

## THE PANARÁ CLAUSE AND THE EMERGENCE OF POLYSYNTHESIS IN THE JÊ LANGUAGE FAMILY\*

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BERNAT BARDAGIL  
GHENT UNIVERSITY

**ABSTRACT** This article presents the syntactic reconstruction of the development of a highly synthetic morphosyntax in Panará, a Jê language spoken in Brazilian Amazonia. Languages of the Jê family present a characteristically analytic morphosyntax, with an ergative-accusative alignment split, and a templatic verb-final clause. Panará, while clearly a Jê language in all other respects, presents strikingly non-Jê morphosyntax, being polysynthetic, uniformly ergative, and verb-medial, differences which have often been attributed to external influences from a non-Jê language in an intense contact scenario. I lay out a diachronic reconstruction of an innovation of head movement of the verb to INFL, which in turn triggered generalized cliticisation of phrasal heads on INFL, leading to polysynthogenesis.

### 1 INTRODUCTION

How does a polysynthetic clause structure emerge in an analytic language family? This article addresses this question by looking at Panará, a language of the Jê family spoken in Brazilian Amazonia.

When anthropologist Richard Heelas started to study Panará society as part of his doctoral dissertation at the University of Oxford (Heelas 1979), the social and political situation of this indigenous nation was dire. Up until then, the Panará (*panära* /panära/, “those that are”) lived in the north of the Brazilian state of Mato Grosso and over its northern border with the state of

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Pará, in southern Amazonia; see Figure 1 below. In the mid-20th century, the large forest area between the Cachimbo mountain range and the Peixoto river was occupied by a population of approximately 700 Panará, who lived in up to nine different villages (Schwartzman 1988).



Figure 1. Location of the Panará in the 20th century.  
Map created using QGIS.

As a result of a government decision to build a highway through this part of Amazonian forest, and to open up the territory for agricultural colonization, an expedition of veteran *indigenistas* was sent to make contact with the shy and sometimes violent indigenous nation living there. Peaceful contact was established with a group of Panará in 1973. One year later, the waves of epidemics from the road construction workers and the contact expedition members had decimated the Panará, who were down to 67 survivors, all of them extremely ill and demoralized.

Richard Heelas met the Panará survivors in 1975, when they were living in exile in the Xingu Indigenous Park, among other Amazonian indigenous nations, having been removed from their land in what is today a questioned decision. Heelas also studied the Panará language (*panārapëë* /panārapëë/), and his intuition led him to compare Panará with the vocabulary lists of a vanished language that had been spoken more than 1000 kilometers south-east from the land of the Panará. Known in colonial times as the Southern

Cayapó (Giraldin 1997), this nation had been raided, conquered, and settled in missions. By the end of the 19th century there were no more Southern Cayapó (Lowie 1946: 519), or so it was thought for a long time. Still, some travellers like Johann Emanuel Pohl or Auguste Saint-Hilaire had collected word lists of their language. The comparison quickly presented Heelas with a striking reality: the Southern Cayapó had spoken Panará.

Panará soon became the newest member of the Jê language family, an inclusion further supported by later studies (Rodrigues & Dourado 1993). The Jê languages, a medium-sized family of ten living languages spoken in central and southern Brazil, are quite characteristic in their morphosyntax. Hallmarks of Jê grammar include a strict verb-final clause, a minimal verbal word, well-defined clausal positions, and a split accusative-ergative alignment system. There is one notable exception to this scenario: Panará, the one and only polysynthetic, verb-medial, and uniformly ergative Jê language.

In jêologist circles, I have encountered a general sense that Panará underwent this major typological change as a result of intense language contact with speakers of a non-Jê polysynthetic indigenous language (Flávia Alves; Rafael Nonato; Andrés Salanova; p.c.), usually as expressed in (1).

- (1) “Panará [...] is a linguistic outlier in Northern Jê, and it has possibly been quite altered by contact with (unidentified) non-Jê languages.” (Dourado & Gildea 2008)

The goal of this article is to throw light on the question of how the non-Jê properties of Panará syntax emerged, in a transition from analytic to highly synthetic that constitutes a major typological change. More specifically, I address the following questions:

- i. Is it possible to show or to rule out language contact as being responsible for the emergence of Panará polysynthesis?
- ii. Could Jê morphosyntax alone lead to polysynthogenesis?
- iii. Does Panará present other, independent traces of intense language contact?

