Realigning alignment: The completeness typology applied to case marking in Jê languages

Abstract

We analyse case marking in the Jê language family (Brazilian Amazonia) with the new completeness alignment typology proposed by Lindenbergh & Zwart (2017). In contrast with classical alignment typology, the completeness typology first determines whether all grammatical functions participate in a grammatical process (e.g. case marking) and only then determines how these grammatical functions are aligned, adding nine incomplete alignment types to the five types of classical alignment typology. Nine of the ten Jê languages are classified as split-ergative, while Panará is seen as fully ergative, making it a typologically odd language within the family. We show that applying the completeness typology to Jê languages more accurately describes the true variation in case-marking patterns across the Jê language family.

Keywords: case marking, alignment, typology, syntax, Jê languages

1 Introduction

This paper discusses a new alignment typology that takes into account paradigm *completeness* and uses it to analyse case marking in the Jê language family. In doing so, we illustrate the workings of the new typology and the advantage of adopting it, while at the same time we give a more fine-grained description of Jê case marking than is available in previous literature on the topic.

When talking about alignment, we look at how languages group the grammatical functions (GFs) of *transitive subject* (S^T), *intransitive subject* (S^I), and *direct object* (O).[1] Since the 1970s, research on alignment has focused on the differences between the ergative-absolutive and nominative-accusative alignment types from classical alignment typology as proposed most notably by Dixon (1972, 1994) and Comrie (1978), see (1).

(1) *Standard alignment typology*

a. Neutral = all GFs behave the same

b. Nominative-accusative = O behaves differently from S^T and S^I

c. Ergative-absolutive = S^T behaves differently from S^I and O

d. Tripartite = all GFs behave differently

e. Double-oblique = S^I behaves differently from S^T and O

As discussed in recent literature (e.g. Deal 2016, DeLancey 2004, Queixalós 2013), alignment patterns are rarely as clear-cut as the typology in (1) suggests. Lindenbergh & Zwart (2017) add to this discussion by illustrating that not all GFs

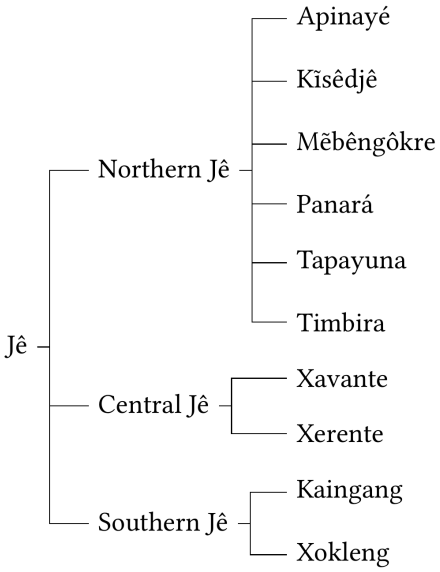
1. In literature on alignment the transitive subject is usually referred to as A, the intransitive subject as S and the object as O or P, but we use the theoretically more neutral abbreviations given here.

necessarily participate in grammatical processes involved in determining alignment. To capture this they propose the *completeness typology of alignment.* This typology adds a number of types to the alignment types in (1) providing us with a more fine-grained system to better capture what is actually happening in language's case and agreement systems.

The ten extant Jê languages to which we apply the completeness typology are spoken in a vast extension of Brazil, from the tropical forests east of the Amazon river to the country's southernmost provinces. Ergativity is considered an important trait of the Jê family, and as such Jê case marking has received a great deal of attention (Rodrigues 1999).

The family is subdivided into three branches: Northern Jê, Central Jê and Southern Jê (Davis 1966, Rodrigues 1999) (2).

(2) *Internal classification of the Jê family*



In Jê languages, clauses contain either a *nominal* or *verbal* form of the predicate

head with different alignment patterns associated with both forms. Broadly speaking, the *verbal* form is associated with main clauses and the *nominal* form with various types of dependent clauses. This gives rise to an alignment split with accusative alignment patterns in verbal forms and ergative alignment patterns in nominal forms (Salanova 2017, Bardagil 2018).

Section 2 introduces the completeness alignment typology. Section 3 discusses the results of applying the typology to the Jê language family and gives examples of various alignment patterns in Kĩsêdjê, Mẽbêngôkre, and Panará. Section 4 concludes the paper.

