposals by Alexiadou and colleagues 2014 for a number of languages, Rezac 2008, 2011 for Basque, and Baker 2018 for Burushaski in analysing these data. The basic idea is that those datives that cannot control agreement differ structurally from the datives that do. One possibility is that datives are PPs (Rezac 2008, 2011) but some PPs have an outer probe that can be valued by the ϕ -features of the DP contained in them, basically rendering them transparent for agreement. PPs lacking this probe will not be accessible for agreement. Another possibility is that arguments with structural dative case are DPs, while arguments with lexical or inherent dative case are PPs the latter of which do not control agreement (Baker 2018). Either approach is compatible with what I am suggesting here, but for concreteness, I adopt the latter (different current approaches to case assignment agree in distinguishing structural from lexical or inherent case, see e.g. Marantz 1991, Woolford 2006, Legate 2008, Baker 2015, 2018).

Whether the different noun phrase structures also correlate with different ditransitive structures is not clear. If, say, the PP-datives appear in a prepositional dative frame, the theme argument is more local to v ’s probe in the first place, giving rise to agreement with the theme. Otherwise,

if the PP-dative is more local to *v*, it will simply be skipped when *v* probes if only DPs are accessible for agreement.

Supporting evidence for an analysis involving different underlying structures with identical spell-out comes from common patterns of syncretism of internal arguments, for example syncretism of accusative and dative case. In Spanish and certain varieties of Basque, for example, *p*, *τ*, and *r* can all be marked identically, yet they show different syntactic behaviour with respect to agreement and clitic doubling, relativisation, passivisation, etc. (Odria 2014, 2019, Bány 2018, 2021b). In such languages, identical case-markers spell out different underlying semantic roles, namely themes and recipients. Extending this idea to the data discussed here, I suggest that in Ngkolmpu, Basque, Burushaski, and other languages, what consistently look like dative case-markers spell out recipients as well as more oblique semantic roles, with the latter having a different underlying structure and which leads to different syntactic behaviour. For Ngkolmpu, Carroll (2016:149) points out that the single verb showing indirective agreement alignment is *orei* ‘to send’; it is possible that its DAT argument is not a recipient (a DP) but a goal (a PP) and this difference underlies the distinct alignment pattern.

4.2 AGREEMENT ALTERNATIONS BASED ON ϕ -FEATURES AND INFORMATION STRUCTURE I now turn to languages showing alternations in ditransitive constructions triggered by the relative characteristics of the two objects. In my sample, the Northern Chukotko-Kamchatkan languages Alutor (Mel’čuk 1988), Chukchi (Mel’čuk 1988, Dunn 1999, Bobaljik and Wurmbrand 2002), and Koryak (Abramovitz 2020), all with indirective case alignment, alternate between indirective and secundative agreement for some predicates. As shown in 29, it appears that the object whose person is higher on the person hierarchy in 33 controls agreement.

(33) Person hierarchy

$$1 > 2 > 3$$

The Alutor example 29 (repeated here in 34a,b) showed that when the two objects differ in their person, the one whose person is higher on 33 controls agreement. Example 34c complicates this picture, however: when both objects are third person, it is invariably the theme that controls agreement.

(34) Alutor (Mel’čuk 1988:294–95)

a. ICSA — agreement with *r*

əlləy-a	Ø-ina-jəl-i	[_R yəmək-əŋ]	[_T yəttə]
father-ERG	3SG.SBJ-1SG.OBJ-give-3SG.SBJ	1SG-DAT	2SG.ABS

‘Father gave you as a wife to me.’

- b. ICIA – agreement with T

ǎlləy-a	Ø-ina-jəl-i	[_R yənək-əŋ]	[_T yəmmə]
father-ERG	3SG.SBJ-1SG.OBJ-give-3SG.SBJ	2SG-DAT	1SG.ABS

‘Father gave **me** as a wife to you.’

- c. ICIA – agreement with T

əlləy-a Ø-jəl-**nina-wwi** [R ənək-əŋ] [] [T **ʃininkina-wwi** **ɳavakka-wwi**
 father-ERG 3SG.SBJ-give-3.OBJ-PL he-DAT his-PL.ABS daughter-PL.ABS
]

‘Father gave his daughters as wives to him.’

The data in 34 are the clearest data I have on this phenomenon. For Chukchi, see Mel'čuk 1988:301, Dunn 1999:206–7 as well as Bobaljik and Wurmbrand 2002, and for Koryak, see Abramovitz 2020, 2021. While overall quite similar, the languages differ in details. Chukchi disallows two first or second person objects in ditransitives in the first place (Mel'čuk 1988:301), while in Koryak, DP_T also controls agreement when both objects are first or second person (Abramovitz 2020). While a person hierarchy such as 33 has a clear effect on determining agreement, it appears that it is not the only factor. I present an analysis in Section 4.3.

In Itelmen (a Southern Kuchotko-Kamchatkan language; Bobaljik and Wurmbrand 2002), agreement alternates depending on the context. Bobaljik and Wurmbrand (2002) propose that information structural properties are crucial: whichever object is contextually more salient determines agreement. This is illustrated in 35 for Itelmen (the suffix *-nen*, glossed as 3SG.OBL, in 35a indicates agreement with dative R).

- (35) Itelmen (Bobaljik and Wurmbrand 2002:17)

- a. Context: *My brother came.*

i kma [R ənna-nk] [T βaɬč] t-zəl-nen.
and I him-DAT knife 1SG.SBJ-give-3SG.OBL
'And I gave the knife to him.'

- b. Context: *Where is **the** knife?*

qeʃnu [R zlatumx-enk] t-zəl-čen?
really brother-DAT 1SG.SBJ-give-1SG.SBJ>3SG.OBJ
'Didn't I give it to my brother?'

These examples show different contexts which introduce a discourse referent. In the responses to the questions in the context, the salient object controls agreement, not the one with a new discourse referent. This is independent of whether the salient object is the recipient or the theme.

The analysis presented in Section 3 would predict agreement with *R* if its case is accessible, but this does clearly not account for the alternations presented here. It is possible, however, to extend the analysis to cover alternations which appear to violate locality. I present such an extension in the next section.

4.3 ANALYSING ALTERNATIONS The rather straightforward analysis of agreement presented in Section 3 predicts the typological gap in ditransitive alignment correctly, but it is too coarse to account for the agreement alternations presented in Section 4.2. In this section, I propose a more detailed analysis that can capture the more complex patterns, too.

An important point is that the apparently exceptional, locality-violating patterns always appear as *ALTERNATIVES* to another alignment pattern; they are never the only alignment pattern in a language. I take this to mean that there is an unmarked or default alignment type, predicted by the analysis in Section 3, and a marked alignment type that only occurs under particular conditions. These conditions involve competition between the two objects, in terms of their person features or their information structural status.