After this introductory section, Section 2 lays out the relevant data of Panará and other Jê languages and presents the diachronic puzzle of Panará polysynthesis. Section 3 proposes a syntactic reconstruction of the Proto-Panará clause, and the diachronic path towards the emergence of a clause-medial polysynthetic verbal complex. In Section 4 I look at whether evidence

of intense language contact is attested elsewhere in the Panará language, and Section 5 concludes the article.

As for the Panará people, after years of fierce struggle to return to their homeland they succeeded in the 1990s. Assisted by anthropologists and local NGOs, they established an officially protected indigenous reservation on the Iriri river, where today's 700 Panará live and thrive in several different villages.

## 2 PANARÁ AND JÊ MORPHOSYNTAX

### 2.1 *The Panará clause*

Polysynthesis has been the object of multiple attempts of formalizing and motivating its properties. Perhaps the most well-known approach is Baker's (1996) study of Mohawk-Kanien'kéha polysynthesis, which largely focuses on the non-configurational properties of many polysynthetic languages. While a polysynthetic language often also presents a non-configurational grammar, that is not always the case. Panará, while presenting a polysynthetic profile, is not a non-configurational language. Phrasal constituents can and do occupy argument positions, and they are subject to binding constraints, such as Condition C,<sup>1</sup> as seen in examples (2–3).<sup>2</sup>

(2) *Pôka<sub>i</sub> hẽ ti= Ø = syri m̃ara<sub>j</sub>.*  
 Pôka ERG 3SG.ERG 3SG.ABS hit 3SG  
 'Pôka<sub>i</sub> hit him<sub>j</sub>.'

(3) \**Pôka<sub>i</sub> hẽ ti= Ø = syri m̃ara<sub>i</sub>.*  
 Pôka ERG 3SG.ERG 3SG.ABS hit 3SG  
 \*'Pôka<sub>i</sub> hit him<sub>i</sub>.'

This article will therefore not address the issue of non-configurational grammars, or adopt an approach similar to Baker's Polysynthesis Parameter. The focus is, instead, on the diachrony of the emergence of an extremely synthetic verbal morphosyntax. Polysynthesis is usually approached as a cluster

1 Binding Condition C: A given NP must be interpreted as non-coreferential with any distinct non-pronoun that it c-commands (Chomsky 1981, Reinhart 1983).

2 Panará examples use the current Panará spelling conventions, with nasality marked on vowels by a diaeresis. Unless otherwise specified with a bibliographic citation, Měbêngôkre and Panará language examples were collected by the author during fieldwork between 2014 and 2023. When a language other than Panará is shown in a language example, the name of the language is indicated next to it. A few example glosses are adapted in this article to match the glossing of cognates in other Jê languages.

of properties located at the synthetic end of the synthesis spectrum. For the purposes of this investigation, I adopt a classic operationalization of polysynthesis:

- (4) “Polysynthesis is not a homogeneous principle of language structure, but comprises a range of heterogeneous phenomena, such as **polypersonalism**, **noun incorporation**, **verb root serialization**, **derivation**, and **affixation**. As yet, there is no generally acknowledged definition of polysynthesis, and polysynthesis in the traditional understanding is rather a “feeling” than a clear-cut class.” (Mattissen 2004: 189)

Panará presents the hallmarks of a polysynthetic language (Dourado 2001, Bardagil 2018), including polypersonalism, seen with the cross-reference to multiple arguments (5).

- (5)  $\boxed{Ti=}$   $\boxed{ra=}$  *pari* *pjän* *hë?* *Nänkjo-anka* *hë*.  
 3SG.ERG 3PL.ABS kill.PLAC what ERG illness-bad ERG  
 ‘What killed them? A bad illness [did].’

Panará also presents noun incorporation (6) and verb serialization (7).

- (6) *Pôka* *hë* *ti=*  $\emptyset=$   $\boxed{sikja=}$   $\boxed{si=}$  *syri* *mära*.  
 Pôka ERG 3SG.ERG 3SG.ABS hand bone hit 3SG  
 ‘Pôka<sub>i</sub> hit his<sub>j</sub> hand.’

- (7) *Jy=* *ra=*  $\boxed{të=}$   $\boxed{tyy}$ .  
 INTR 1SG.ABS fall die  
 ‘I fainted.’

Derivation of verbs is very productive in Panará, as seen in the verbalization of the negative adverb *pjow* (8–9).