2 The completeness alignment typology

In this section we discuss the completeness typology of alignment from Lindenbergh & Zwart (2017). By comparing the alignment of case in the Jê language Xavante with that of Niuean (Austronesian), we illustrate the need for the completeness distinction made by Lindenbergh & Zwart to properly describe alignment systems in Jê.

As is typical for all Jê languages, alignment in Xavante varies depending on the properties of the predicate (Estevam 2011). Based on classic alignment typology, Xavante is analysed as a split-ergative language, with nominative-accusative alignment of pronominal forms associated with the verbal form (3), and ergative-absolutive alignment on lexical noun phrases in environments with the nominal form (4).[2]

2. We use the following abbreviations in the glosses: 1 = first person, 2 = second person, 3 = third person, ABS = absolutive, ACC = accusative, ALL = allative, DAT = dative, ERG = ergative, EXPL = expletive, FACT = factual, INES = inessive, INTR = intransitive, IRR = irrealis, N = nominal form, NEG = negative, NFUT = non future, NOM = nominative, PRF = perfect, PROSP = prospective, Q =

(3) a. wa wi

1NOM arrive.V

'I have arrived.'

b. wa za ti= ö

1NOM PROSP 3ACC take.V

'I will take it.' (Estevam 2011: 177, 205)

The examples in (3) show us the pronominal paradigm used with the verbal form: the same pronominal form *wa* indexes S^I and S^T, while a different form *ti* is used for O, the hallmark of nominative-accusative systems.

(4) a. e ĩĩ= rada tô wi?

Q 1SG.ABS grandmother already arrive.N

'Did my grandmother already arrive?'

b. wapsã te ĩĩ= ʔrãmi õ di

dog ERG 1SG.ABS frighten.N NEG EXPL

'The dog didn't frighten me.'

c. te ĩĩ= ma ti= nha [ĩhi ∅ te wapari da]

3SG.NOM 1SG DAT 3SG say.V old.man 1SG.ERG ERG listen.N TRSL

'He tells me to listen to the old man.' (Estevam 2009: 5, 227)

The occurrence of the ergative marker *te* on lexical noun phrases in dependent clauses in (4) is described as ergative-absolutive based on classic alignment typology, but if we look closely at these examples we see a difference between the

interrogative, SBJV = subjunctive, SG = singular, TOP = topic, TRSL = translative, V = verbal form.

alignment systems used with the verbal form and the nominal form that traditional typology does not capture.

This difference is manifested in the fact that in (3) all GFs participate in the case-marking process and have a dedicated pronominal form, while in (4) this is not the case. In fact, the only GF that has a dedicated case marker is the S^T, no markers appear with the other GFs. This is different from Niuean, which is also classified as ergative-absolutive, but where all GFs are accompanied by a dedicated case marker, and the marker for S^T is different from the one used to cross-reference both S^I and O (5).[3]

(5) a. kua kamata [ke hala **he** tama **e** akau]
PRF begin SBJV cut ERG child ABS tree
'The child has begun to cut down the tree.

b. maeke [ke nofo **a** Pita i Tuapa]
possible SBJV stay ABS Pita at Tuapa
'Pita can stay at Tuapa.' (Legate 2008: 64)

The difference between the ergative-absolutive system in Xavante and the one found in Niuean is a difference in *completeness* of paradigm that is not represented in standard alignment typology, but is the central trade of Lindenbergh & Zwart's (2017) new typology, which is introduced in table 1.[4]

3. The absolutive marker *a* is an allomorph of *e* which is used with proper names and pronouns.
4. The alignment type where only O participates is called *objective* in Lindenbergh & Zwart's (2017), but to make it more in line with the other names, we changed it to *narrow accusative*.

	Participating GFs	Alignment of GFs	Type name
Complete types	$S^T/S^I/O$	$S^T = S^I = O$	identical
	$S^T/S^I/O$	$S^T = S^I \neq O$	accusative
	$S^T/S^I/O$	$S^T \neq S^I = O$	ergative
	$S^T/S^I/O$	$S^T = O \neq S^I$	intransitive
	$S^T/S^I/O$	$S^T \neq S^I \neq O$	tripartite
Incomplete types	S^T/S^I	$S^T = S^I$	subjective
	S^T/S^I	$S^T \neq S^I$	asymmetric subjective
	S^I/O	$S^I = O$	absolutive
	S^I/O	$S^I \neq O$	asymmetric absolutive
	S^T/O	$S^T = O$	transitive
	S^T/O	$S^T \neq O$	asymmetric transitive
	O	–	narrow accusative
	S^T	–	narrow ergative
	S^I	–	narrow intransitive
	none	–	neutral

Table 1: The completeness alignment typology.
Adapted from Lindenbergh & Zwart (2017).