To incorporate these additional factors into the analysis, I will adopt Amy Rose Deal's *INTERACTION/SATISFACTION* theory of Agree (Deal 2015b, 2022a,b; a type of relativised probing; see also Béjar 2003, Béjar and Rezac 2009, Nevins 2007, Georgi 2012, 2013). On this approach, a probe does not have (un)interpretable and (un)valued ϕ -features but two sets of features determining how it deals with the features of DPs it targets. These two sets are the probe's *INTERACTION FEATURES* (INT) and *SATISFACTION FEATURES* (SAT).

The features in INT specify which features of a target can be copied onto the probe and spelled out (subject to variation, as discussed below). Copying of features can in principle happen repeatedly so that a probe can interact with several distinct targets. Interaction with a probe can but need not result in a morphological realisation of features (see below and Deal 2022b for several examples). The probe's SAT features specify when the probe stops probing. As soon as the probe encounters a target with a feature in the probe's SAT, it will no longer probe other targets. If a probe does not encounter any satisfaction features, it will stop probing once it runs out of targets (this need not lead a derivation to fail; cf. Béjar 2003, Preminger 2014, Deal 2022a).

The basic system can be illustrated by the Nez Perce examples in 36. The relevant agreement probe is the complementiser *ke-* which can spell out agreement with a first person argument,

36a, a second person argument, 36b, or both, 36c, but not with a third person argument (see Deal 2015a:399 for details of the Nez Perce agreement paradigm).

(36) Nez Perce (Deal 2015a:410, 2015b:6; glosses slightly adapted)

- a. ke-x kaa Angel-nim hi-nees-cewcew-téetu nuun-e
C-1 then Angel-ERG 3.SBJ-OBJ.PL-call-HAB.PRS 1PL-ACC
'when Angel calls us'
- b. ke-m kaa 'ee nees-cewcew-téetu-m
C-2 then 2SG.CL OBJ.PL-call-HAB.PRS-CIS
'when you call us'
- c. ke-m-ex kaa *pro*_{SBJ} cewcew-téetu *pro*_{OBJ}
C-2-1 then 1SG call-HAB.PRS 2SG
'when I call you'

Whether the complementiser agrees with both a first and a second person argument depends on the structural configuration. Compare 36b, only spelling out agreement with the 2SG subject, to 36c, in which the complementiser spells out agreement with the 1SG subject as well as the 2SG object. Deal (2015b) accounts for this asymmetry by proposing that the complementiser can INTERACT with both first and second person arguments, but it is SATISFIED by second person arguments (more precisely, a second person's ADDR(essee) feature; cf. Harley and Ritter 2002, Béjar and Rezac 2009).

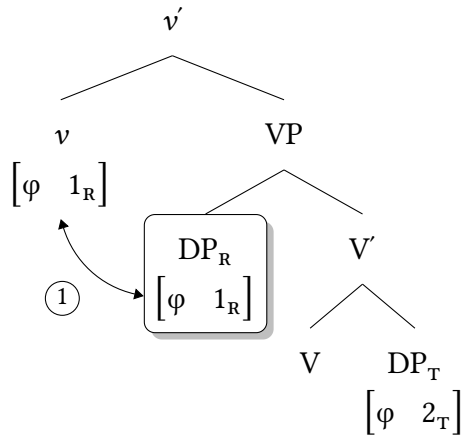
In 36b, the complementiser's probe encounters the 2SG subject first, copies its features, is satisfied and thus stops probing further. In 36c, in contrast, the probe encounters the 1SG subject and copies its features but is NOT satisfied and continues probing. It finds the 2SG object and copies its features as well, overtly indexing both. Modelling probing with interaction and satisfaction features thus allows incorporating person features and configurational aspects.

In languages without agreement alternations, the probe is simply satisfied by the first accessible object argument it encounters. However, the INT/SAT model can be adopted to account for the agreement alternations in person and salience described in Section 4.2. I will start to illustrate this for alternations in person in Alutor, Chukchi, and Koryak.

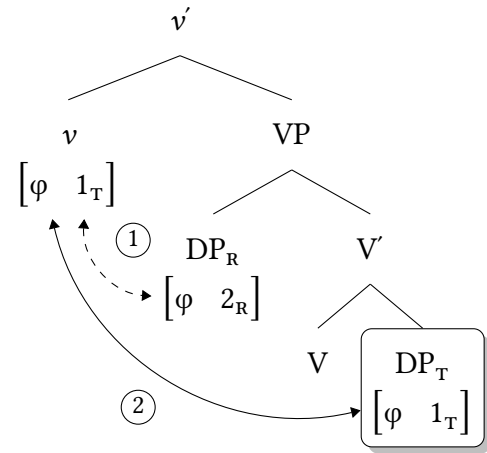
4.3.1 ALTERNATIONS BASED ON PERSON The relevant data from Alutor are repeated here.

(34) Alutor (Meščuk 1988:294–95)

(38) Object agreement in Alutor 34a



(39) Object agreement in Alutor 34b



This does not yet account for 34c, where both objects are third person and the theme controls agreement. Similar data from another Chukotko-Kamchatkan language, Koryak, hint at what an analysis of these patterns could look like. As Abramovitz 2021:139 shows, in Koryak ditransitives first and second person objects control agreement if the other object is third person (like in Alutor). If both objects are SAPs or both are third person, the theme controls agreement. This is shown in 40.

(40) Koryak (Abramovitz 2021:139)

- a. ICSA — agreement with R

$\text{y}\ddot{\text{a}}\text{m-nan}$ $\text{t-}\ddot{\text{a}}\text{-j}\ddot{\text{a}}\text{l-}\ddot{\text{y}}\text{i}$ $[\text{R } \text{y}\ddot{\text{a}}\text{n-k-}\ddot{\text{a}}\text{-}\eta]$ $[\text{T } \text{urvaq}]$
 1SG-ERG 1SG.SBJ-EP-give-2SG.OBJ 2SG-OBL-EP-DAT shirt.ABS.SG
 ‘I gave a shirt to you.’

- b. ICIA — agreement with T

$\text{jequ=}\text{?am}$ $[\text{T } \text{y}\ddot{\text{a}}\text{mmo}]$ $[\text{R } \text{y}\ddot{\text{a}}\text{n-k-}\ddot{\text{a}}\text{-}\eta]$ $\text{ne-j}\ddot{\text{a}}\text{l-}\text{y}\ddot{\text{a}}\text{m?}$
 why=FOC 1SG.ABS 2SG-OBL-EP-DAT INV-give-1SG.OBJ
 ‘Why did they give **me** to you?’