- (8) *Rê=* *k=* *ânpun* *pjow*.  
 1SG.ERG 2SG.ABS see NEG  
 ‘I didn’t see you.’

- (9) *Jy=*  $\emptyset=$   $\boxed{pjow}$  *inkô-ränkjo*.  
 INTR 3SG NEG water-black  
 ‘There is no coffee.’

Finally, Panará presents affixation in the verbal complex of several clausal categories, such as a directional (10).

- (10) *Jy=* *py=* *ra=* *kwyy.*  
 INTR DIR 1SG.ABS go  
 ‘I’m going away.’

It is worth pointing out that, as some of these examples show (2, 5, 6, 9), the position of the verb is not clause-final. Panará verbs can be followed by both argumental and non-argumental phrasal constituents, in sharp contrast with the organization of the classic Jê clause.

The case marking of Panará always follows an ergative-absolutive alignment. Absolutive arguments are unmarked. Ergative arguments are marked by the case morpheme *hẽ* and, in the case of plural suffix *-mêra* /*mera*/, an ergative form *-mêrân* /*merəŋ*/ is used, although clausal transitive subjects are not marked with ergative case.

In Panará, arguments are cross-referenced on the verb complex with their respective clitics. The ergative clitics are shown in Table 1 below.

**Table 1** Panará ergative proclitics in realis and irrealis

		SG	PL			SG	PL	
		1	rê	nẽ		1	∅	∅
REAL		2	ka	karê	IRR	2	ti	tirê
		3	ti	nẽ		3	ti	ti

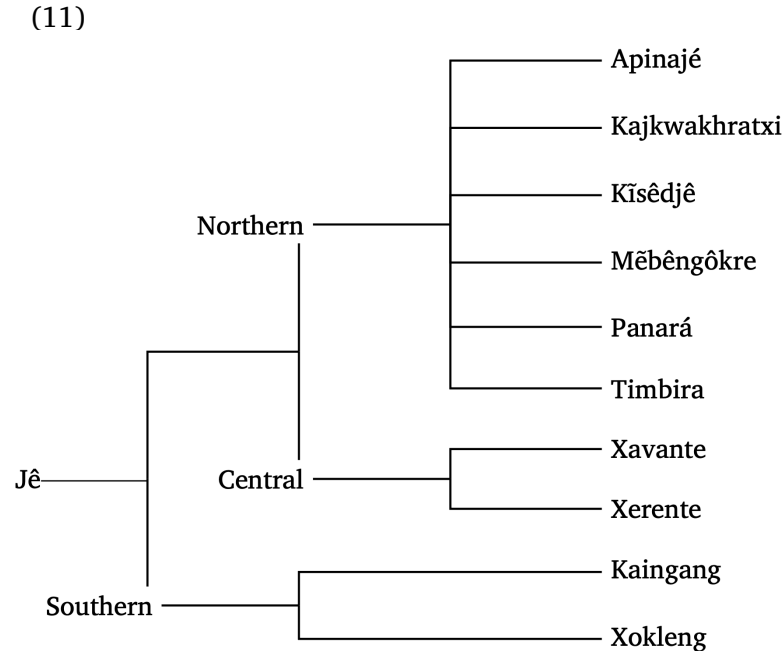
Absolutive clitics, shown in Table 2, have a more reduced inventory of morphemes in irrealis mood when compared to realis mood – and, in the case of intransitive subjects, also discontinuous exponence, resulting in a tripartite alignment of argument cross-reference in irrealis (Bardagil 2018: 229).

**Table 2** Panará absolutive proclitics in realis and irrealis

		SG	PL			SG	PL
		1	ra	ra			
REAL		2	a	rêa			
		3	∅	ra			
		ABS <sub>TR</sub>		ABS <sub>INTR</sub>		SG	PL
		SG	PL	SG	PL		
		1	ra	ra	∅ ∅	∅ ∅	
IRR		2	a	rêa	ti a	ti rêa	
		3	∅	ra	ti ∅	ti ∅	

## 2.2 The Jê clause

The picture of Panará morphosyntax that emerges from what we have seen thus far is rather different from the morphological profile of the other nine Jê languages, shown in (11) in the typical classification of the family (Davis 1966, Rodrigues 1999).<sup>3</sup>



As will become clear in this section, Jê morphosyntax is characterized by the alternation of two verb forms associated with different case marking alignments; nominative-accusative for the verbal form of the verb, and ergative-absolutive for the nominal form. In most Jê languages the verbal word consists largely of just the verbal root, with some occasional TAME inflection and, more frequently, absolutive or accusative clitics; see Bardagil & Groothuis (2023) for a more detailed exploration. This is illustrated in (12) for Měbêngôkre, a sister language of Panará in the Northern Jê branch, where we see that only the intransitive subject is expressed as a proclitic on the verb, but not the comitative participant.