By first looking at which GFs participate in a certain grammatical process (case-marking, agreement, etc.) and only then looking at how these participating elements are aligned, nine new incomplete alignment types are described, next to the five well-known complete types.[5]

Using this typology we can now properly describe the difference between Xavante and Niuean. In Xavante case marking in nominal form environments,

5. In the original proposal by Lindenbergh & Zwart (2017) there are twelve incomplete types, due to the fact that markedness plays a role in their typology. Every asymmetric incomplete type is divided in two types in the original proposal, e.g. instead of *subjective* and *asymmetric subjective* as the two incomplete types where only S^T and S^I participate, Lindenbergh & Zwart have the following types: $S^T = S^I$ *subjective*, $S^T > S^I$ *transitive subjective*, and $S^T > S^I$ *intransitive subjective*, where '< >' indicates more or less morphological markedness. We feel this markedness distinction is not a crucial part of the typology. Furthermore, it is not relevant to alignment in Jê languages, hence our adaptation of the typology conflates these types into one asymmetric type for all the patterns where only two GFs participate.

only one GF participates, so we have an incomplete type. Looking at table 1 we see that we are dealing with the *narrow ergative* type, because the S^T is singled out. Niuean case marking on the other hand follows a complete *ergative* alignment.

These examples illustrate the advantages of Lindenbergh & Zwart's (2017) typology based on completeness of paradigm. Let us explain the typology some more. The complete types are the familiar types of classical alignment typology, with the exception that there is a new distinction between *neutral* and *identical*, and different names for the familiar types. In the incomplete types where two GFs participate there are two options (cf. footnote 5), either the GFs behave the same or they behave differently, resulting in two different alignment types, e.g. the *absolutive* or the *asymmetric absolutive*.

Important to note is that in determining alignment with this fine-grained typology, we look at particular grammatical processes, such as case-marking on lexical noun phrases, the pronominal paradigm, or verbal agreement. The goal is not to classify entire languages based on one of their alignment patterns as it is sufficiently demonstrated in the literature, most notably by DeLancey (2004), that the search for an ergative or accusative system or even parameter is not in line with the variety found in the data.

3 Realigning Jê languages

The completeness typology of alignment introduced in the preceding section provides enough flexibility to target specific grammatical processes as the variables to which to apply the typology. In this section, we look at alignment in the entire Jê family through the lens of the new typology.

In Jê languages, the lack of verbal agreement with participants makes verbal agreement an uninformative grammatical process.[6] As such, verbal agreement is left out of this study, even though it would be a priority variable for a set of languages in which it is present.

The three processes that we examine in light of the completeness alignment typology are (a) case marking on lexical noun phrases, (b) case syncretism in pronominal paradigms, and (c) dedicated case morphology on pronouns. Syntactic alignment in Jê languages is too poorly described at this stage to include it in this analysis.

The results of applying the completeness typology to the case marking alignment of Jê languages in the three targeted grammatical processes are summarized in table 2.[7] For every language, we identify the alignment types in both verbal (V) and nominal (N) environments, or realis (RL) and irrealis (IRR) for Panará.

6. Instead, cross-reference morphology on verbs is cliticization of weak pronouns.

7. The main sources of linguistic data for the information reflected in the table are the following. Kaingang: Wiesemann (1986) and Nascimento (2017). Xokleng: Urban (1985). Xavante: Estevam (2011). Xerente: Sousa Filho (2007). Mẽbêngôkre: Salanova (2007). Apinayé: Oliveira (2005). Kĩsêdjê: Nonato (2014) and Santos (1997). Tapayuna: Camargo (2015). Timbira: Alves (2004). Panará: Bardagil (2018). Where the available data are not sufficient to commit to a decision, we indicate it with a question mark.