- c. ICIA — agreement with T

$\text{t-}\ddot{\text{a}}\text{-j}\ddot{\text{a}}\text{l-}\ddot{\text{a}}\text{-n}$ $[\text{R } \text{əj-k-}\ddot{\text{a}}\text{-}\eta]$ $[\text{T } \text{kali-kal}]$
 1SG.SBJ-give-EP-3SG.OBJ 3.NON.SG-OBL.NON.SG-EP-DAT book-ABS.SG
 ‘I gave a **book** to them.’

These data show that Koryak ditransitive *v* must differ from Alutor *v*. Rather than being satisfied by a first person argument, *v* is satisfied by the feature [PART(icipant)], which SAPs have in common (Abramovitz 2021:140).

Koryak also provides evidence for why the theme controls agreement when the two objects are both SAPs or third person. Koryak, like Alutor and Chukchi, is an ergative-absolutive language. Abramovitz 2021 shows that the subject is marked with ergative case only when there is also an absolutive object, but not when an object is incorporated, dative or oblique. To model this, Abramovitz 2020, 2021 assumes Baker's 2015 DEPENDENT CASE approach, according to which the case-marking of DPs can be determined by their relative configuration in a certain domain. For Koryak, this means that the subject of the clause can become ergative if it c-commands an absolutive object in a certain domain, but not otherwise. Relevant data are shown in 41.

(41) Koryak (Abramovitz 2020:16: (25), (26); see also Abramovitz 2021:145–46)

- a. **γəmmo** t-ə-valom-ək, əno ʔewŋəto-na-k
 1SG.ABS 1SG.S/A-EP-hear-EP-1SG.S that Hewngyto-OBL.SG-ERG
 [j-ə-t̪ɕim-aw-nin [T koŋŋ-**no**]]
 CAUS-EP-break-VBLZ-3SG.A>3.OBJ cup-ABS.PL
 'I heard that Hewngyto broke cups.'
- b. [T jej-u_i] { γə-nan / *γət̪ɕt̪ɕi } t_i valom-na-w,
what-ABS.PL 2SG.ERG 2SG.ABS hear-3.OBJ-3PL
 [əno ʔewŋəto-na-k j-ə-t̪ɕim-aw-nin t_i]
 that Hewngyto-OBL.SG-ERG CAUS-EP-break-VBLZ-3SG.A>3.OBJ
 'What all did you hear that Hewngyto broke?'

41a shows a matrix subject in ABS (bold-faced), indicating that the complement clause does not trigger ERG on the subject. The embedded subject in 41a does bear ERG (boxed). Compare this to 41b, where the embedded absolutive theme object *jeju* 'what' moves to the matrix clause – in that case the matrix subject must be ERG, like the embedded subject.

Abramovitz further shows that wh-words do not trigger ergative on the matrix subject in all positions. In the following pair of examples, the wh-phrase *what gifts* has not moved all the way to the matrix clause and the matrix subject must be absolutive.

(42) Koryak (Abramovitz 2021:138)

- a. ABS wh-word does not trigger ERG

yəmmo t-ə-ku-t̚etkejuŋ-ə-ŋ-ø [CP jeq-qevi-jə̃t̚ɕ
 1SG.ABS 1SG.S/A-EP-PRS-think-EP-PRS-T.S.IND which-gift-contents-ABS.PL
 ʔ-um-ə-jəl-ne-w ʔewŋəto-na-ŋ ənək-eto-ʔəlwəje-ŋ]
 1SG.S/A.IMP-EP-give-3.OBJ-3PL Hewngyto-OBL.SG-DAT 3SG.POSS-birth-day-DAT
 ‘I am wondering what gifts I should give Hewngyto for his birthday.’

- b. ERG matrix subject ungrammatical

*yəm-nan t-ə-ku-t̚etkejuŋ-ə-ne-w [CP jeq-qevi-jə̃t̚ɕ
 1SG-ERG 1SG.S/A-EP-PRS-think-EP-PRS-3.OBJ-3PL which-gift-contents-ABS.PL
 ʔ-um-ə-jəl-ne-w ʔewŋəto-na-ŋ ənək-eto-ʔəlwəje-ŋ]
 1SG.S/A.IMP-EP-give-3.OBJ-3PL Hewngyto-OBL.SG-DAT 3SG.POSS-birth-day-DAT
 intended: ‘I am wondering what gifts I should give Hewngyto for his birthday.’

Abramovitz takes 42 to indicate that the wh-phrase is not in the right domain to trigger ergative on the matrix subject. If the wh-phrase is in SpecCP of the embedded clause, there must be a domain boundary in the main clause that blocks the absolutive wh-phrase from triggering ergative case on the subject. But if this is the case, an absolutive object in its base position in SpecVP should also not be able to trigger ergative. Hence, Abramovitz 2021 argues, all absolutive objects move obligatorily in order to trigger dependent ergative, to a position where the absolutive c-commands a dative recipient.

This predicts that the theme should always control agreement, even if there is an accessible recipient. But as 40 has shown, this is not the case. Instead, in ditransitives the person of the two objects plays a role such that a first or second person object controls agreement if the other object is third person. Following Abramovitz 2021, Koryak ditransitive *v* is specified as shown in 43.

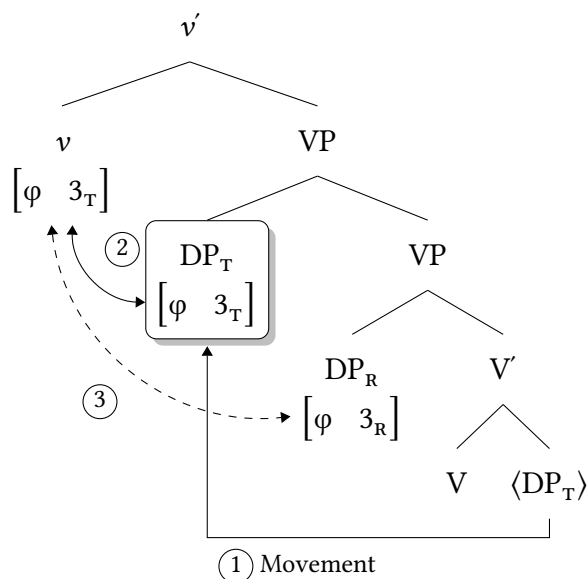
(43) Ditransitive *v* in Koryak

INT = { \varnothing }, SAT = {PARTICIPANT}

Agreement in a ditransitive with two third person objects is shown in 44. I assume here that the theme moves to a position c-commanding the recipient (before potentially moving on), (1). In this position, highlighted in 44, DP_T is more local to *v* than DP_R. When *v* probes, it will find DP_T and copy its features, (2). *v* is not satisfied and will continue to probe, finding DP_R and copying its features, (3). At this point, *v* will have two third person features — neither of which

outranks the other. With Abramovitz 2021, I assume that in this situation, the closest DP's features are the ones spelled out on v . Put differently, if the feature values of several arguments are identical, v spells out the features it copied first (not both) – due to locality, these will be the features of the closest argument in terms of c-command.