- (12) *Ba nẽ ba ari kot i= tẽ mã.*  
 1SG.TOP NFUT 1SG.NOM (3)PL COM 1SG.ABS leave away  
 ‘I went away with them.’ Měbêngôkre

<sup>3</sup> The more fine-grained relationships among Jê languages are a matter of ongoing discussion; see Ribeiro & van der Voort (2010), Nikulin (2020), Salanova (in prep).

Compare this example with the Panará counterpart in (13), showing this language's polysynthetic verb complex.

- (13) *Inkjë jy= py= ra= kö= ra= tẽ mära-mëra kö.*  
 1SG INTR DIR 3PL COM 1SG.ABS leave 3SG-PL COM  
 'I went away with them.'

The classic verb-final Jê clause (14) contains a small verb complex at the right edge of the clause. In all unaccusative verbs, and in cases of clitic-left dislocation of the direct object, an internal argument proclitic (accusative or absolutive) joins the verb in this clause-final position (15). This is the extent of the size of the Jê verb complex.

- (14)
- | preverbal area                            | verb complex       |
|---|--------------------|
| Topic   TAME   NOM   Asp.   ERG   ABS/ACC | [ ACC/ABS = verb ] |

- (15) *Hën wa i= kato.*  
 DECL 1SG.NOM 1SG.ABS exit  
 'I exited.' Kĩsêdjê; Nonato (2016: 76)

The clause-final verbal position is preceded by a very templatic left field in what constitutes the entire preverbal area, with defined argumental positions for phrasal constituents (14). Immediately preceding the verb complex there is the position of the internal argument, be it in accusative or absolutive case. Further to the left we find the ergative argument, with the position for an aspectual particle immediately to its left. Following that, we find the position of the nominative external argument. The sentences below illustrate that the position of an aspectual particle *arým* is lower than the position of the nominative subject (16), but higher than the position of the ergative (17).

- (16) *Kukryt nẽ ba arým ku= bĩ*  
 tapir NFUT 1SG.NOM already 3SG.ACC kill.V  
 'I killed tapir.' Mëbêngôkre; Salanova (2007: 82)

- (17) *Arým kute tep krẽn mã.*  
 already 3SG.ERG fish eat.N ALL  
 'He's already about to eat fish.' Mëbêngôkre; Salanova (2007: 56)

The Mëbêngôkre internal and external argument positions can, unlike inside the Panará verb, be occupied by complex lexical noun phrases and even clauses. Looking still at (14), further to the left we find the position of a TAME particle, which is a crucial element of the Jê clause. On the left periphery, there is a pleonastic or topic/focus position.

The structure of embedded clauses is similar to that of main clauses, with two differences. First, the clause is quite small and no left positions are licensed to the left of the aspect particle (18); see Bardagil & Groothuis (2023: 13) for an overview, where it is proposed that Jê embedded clauses are most likely AspP.

- (18) (\*kukryt) (\*nẽ) (\*ije) arým ije Ø = bĩn.  
 tapir NFUT 1SG.ERG already 1SG.ERG 3SG.ABS kill.N  
 ‘... that I already killed tapir.’ Mëbêngôkre; Salanova (2011: 52)

Second, in embedded environments the verb obligatorily appears in a nominalized form that triggers a shift to ergative-absolutive case marking (Reis Silva 2001, Salanova 2007, 2017). In (19), the verbal form of the verb *bĩ* co-occurs with the nominative first person pronoun *ba*. In (20), the longer nominal form of the verb triggers a shift to ergative-absolutive case marking alignment, with the corresponding first person ergative pronoun *ije* instead of nominative *ba*.

- (19) *Ba nẽ ba kukôj [bĩ]*.  
 1SG.TOP NFUT 1SG.NOM monkey kill.v  
 ‘I killed a monkey.’ Mëbêngôkre
- (20) *Ba nẽ ba [ije kukôj [bĩr]] krẽ*.  
 1SG.TOP NFUT 1SG.NOM 1SG.ERG monkey kill.N eat.v  
 ‘I ate the monkey that I killed.’ Mëbêngôkre

This is the Jê alignment split, a classic of the family. The ergative alignment of the case marking within the clausal domain of a nominal verb is illustrated below, where a negative existential takes a nominalized embedded clause as its argument. We can see that the marking of the intransitive argument and the transitive object corresponds to an absolutive clitic (21–22), different from the ergative strong pronoun of the transitive subject (22).