			Case marking		
			Lexical NPs	*Pronoun paradigm*	*Pronoun marking*
Southern	**Kaingang**	V	subjective	identical	subjective
		N	narrow ergative	identical	narrow ergative
	Xokleng	V	subjective	accusative	subjective
		N	narrow ergative	identical	narrow ergative
Central	**Xavante**	V	neutral	accusative	neutral
		N	narrow ergative	ergative	narrow ergative
	Xerente	V	neutral	?	?
		N	narrow ergative	?	?
Northern	**Mẽbêngôkre**	V	neutral	accusative	neutral
		N	neutral	ergative	neutral
	Apinayé	V	neutral	accusative	neutral
		N	neutral	ergative	neutral
	Kĩsêdjê	V	subjective	accusative	neutral
		N	subjective	ergative	neutral
	Tapayuna	V	subjective	accusative	neutral
		N	subjective	ergative	neutral
	Timbira	V	neutral	accusative	neutral
		N	narrow ergative	identical	narrow ergative
	Panará	RL	narrow ergative	identical/ergative	narrow ergative
		IRR	narrow ergative	identical/tripartite	narrow ergative

Table 2: Case marking typology of Jê languages.

Upon closer examination of table 2, we see that all Jê languages present an alignment split, but that classifying the family as just split-ergative obscures the actual variation in alignment patterns. In Southern Jê we find only *narrow ergative* patterns and only with case marking on lexical noun phrases, whereas in Northern Jê we do find complete *ergative* patterns, but then only within the pronominal paradigm.

In the Jê literature, Panará is set apart as an outlier. While it is correct for verb-finality and the lack of nominal clausal environments, when it comes to case marking, the completeness typology frames Panará within a wider variety

of alignments, making its lack of alignment split less of an exception within the family, see section 3.3. Table 2 reveals that the identical alignment of the Panará strong pronoun paradigm is not an exception, and neither is the narrow ergative case marking on Panará pronouns and lexical noun phrases. In that respect, Panará is just like Southern Jê and Timbira in their nominal predicate contexts.

The completeness alignment types furthermore give rise to a more articulated subdivision of the Northern Jê branch. For instance, we observe converging patterns in Mẽbêngôkre and Apinayé, as well as in Kĩsêdjê and Tapayuna. Thus, the typology of case marking alignment could be argued to support grouping these languages in sub-branches of their own within Northern Jê.

Table 2 illustrates the results for three case-marking processes, but we see that the *Lexical NPs* and *Pronoun marking* columns present the same alignment types for all languages. This shows that if pronouns have case marking on top of the pronominal paradigm, this marking patterns with the marking on lexical noun phrases. While this might feel like an obvious result, it is interesting to see, for example in Xokleng, that the pronominal paradigm has *accusative* alignment while case marking appearing together with these pronouns is *subjective*. Discerning case on pronouns and alignment of the pronominal paradigm can furthermore shed light on diachronic developments of case marking. Ergative patterns are disappearing in Northern Jê (with the exception of Panará), and looking at the third column we see that while Kĩsêdjê and Tapayuna still retain case marking on lexical noun phrases, the marking of pronouns is already lost, just like in Mẽbêngôkre and Apinayé.

In the remainder of this section we look closely at some examples to examine the alignment typology of Jê case marking in more detail. For reasons of data

availability, this discussion is focused on Kĩsêdjê, Mẽbêngôkre, and Panará. Because the case on lexical noun phrases and the pronoun marking shows the same patterns, we only exemplify case on lexical noun phrases in the next sections.

3.1 Kĩsêdjê alignment

We start by examining the case marking alignment in Kĩsêdjê in the two major clausal environments present in Jê languages, verbal predicates and nominal predicates. In a clause where the predicate head appears in its verbal form, the case marking on lexical noun phrases is an incomplete type: only S^T and S^I receive case marking, with the morpheme *ra*, making its alignment *subjective*, see (6).

(6) a. ∅ i nã ra mbârâ
FACT 1SG mother NOM cry.V
'My mother cried.'

b. ∅ i nã ra khu= ku
FACT 1SG mother NOM 3SG.ACC eat.V
'My mother ate it.'

c. hẽn ∅ i= nã (*ra) mu
FACT 3SG.NOM 1SG mother NOM see
'He saw my mother.' (Nonato 2014: 3, 104)

Case exponence on pronouns presents a different alignment from the one seen in lexical noun phrases. Kĩsêdjê pronouns have syncretic forms that index case as well as person and number, and they do so in an *accusative* alignment (7).

(7) a. ka ngre

2SG.NOM dance.V

'You danced.'

b. tu'te- n ka ku= py.

bow TOP 2SG.NOM 3SG.ACC take.V

'You took the bow.' (Santos 1997: 47, 48)

Moving on to nominal predicates, the case marking on pronominal participants is expressed syncretically with the pronominal paradigm. A paradigm of strong pronouns is used for the S^T argument, while a paradigm of clitic pronouns is used for S^I and O. This is a complete alignment of the *ergative* type (8).