(44) Object agreement in Koryak 40c



An alternative way to explicitly derive agreement with the closest argument in structures such as 44 could work as follows (suggested to me by Jutta Hartmann, p.c.). Adapting Béjar and Kahnemuyipour's 2017 idea of PROBE REDUCTION, assume that a probe's SAT set can be modified if a cycle of probing fails to satisfy the probe. In the case at hand, probing the two third person DPs in 44 does not satisfy the probe. The probe then discards the features it has interacted with and reduces the SAT feature set from {PARTICIPANT} to $\{\phi\}$ (cf. Béjar and Kahnemuyipour 2017:494–95 as well as DYNAMIC INTERACTION in Deal 2022b). The probe probes again but is now satisfied by the first DP it encounters which carries ϕ -features, DP_T in 44. This way, agreement with the closest argument follows.

The Koryak agreement pattern is the consequence of several factors, then. First, Abramovitz 2021 argues that absolutive objects in both transitives and ditransitives move obligatorily in order to trigger dependent ergative on the subject. This is supported by the fact that all absolutive objects in simple transitives trigger ergative, but absolutes that stay in an embedded clause do not. What triggers this obligatory movement? Object movement is often triggered by specificity, definiteness, or information-structural properties (see e.g. Diesing 1992, Bhatt and Anagnostopoulou 1996, Neeleman and van de Koot 2008, Baker and Vinokurova 2010, Baker 2015, Titov 2020). This is not the case in Koryak, however, where all absolutive objects appear to move. One

might speculate that at some point in the history of Koryak, an ‘optional’ operation moved absolutive objects with particular properties to a position where they triggered ergative on the subject. Grammaticalisation could have then made this operation obligatory, generalising it to all absolutive objects irrespective of their syntactic properties.

Second, in addition to the syntactic configuration of theme and recipient, their features play a role in determining agreement. Even if the theme always crosses the recipient, the recipient controls agreement if it is not third person while the theme is. Rather than invoking another movement step that is sensitive to person features, Abramovitz 2021 explains this pattern using an Agree mechanism.

This analysis of Koryak raises the question why movement of the theme over the recipient does not apply in other languages, too, potentially giving rise to the unattested combination of secundative or neutral case alignment with secundative agreement as the single combined alignment type of a language. The motivation of movement in Koryak actually provides an answer to this question. In this language, it is the ABS argument that needs to move, that is the single object of a monotransitive clause (P) or the theme of a ditransitive clause (T). A dative argument does not influence whether the subject is ergative or not (see e.g. Abramovitz 2021:107, 225a, c, 114, 237c).

Consider a similar dependent case scenario in a language with secundative or neutral case alignment. In such languages, the single object of a monotransitive (P) bears the same case as the recipient of a ditransitive (R). So if the single object of the transitive can trigger dependent case on the subject, the expectation is that the recipient in a ditransitive can do so too. In other words, if a language with secundative or neutral case alignment required an object to move closer to the subject, there would be no reason for the theme to cross the recipient and move closer to the subject because, by definition, the recipient’s case would be the same as that of the single object of a monotransitive.

More generally, an operation that targets the direct object (P and T) in languages with indirective case alignment should target the primary object (P and R) in languages with secundative or neutral case alignment. In addition to object agreement, this is often the case with the passive, for example, and is to be expected unless an operation targets specific semantic roles. This means that the particular rule that gives rise to movement of the theme across the recipient in Koryak should not occur in languages with secundative or neutral case alignment because the recipient could satisfy it.

Summarising, Koryak, like Alutor, shows an alternation between indirective and secundative agreement in indirective case alignment. This alternation involves three aspects. First, in Koryak, Alutor, and Chukchi, it is only the predicate corresponding to *give* that allows dative arguments to control agreement (Abramovitz 2021, Mel’čuk 1988, Dunn 1999:115–16). Apart from this

predicate, the languages would be characterised as showing indirective case and indirective agreement alignment. Second, in Koryak and Alutor, first and second arguments outrank third arguments, independently of locality (in addition, in Alutor and Chukchi, first person arguments outrank second person arguments). Third, in Alutor, Chukchi, and Koryak, when the objects are equal in features, the theme controls agreement. In terms of locality, this suggests that the theme is closer to *v* than the recipient, a configuration that goes against my assumptions so far. However, the data in Abramovitz 2020, 2021 suggests that this is exactly the configuration found in Koryak: the theme moves across the recipient and closer to *v*. While I am not aware of data from Alutor and Chukchi that parallel Abramovitz's observations, I will tentatively conclude that the same movement operation leads to comparable structural configurations in Alutor and Chukchi, explaining why the theme controls agreement in ditransitives when both objects are third person.

These data provide a way to decide between two hypotheses raised in Section 3.2. If a thematic hierarchy determined whether the RECIPIENT or the THEME controls agreement, the structural configuration of the R and T arguments should not matter. But if T does move over R in Alutor, Chukchi, and Koryak and this movement gives rise to new agreement patterns, agreement is structurally determined and not thematically. This is compatible with the hypothesis that the syntactic configuration determines agreement controllers rather than thematic role (see Section 4.4 for further discussion).

The seemingly exceptional situation these Chukotko-Kamchatkan languages present can therefore be explained through a combination of person-sensitive agreement modelled using Deal's interaction and satisfaction approach and movement that changes the structural configuration of the recipient and the theme in ditransitives.

4.3.2 ALTERNATIONS BASED ON SALIENCE I now turn to alternations in ditransitive agreement alignment that reflect the contextual salience of the agreement controller. Languages in my sample that show such alternations include Tigrinya (Semitic; Nazareth 2007, 2011, Dalrymple and Nikolaeva 2011, Overfelt 2022), Itelmen (Southern Chukotko-Kamchatkan; Bobaljik and Wurmbrand 2002), and Zulu (Zeller 2012, 2015; see van der Wal 2022 for similar alternations in other Bantu languages). While Tigrinya has been argued by Nazareth (2007, 2011) and Dalrymple and Nikolaeva (2011) to show an agreement alternation triggered by information structure, Overfelt (2022) proposes that the alternation is actually a consequence of distinct structural configurations masked by morphological syncretism. Overfelt suggests that Tigrinya ditransitives alternate between a DOC and a PDC which give rise to local agreement with R and T, respectively. I will leave the nature of object agreement in Tigrinya open here and focus on object agreement

patterns triggered by salience in Itelmen, the analysis of which could be extended to Tigrinya, too.

Relevant examples from Itelmen are repeated here. In each case, a contextually salient discourse referent determines agreement.