(8) a. [i= ngere] kere

1SG.ABS dance.N NEG

'I don't dance.'

b. [ire a= kaken] kere

1SG.ERG 2SG.ABS scratch.N NEG.

'I didn't scratch you.'

c. [kôre i= kaken] kere

3SG.ERG 1SG.ABS scratch.N NEG

'He didn't scratch me.' (Santos 1997: 66, 161, 132)

In nominal form environments, the ergative case marker *re* seen in ergative pronouns is in free variation with the nominative case marker *ra* (Nonato 2014: 104), and the alignment of case on lexical noun phrases corresponds to the *subjective*

type observed in verbal predicates (9).[8]

(9) a. [biãka ra nõrõ] khere
Bianka NOM sleep.N NEG
'Bianka didn't sleep.' (Santos 1997: 72)

b. hẽn ∅ [i= nã re/ra ∅= khuru]
FACT 3SG.NOM 1SG.NOM mother ERG 3SG.ABS eat.N
khãm s= õmu
INES 3SG.ABS see.V
'He saw my mother eating it.' (Nonato 2014: 104)

c. [ire hwĩ'ngro janthoro] khere
1SG.ERG firewood hang.N NEG
'I didn't hang the firewood.' (Santos 1997: 56)

Summing up, Kĩsêdjê case marking in verbal predicates is indexed with a complete *accusative* alignment on pronoun paradigms, while lexical noun phrases are case-marked with a dedicated nominative morpheme in a *subjective* alignment. In nominal predicates, lexical noun phrases show the same *subjective* alignment as in verbal predicates, while pronouns present case marking in a complete *ergative* alignment.

3.2 Mẽbêngôkre alignment

In Mẽbêngôkre, lexical noun phrases are never marked for case, resulting in *neutral* alignment in both clauses with verbal and nominal predicates, see (10)-(11).

8. Kĩsêdjê ergative pronouns: 1SG.ERG *ire*, 2SG.ERG *kare*, 3SG.ERG *kôre* (Nonato 2014: 102).

(10) a. angrô nê mã mõ
peccary NFUT away run.V
'The peccary ran away.'

b. rop nê angrô krẽ
jaguar NFUT peccary eat.V
'The jaguar ate the peccary.' (Bardagil 2018: 47)

(11) a. [Angrô mõro] kêt.
peccary run.N NEG
'The peccary did not run.'

b. ba nẽ ba [rop kukryt bĩr] omũ
1SG.NOM NFUT 1SG.NOM jaguar tapir kill.N see.V
'I saw the jaguar that killed a tapir.' (Bardagil 2018: 49, 52)

However, case marking is expressed in the pronominal paradigms, where in verbal predicates, one pronominal form is used for S^I and S^T, while a different paradigm is used for O, which corresponds to a complete *accusative* alignment (12).

(12) a. ba keke
1SG.NOM laugh.V
'I laugh.'

b. ba a= pumũ
1SG.NOM 2SG.ACC see.V
'I see you.'

c. ga i= bĩ
2SG.NOM 1SG.ACC kill.V
'You killed me.' (Bardagil 2018: 45)

In clauses with nominal predicates, pronominal paradigms also index case. While one pronoun form is used for S^T, a different one is used for S^I and O, resulting in a complete *ergative* alignment (13).

(13) a. [i= keket] kêt
1SG.ABS laugh.N NEG
'I don't laugh.'

b. [ije a= pumuj] kêt
1SG.ERG 2SG.ABS see.N NEG
'I don't see you.'

c. [aje i= pumuj] kêt
2SG.ERG 1SG.ABS see.N NEG
'You don't see me.' (Bardagil 2018: 49)

Mẽbêngôkre case marking differs from Kĩsêdjê in that lexical noun phrases are always *neutral* for case marking. Pronouns index case with syncretic forms, that present a complete *accusative* alignment in verbal predicates and a complete *ergative* alignment in nominal predicates.

3.3 Panará alignment

Panará deviates from the other Jê languages in that verbs do not alternate between a verbal and nominal form. Instead, mood plays a role in Panará alignment, specif-

ically in the case of pronominal clitics.

Panará is a polysynthetic Jê language, where arguments are always clitic-doubled on the predicate head. Unlike the previously examined Northern Jê languages, Panará free pronouns are impervious to case. There is a single paradigm of strong pronouns for S^T, S^I and O (14). This means that in Panará the pronominal paradigm has an *identical* alignment type.