(45) Itelmen (Bobaljik and Wurmbrand 2002:17)

a. Context: *My brother came.*

i kma [_R ənnə-nk] [_T βaɬč] t-zəl-nen.
and I him-DAT knife 1SG.SBJ-give-3SG.OBL
'And I gave the knife to him.'

b. Context: *Where is **the knife**?*

qeɫnu [_R zlatumx-enk] t-zəl-čən?
really brother-DAT 1SG.SBJ-give-1SG.SBJ>3SG.OBJ
'Didn't I give it to my brother?'

Building on the analysis of alternations based on person described in Section 4.3.1, I suggest that it is the relative salience of the two objects in the ditransitive that determines agreement. The contexts in 45 set up one of the following object referents as GIVEN. In each case, the given argument controls agreement.

There are several ways of modelling effects of information structure on syntax. One approach is to treat information structure as a post-syntactic filter which filters out those derivations that are not compatible with a particular information structural analysis (see e.g. Reinhart 2006, Neeleman and van de Koot 2008, 2010, Titov 2019, 2020). Other approaches place information structural features in narrow syntax (Aboh 2010, Miyagawa 2010, 2017, Hartmann 2016, van der Wal 2022), some also associating information structure (IS) features with particular syntactic positions (Rizzi 1997).

An analysis in terms of interaction and satisfaction features is in principle compatible with both a post-syntactic and a narrow syntactic IS. The INT/SAT approach allows a head to probe several arguments and spell-out agreement with a subset of them. In the scenarios discussed in this paper, only one instance of agreement is ever spelled out, even if the probe has interacted with more than one argument. If IS is represented as a post-syntactic module, it is possible that spelling out a particular agreement relation is postponed in syntax until IS picks the set of ϕ -features associated with an information structurally prominent argument. This way, narrow syntax can underspecify which agreement relation is spelled out and leave this decision to the IS module. Alternatively, if information structural features are accessible in syntax, agreement

with an argument bearing a certain IS feature can be modelled directly. If interaction and satisfaction sets include a feature value [GIVEN], a head probing an argument valued as [GIVEN] will copy its features and stop probing.

For concreteness, I will implement an approach involving IS features in syntax in this section.

Following Miyagawa 2017, I will refer syntactic features reflecting information structural properties as δ -features, where ‘ δ ’ is mnemonic for ‘discourse’. DPs can be specified for δ -features. The only δ -feature value that will be relevant here is [GIVEN]. I assume that DPs whose referents are established as given in a particular context will carry a feature value [GIVEN], shown in the structures below as $\begin{bmatrix} \delta & \text{GIVEN} \end{bmatrix}$.

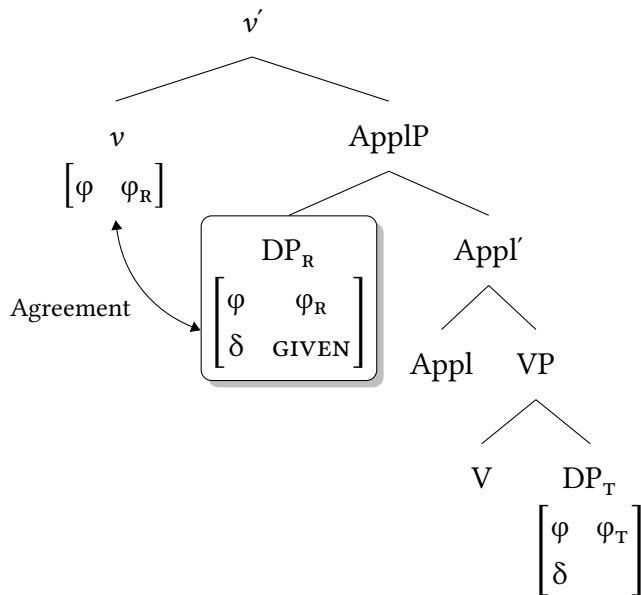
Sensitivity to givenness in Itelmen can be captured using the interaction and satisfaction framework as well (I am grateful to two reviewers for suggestions on improving this analysis). Just like in person alternations, the probe v can in principle interact with more than one argument, but only if it is not satisfied after probing the first argument. This means that if v encounters an R argument with the feature value GIVEN, it will stop probing. If, on the other hand, T is GIVEN and R is not, v can probe past R and spell out agreement with T. v ’s properties can be modelled as shown in 46.

(46) IS-sensitive v in Itelmen

$$\text{INT} = \{\varphi\}, \text{SAT} = \{\text{GIVEN}\}$$

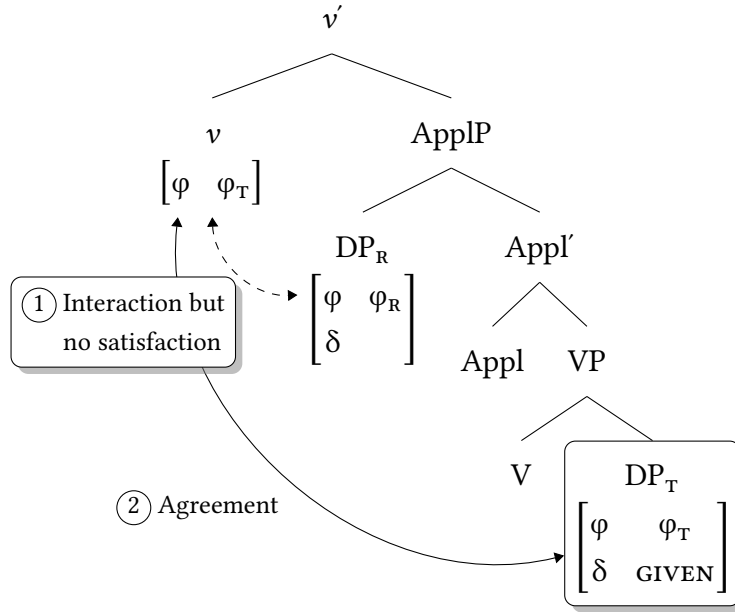
Agreement alternations based on givenness can be derived as shown in 47 and 48. In 47, representing agreement with a given recipient, v probes, finds DP_R , copies its features and is satisfied. v will spell out agreement with DP_R .

(47) Agreement with GIVEN DP_R , e.g. 35a/45a



In 48, representing agreement with a GIVEN theme, v probes DP_R but is not satisfied ((1)), as DP_R is not given. v continues and finds DP_T which satisfies it ((2)). I assume that interaction with the more specified argument is spelled out, that is, interaction with a GIVEN object rather than one not specified for δ -features.

(48) Agreement with GIVEN DP_T , e.g. 35b/45b



In this approach, locality still plays an important role: if v is satisfied by a DP given in discourse, the first such DP it encounters will satisfy it. If DP_R asymmetrically c-commands DP_T , this predicts agreement with a GIVEN DP_R . The specification of v in 46 also predicts that if no object is contextually given, both objects will nevertheless interact with v . As for Koryak and Alutor, I assume that if two objects are equal in features, interaction with the first (that is, more local) one is spelled out.