(14) a. mãra jy= ∅= tẽẽ
3SG INTR 3SGABS fall
'He fell down.'

b. mãra hẽ ti= ∅= sisyri mãra
3SG ERG 3SGERG 3SGABS hit 3SG
'He hit him.' (Bardagil 2018: 74)

In the case of lexical noun phrases, a *narrow ergative* case marking alignment is observed. S^I and O receive no case marking, and S^T is marked with *hẽ* (15). We see the same marker appear with pronominal S^T in (14).

(15) a. jy= ∅= pôô kwakriti
INTR 3SG.ABS arrive spider-monkey
'The spider-monkey arrived.'

b. joopy hẽ ti= ∅= krẽ swasĩrã
jaguar ERG 3SG.ERG 3SG.ABS eat w.l.peccary
'The jaguar ate a white-lipped peccary.' (Bardagil 2018: 75, 78)

Clitic pronouns present a more complex behaviour. In realis mood, they have a form that doubles S^T, and a different form that doubles both S^I and O. This is a

complete *ergative* alignment (16).

(16) a. inkjẽ jy= ra= pôô
1SG INTR 1SGABS arrive
'I arrived.'

b. inkjẽ hẽ rê= a= nsari ka
1SG ERG 1SG.ERG 2SG.ABS bite 2SG
'I bit you.'

c. mãra hẽ ti= ra= nsari inkjẽ
3SG ERG 3SG.ERG 1SG.ABS bite 1SG
'He/she bit me.' (Bardagil 2018: 74, 75)

Moving on to irrealis mood, the only difference with the situation as described for realis mood is the behaviour of clitics. In irrealis, clitics present a *tripartite* alignment, with a complex exponence paradigm for S^I that does not coincide with the clitics that double either S^T or O, illustrated for second person in (17).

(17) a. ka ka= ti= a= tẽri Sõkãrâsã tã
2SG IRR 2SG.IRR 2SG.ABS leave Sõkãrâsã ALL
'You'll go to Sõkãrâsã.'

b. ka hẽ ka= ti= ∅= pĩri swasĩra
2SG ERG IRR 2SG.IRR 3SG.ABS kill peccary
'You'll kill a peccary.'

c. inkjẽ hẽ ka= ∅= a= sisyri ka

1SG ERG IRR 1SG.IRR 2SG.ABS hit 2SG

'I will hit you.' (Bardagil 2018: 83, 84)

As seen above, the second person S^I argument in (17a) is doubled by two clitics, a multiple exponence mechanism that does not coincide with the cross-reference of second person S^T arguments (17b) or second person O arguments (17c), which are only doubled by one clitic.

This results in a *tripartite* alignment in irrealis mood for case exponence on clitics. In realis mood, clitics have a complete *ergative* alignment. In all contexts, Panará strong pronouns have *identical* alignment, while both strong pronouns and lexical noun phrases present a *narrow ergative* alignment for the marking of case with a dedicated morpheme.

4 Conclusion

In this paper we used the completeness alignment typology proposed by Lindenbergh & Zwart (2017) to analyse case marking in the entire Jê language family. The results of this analysis have shown that, while these languages are traditionally described as presenting an ergative/accusative alignment split (Alves & Gildea 2016, Salanova 2017), they emerge as presenting a higher complexity of alignment patterns with some previously unexpected regularities.

While the more abstract alignment patterns were previously attested for Jê languages, the innovations of the completeness typology proved crucial in revealing more fine-grained alignment patterns. Only by taking into account completeness

of paradigm could we adequately capture the alignment patterns as well as the nature of the morphosyntactic expression of said alignment. As can be seen in table 2, the focus on applying the typology to grammatical processes that are as narrowed down as possible—in this paper, case marking in Jê language was split into three different processes—revealed different alignment patterns within languages which would otherwise have stayed hidden. Having identified all these patterns, new generalizations emerged (e.g. the predictability of the case marked via syncretism on pronominal paradigms) and divergences were uncovered where none had been observed before (e.g. the distribution of *narrow ergative* alignment both in the Jê family as a whole and in the Northern branch in particular).

These results can be considered as evidence that the distinctions captured by the new typology correspond to meaningful aspects of the alignment patterns in the world's languages. This makes the completeness typology a useful tool for descriptive work, ensuring that the data available for a specific language are sufficient for the level of detail required in linguistic analysis.

We believe that the insight obtained from applying the completeness typology to case marking in Jê advocates for the adoption of this approach in all research focused on alignment typology more broadly.

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