Alternatively, v 's interaction features could be specified as $\{\varphi, GIVEN\}$ so that v can only interact with an object that has both φ -features and a valued δ -feature. In that case, non-local agreement in 48 is derived because v 's interaction features are relativised to features not available on DP_R and DP_R is not interacted with. Thus only DP_T is accessible to v when DP_R is not given. While avoiding the need for particular spell-out rules sensitive to additional features, this approach requires specifying different features for monotransitive and ditransitive v , as monotransitive v does not appear to be sensitive to information structure (Georg and Volodin 1999, Bobaljik and Wurmbrand 2002). Both approaches can derive the agreement patterns at hand, but I will leave open which of these two is ultimately superior (I thank a reviewer for raising these issues).

4.4 INTERIM SUMMARY AND DISCUSSION In this section, I discussed different types of agreement alternations in detail. I classified these into distinct types: first, in lexical agreement alternations, exemplified by Ngkolmpu, 31, and Burushaski, 32, different predicates give rise to different alignment patterns. I suggested that this is a consequence of syncretism masking underlying structural differences.

Second, I discussed agreement alternations based on person in the Northern Chukotko-Kamchatkan languages Alutor and Koryak and proposed an analysis of these adopting the interaction and satisfaction approach to Agree (Deal 2015b, 2022b). Evidence from Koryak also led to a revision of the structure of ditransitives I assume for these languages: there is evidence that the theme moves across the recipient in Koryak, giving rise to a configuration in which the theme is more local to the agreeing head than the recipient.

Third, I argued that agreement alternations triggered by the relative salience of the two objects can also be accounted for using interaction and satisfaction features. I implemented this by making Agree sensitive to information structural δ -features in syntax.

How do these data relate to the overall generalisation about a typological gap in ditransitive alignment types proposed in 7 and the analysis presented in Section 3? Are data from Itelmen ditransitives as in 45 counterexamples to the typological gap and the analysis? The data presented in this section justify a negative answer to this question, I believe.

The main reason for this is that the data in this section illustrated ALTERNATIONS. In the 13 languages in my sample which show non-local agreement, the non-local agreement variant is always an alternative to a local agreement configuration that appears in certain contexts (see Appendix B). In other words, no language EXCLUSIVELY shows non-local agreement. The contexts which trigger alternations are similar across languages and, crucially, it is possible to identify additional factors that determine agreement.

Moreover, while it is possible that locality conditions change because the theme moves across the recipient, this kind of movement is not frequent in my sample of languages. I believe this is the case because an operation that obligatorily moves the theme across the recipient, giving rise to indirective agreement, is more likely to occur in languages with indirective case marking. As discussed in Section 4.3.1, the particular rule in Koryak that moves the theme τ to trigger dependent ergative should target the recipient R in languages with secundative or neutral case alignment, as the recipient would bear the same case as the single object of a monotransitive (P). More generally, if an (obligatory) rule targets P , we might expect it to target R in languages with secundative and neutral case alignment and τ in languages with indirective case.

A reviewer suggests that movement of τ across R could also be restricted to languages in which R is DAT, that is, R and τ are marked differently. This proposal appears to be in line with both typological (Sinnemäki 2008) and experimental work (Fedzechkina *et al.* 2016, 2017) about the

correlation of word order variation and case-marking. Another reason why the possibility of displacing τ does not affect agreement patterns more frequently could be that displacement of τ happens after agreement relations are determined. I leave the precise answer to this question open for further research.

A similar consideration holds for the placement of the agreeing probe. The assumption that this probe is on a head that asymmetrically c-commands both the recipient and the theme is compatible with the results presented in this section. If it were on lower head, say Appl, that c-commands the theme, but not the recipient, indirective agreement should be much more common.

I conclude that the 13 languages which show alternations with non-local agreement (Appendix B) are only apparent counterexamples to the typological gap. The analysis presented in this section can derive the agreement alternations from independent factors.

5 CONCLUSIONS In this paper, I described a typological gap in case and agreement alignment in ditransitive constructions. In languages in which verbal agreement is controlled by the subject and at most one object, case and agreement in ditransitive constructions do not exhibit all logically possible combinations of alignment. In particular, no language allows object agreement with only theme arguments in ditransitive constructions unless the recipient bears a distinct case, for example dative.

This typological gap follows from certain assumptions about the structure of ditransitive constructions and the interaction of morphological case and agreement. If the agreeing head asymmetrically c-commands both the recipient and the theme in ditransitives and the recipient asymmetrically c-commands the theme, locality predicts agreement with the recipient by default. Agreement with the theme becomes possible when the recipient's case is not accessible for agreement. In languages in which the recipient's case is accessible, agreement with the theme is thus ruled out by locality. Finally, I have also discussed agreement alternations that allow circumventing this restriction when one of the two objects is more prominent in terms of person features or information structural properties.

ABBREVIATIONS 1 = first person, 2 = second person, 3 = third person, A = agent-like argument of a canonical transitive verb, ABS = absolutive, ABSNT = absential, ACC = accusative, AGR = agreement, ALL = allative, APPL = applicative, AUX = auxiliary, CAUS = causative, CIS = cislocative, CL = clitic, CMPL = completive aspect, COMP = complementizer, DAT = dative, DEF = definite, DEM = demonstrative, DIR = direct, DOA = differential object agreement, DOC = double object construction, DSC = discontinuative, EP = epenthetic vowel, ERG = ergative, EXCL = exclusive, F = feminine, FOC = focus, FUT = future, GEN = genitive, HAB = habitual aspect, HOD = hodiernal past, IA = indirective

agreement, IC = indirective case, IMP = imperative, INCL = inclusive, IND = indicative, INDEF = indefinite, INDIC = indicative, INS = instrumental, INT = interaction features, INV = inverse, IPFV = imperfective, IS = information structure, M = masculine, N = neuter, NC = neutral case, NOM = nominative, NON = non-x, OBJ = object, OBL = oblique, OM = object marker, P = patient-like argument of a canonical transitive verb, PART = partitive, PAUC = paucal, PDC = prepositional dative construction, PFV = perfective, PL = plural, POSS = possessive, PRF = perfect, PRON = pronoun, PRS = present, PST = past, R = recipient-like argument of a ditransitive verb, REAL = realis, REC = recent, REM = remote, s = single argument of a canonical intransitive verb, SA = secundative agreement, SAP = speech act participant, SAT = satisfaction features, SBJ = subject, SC = secundative case, SG = singular, SM = subject marker, T = theme- or patient-like argument of a ditransitive verb, VBLZ = verbalizer, WCO = weak crossover.

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A LANGUAGES IN THE SAMPLE AND SOURCES

A.1 INDIRECTIVE CASE AND INDIRECTIVE AGREEMENT ALIGNMENT (ICIA) Hungarian (Uralic; personal knowledge), Kapampangan (Austronesian; Mirikitani 1972:91, 116, 170, 195–96, Mithun 1994:249–50), Mekens (Tupian; Galucio 2001:82), Moksha (Uralic; Toldova 2018 and Masha Privizentseva, p.c.), Puinave (Puinave; Girón 2008:320, 351, Birchall 2014:62–63), Tiriyo (Cariban; Meira 1999:512–15), Xavante (Macro-Ge; Estevam 2011:177), Yanomama (Yanomam; Ferreira 2017:395, 407, 408–9, 423, 435, 506).

A.2 INDIRECTIVE CASE AND SECUNDATIVE AGREEMENT ALIGNMENT (ICSA) Alutor (Chukotko-Kamchatkan; Mel'čuk 1988, Bobaljik and Wurmbrand 2002), Amharic (Afro-Asiatic; Baker 2012), Anindilyakwa (Gunwinyguan; Leeding 1989:305–7, 315, 334, 361, 398, 400, 413–14, 414, 501), Arammba (Yam; Reesink 2013a:228–30), Bantawa (Sino-Tibetan; Doornenbal 2009:143, 180, 201, 215), Bawm (Sino-Tibetan; Reichle 1981:24–25, 93, 103, 122, 149, 157–58, 161), Burushaski (Burushaski; Baker 2018) Chukchi (Chukotko-Kamchatkan; Mel'čuk 1988, Dunn 1999, Bobaljik and Wurmbrand 2002), Gidar (Afro-Asiatic; Frajzyngier 2008:174–85), Hyow (Sino-Tibetan; Peterson 2003:179), Ika (Chibchan; Frank 1985:28, 67, Landaburu 1992), Itelmen (Chukotko-Kamchatkan; Bobaljik and Wurmbrand 2002), Jingulu (Mirndi; Pensalfini 2003:105–9, 212–14, 216–20), Kanuri (Saharan; Hutchison 1981:93, 117, 134–38, Fougou and colleagues 1986, Cyffer 1978:305–8), Komnzo (Yam; Döhler 2018:204–7, 227, 229, 294, 317), Koryak (Chukotko-Kamchatkan; Abramovitz 2020, 2021, p.c.), Kwomtari (Kwomtari-Baibai; Spencer 2008:109–10), Mauwake (Trans-New Guinea; Berghäll 2015:162–64, 260–62), Menya (Trans-New Guinea; Whitehead 2006:22–25, 84), Miskito (Misumalpan; Salamanca 2008:106), Ngkolmpu (Yam (Morehead-Maró); Carroll 2016:148–49), Podoko (Afro-Asiatic; Jarvis 1989:90, 103), Quechua (Yauyos) (Quechuan; Shimelman 2017:48, 138, 141, 143, 145, 147, 153), Rembarnga (Gunwinyguan; McKay 1975:126–27, 143, 258–61, 263, 297–98), Warlpiri (Pama-Nyungan; Legate 2002:170–75).

A.3 SECUNDATIVE CASE AND SECUNDATIVE AGREEMENT ALIGNMENT (SCSA) Aguaruna (Jivaroan; Overall 2007:120, 215, 444, Birchall 2014:63), Awa Pit (Barbacoan; Curnow 1997:73, 74, 76, 102),

Gitksan (Tsimshianic; Forbes 2018:129, 157, Brown and Forbes 2018:4, Clarissa Forbes, p.c.), Gorwaa (Afro-Asiatic; A. D. Harvey 2018:176), Kalaallisut (Eskimo-Aleut; Fortescue 1984), Hamtai (Trans-New Guinea; Oates and Oates 1968:45, 47, 62), Jaqaru (Aymaran; Hardman 1966:56, 79, 93, 103), Kham (Sino-Tibetan; Watters 1973:44, 46, 54, Dryer 1986:817, Watters 2002), Khanty (Eastern) (Uralic; F. Gulyás 2018:9), Khanty (Northern) (Uralic; Nikolaeva 1999, Dalrymple and Nikolaeva 2011:40), Kwaza (Kwaza; van der Voort 2004:106, 110, 112–13), Mansi (Northern) (Uralic; Bíró and Sipőcz 2017:46), Molalla (Molalla; Pharris 2006:138, 141, 188–89, 197–99, 205, 210, 243, 268, 277, 279–80, 305, 315), Movima (Movima; Haude 2006:276, 279, 329, 356, 404), Nez Perce (Sahaptian; Deal 2010, 2013, 2019), Nlaka'pamux (Salishan; Thompson and Thompson 1980:32), Selkup (Uralic; Wagner-Nagy and Szeverényi 2013:34), Squamish (Salishan; Kuipers 1967:233, 257, Kiyosawa 2006:50), Tsimshian (Coast) (Tsimshianic; Sasama 2001:40, 60, 267), Tukang Besi (Austronesian; Donohue 1999:47–50, 102–3), Tundra Nenets (Uralic; Nikolaeva 2014:236), Wari' (Chapacua-Wanham; Everett and Kern 1997:119), Yup'ik (Central) (Eskimo-Aleut; Miyaoka 2010).

A.4 NEUTRAL CASE AND SECUNDATIVE AGREEMENT ALIGNMENT (NCSA) Ainu (Ainu; Shibatani 1990:20, 26–27, 29, 56, 86), Alamlak (Sepik; Bruce 1979:299, 292, 300, 319–20, 351, 367), Apurinã (Arawakan; Facundes 2000:285, 287–92, Derbyshire 1986:474–76), Bagirmi (Central Sudanic; Stevenson 1969:92–93, 121, 133[17, 22, 25, 27, 33, 49–50, 57, 61, 67, 76]KeeganDjibrine2016), Barai (Trans-New Guinea; Olson 1974:20–21, 1975), Beja (Afro-Asiatic; Hudson 1964:331, 1976, Vanhove 2019:6), Bininj Gun-Wok (Gunwinyguan; Evans 1997), Chayahuita (Balsapuerto) (Cahuapanan; Rojas Berscia 2013:60), Chimariko (Hokan; Jany 2014:147, 152, 162, 163, 218), Chintang (Sino-Tibetan; Bickel and colleagues 2010:386–88), Choctaw (Muskogean; Broadwell 2006:44, 67, 73, 74, 115, 137, 154, 228, 342), Cree (Plains) (Algonquian; Dahlstrom 1986:116–17), Erromangan (Austronesian; Crowley 1998:36, 122, 124, 129, 159, 183, 202, 203, 273), Euchee (Yuchi) (Euchee; Linn 2001:142–43, 180–90, 198–200), Galela (West Papuan; Shelden 1991:165–66, 168), Gooniyandi (Bunuban; McGregor 1990:106, 153, 197–98, 216, 227, 334–35, 413–14, 416, 422, 532, 536, 546), Huichol (Uto-Aztecan; Comrie 1982:99, 108, Dryer 1986:815), Itonama (Itonama; Crevels 2010:690), Jaminjung (Mirndi; Schultze-Berndt 2000:180, 370–71, 2010:515), Jumjum (Nilotic; Andersen 2018, p.c.), Kalapuya (Santiam) (Kalapuyan; Banks 2007:13, 36, 80, 86–88, 92, 94), Karok (Karok; Bright 1957:60, 188–89, 208, 233), Keres (Laguna) (Keresan; Lachler 2006:27, 37, 140–63), Ket (Yeniseian; Nefedov and colleagues 2010:357, 358), Konjo (Austronesian; Friberg 1996:141–42, 160, 163–64, 167–68), Korumu (Kesawai) (Trans-New Guinea; Reesink 2013b:16–18, Priestley 2019:101–2), Maba (Maban; Weiss 2009:132, 163, 167, 170, 182, 236, 254, 256, 296, 362, 367, 419, 432, Dimmendaal 2010:23–24), Malakmalak (Northern Daly; Birk 1974:61, 170–73, 175–76, 184), Mangarrayi (Mangarrayi–Maran; Merlan 1989:64–65), Mapudungun (Araucanian; Golluscio 2010:723), Maricopa (Hokan; Gordon

1986:21, 27, 52, 108, 200), Mawng (Iwaidjan; Singer 2006:66, 102–3), Mosetén (Mosetenan; Sakel 2004:195), Motuna (East Bougainville; Onishi 1994:429, 14-108b, 2000: 134–137), Muna (Austronesian; van den Berg 1989:42, 50, 52, 68–70, 83, 124, 159, 175, 179, 256, 308, 314, 317), Mundari (Austro-Asiatic; Osada 1992:85–89, 93–94), Murle (Eastern Sudanic; Arensen 1982:48–49, 84, 106–7), Nabak (Trans-New Guinea; Fabian and colleagues 1998:26, 42–45, 47, 60, 104, 109, 142), Nahuatl (Huasteca) (Uto-Aztecan; Beller and Beller 1977:207 via Dryer 1986:842), Nahuatl (Orizaba) (Uto-Aztecan; Tuggy 1998:45–47), Nambikuára (Southern) (Nambikuaran; Lowe 1999:4, 12, 52–57, 59–60, Kroeker 2001), Nandi (Eastern Sudanic; Creider and Creider 1989:98, 169), Nasioi (East Bougainville; Hurd and Hurd 1970:64, 72), Ngalakan (Gunwinyguan; Merlan 1983:50, 77, 94, 96–97, 103, 162, 166), Oaxaca Chontal (Lowland) (Tequistlatecan; O'Connor 2007:32, 41–43, 207), Ojibwa (Central) (Algic; Rhodes 1976:139 via Dryer 1986:812), Palauan (Austronesian; Josephs 1975:96, 374, via Dryer 1986:816), Papapana (Austronesian; Smith-Dennis 2020:236), Pima Bajo (Uto-Aztecan; Estrada Fernández 2014:193–97), Pipil (Nawat) (Uto-Aztecan; Campbell 1985:55–56, 109–10), Sentani (Sentani; Cowan 1965:33, 57, 68, 70–71, 73), Tauya (Trans-New Guinea; MacDonald 1990:93, 114–15, 119, 121, 138, 154, 171–72, 216), Teop (Austronesian; Mosel 2010:488), Tepehuan (Northern) (Uto-Aztecan; Bascom 1982:274, 280, 287, 294, 301, 307, 313, 332, 346, 350, 357–58, 383, 386), Tigrinya (Afro-Asiatic; Nazareth 2007, 2011), Tiwi (Tiwian; Lee 1983:119, 230, 235–37, 240–41, 257, 287, 315, 341), Turkana (Eastern Sudanic; Dimmendaal 1982:124, 2009: 2–3, 6), Tzotzil (Mayan; Aissen 1983:277, 280, via Dryer 1986:818), Wambaya (Mirndi; Nordlinger 1998:137–40), Wampis (Jivaroan; Peña 2015:428), Waray (Gunwinyguan; M. Harvey 1986:169–70), Wardaman (Yangmanic; Merlan 1994:66–67, 84, 86, 89, 96–97, 109, 111, 136, 141, 180, 183, 187–88, 192, 197, 212, 217, 230, 235, 240–41, 250–51, 294, 302, 306–7, 310, 313–14, 322, 341, 360, 365, 380, 379, 394–95, 404, 457, 460, 463–64, 467–68, 470–71, 509–10, 516, 535, 542–44, 565, 571–73), Wichi (Matacoan; Terraza 2009:225–27), Yakkha (Sino-Tibetan; Schackow 2015:338–41), Yanesha' (Amuesha) (Arawakan; Duff-Tripp 1997:35, 63, 172, 217), Yukulta (Tangkic; Keen 1983:216, 236, 244), Yurok (Algic; Robins 1958:73, 77), Zulu (Niger-Congo; Adams 2010, Halpert 2012:176, 232, Zeller 2012, 2015).

B LANGUAGES WITH ALTERNATIONS GIVING RISE TO NON-LOCAL AGREEMENT

Language	Alignment	Trigger	Source
Alutor	ICIA / ICSA	Person	Meľčuk (1988)
Arammba	ICIA / ICSA	Salience	Reesink (2013a:228–30)
Bantawa	ICIA / ICSA	Predicate	Doornenbal (2009:143, 180, 201, 215)
Burushaski	ICIA / ICSA	Predicate	Baker (2018)
Chukchi	ICIA / ICSA	Person	Meľčuk (1988) and Bobaljik and Wurmbrand (2002)
Gidar	ICIA / ICSA	Predicate	Frajzyngier (2008:174–85)
Ika	ICIA / ICSA	Person (animacy?)	Frank (1985:28, 67) and Landaburu (1992)
Itelmen	ICIA / ICSA	Salience	Bobaljik and Wurmbrand (2002)
Koryak	ICIA / ICSA	Person	Abramovitz (2020, 2021)
Ngkolmpu	ICIA / ICSA	Predicate	Carroll (2016)
Jaminjung	NCSA / NCIA	Empathy (salience?)	Schultze-Berndt (2000:180, 370–71, 2010:515)
Tigrinya	NCSA / NCIA	Salience	Nazareth (2007, 2011)
Zulu	NCSA / NCIA	Salience	Adams (2010), Halpert (2012:176, 232), and Zeller (2012, 2015)

Table 5 List of languages with agreement alternations giving rise to non-local agreement