- (21) [*I= keket] kêt*.  
 1SG.ABS laugh.N NEG  
 ‘I don’t laugh.’ Mëbêngôkre

- (22) a. [Ije a= pumuj] kêt.  
 1SG.ERG 2SG.ABS see.N NEG  
 ‘I don’t see you.’ Mëbêngôkre
- b. [Aje i= pumuj] kêt.  
 2SG.ERG 1SG.ABS see.N NEG  
 ‘You don’t see me.’ Mëbêngôkre

The nominal form of the verb in Jê languages is also used in very specific situations in main clauses, namely as a mechanism to indicate a marked value of a language-specific TAME category. In Mëbêngôkre, that corresponds to perfective aspect (23–24). In Xavante it corresponds to aorist and imperative (Estevam 2009: 5), seen in (25–26).

- (23) Ø ba ku= krẽ.  
 NFUT 1SG.NOM 3SG.ACC eat.V  
 ‘I eat/ate it.’ Mëbêngôkre
- (24) Ø ije ku= krẽn.  
 NFUT 1SG.ERG 3SG.ACC eat.N  
 ‘I have eaten it.’ Mëbêngôkre
- (25) Uhöbö wa za Ø= simro ni.  
 peccary 1 FUT 3SG.ABS kill.V INDF  
 ‘We will kill the peccaries.’ Xavante; Estevam (2011: 298)
- (26) E wa wa-te a= simroj wa?wa?  
 Q 1 1-ERG 2SG.ABS kill.N PL  
 ‘Have we killed them?’ Xavante; Estevam (2011: 298)

Southern Jê languages present a slightly different picture. Rather than a lexicalized distinction between the verbal and the nominal form of the verb, this branch of the Jê family encodes this contrast with a postverbal particle. In Xokleng, the equivalent of the marked nominal form corresponds to what Urban (1985: 176) calls “stative” aspect, most likely a perfective aspect, as seen in (27–28). Note the corresponding difference in case marking, but see Bardagil (2018: 63) for a full discussion of Xokleng and Southern Jê alignment and their pronominal paradigms next to the rest of the Jê family.

- (27) Tã wũ ti penũ mũ.  
 3SG 3SG.NOM 3SG shoot ACT/V  
 ‘He shot him.’ Xokleng; Urban (1985: 176)

- (28) *Ti t̃ ti pɛnũ wã.*  
 3SG ERG 3SG shoot STV/N  
 ‘He has shot him.’ Xokleng; Urban (1985: 176)

The last relevant piece of Jê clausal syntax that we need to cover is the left-peripheral emphatic position. In some languages, such as Mëbêngôkre, this position has become a default or unmarked subject position, and only carries a marked information-structural interpretation when non-subject constituents appear in it (29–30).

- (29) *Ba nẽ ba ari kot i= tẽ mã.*  
 1SG.TOP NFUT 1SG.NOM (3)PL COM 1SG.ABS leave away  
 ‘I went away with them.’ Mëbêngôkre
- (30) *Ari kot nẽ ba i= tẽ mã.*  
 3PL COM NFUT 1SG.NOM 1SG.ABS leave away  
 ‘It’s *with them* that I went away.’ Mëbêngôkre

The Jê TAME particles can be optional or null when they express an unmarked value. In Kĩsêdjê, factive future *kê* is obligatorily null with 1st and 2nd person subjects, and optional with 3rd person subjects (31–32). In Mëbêngôkre, non-future *nẽ* is only realized if the emphatic phrasal position to its left is filled (33–34).

- (31)  $\emptyset$  *wa khu= ku.*  
 FACT.FUT 1SG.NOM 3SG.ACC eat.V  
 ‘I will eat it.’ Kĩsêdjê, Nonato (2014: 19)
- (32)  $(Kê)$   $\emptyset$  *khu= ku.*  
 FACT.FUT 3SG.NOM 3SG.ACC eat.V  
 ‘He/she will eat it.’ Kĩsêdjê, Nonato (2014: 19)
- (33) *Kukryt nẽ ba ku= bĩ.*  
 tapir NFUT 1SG.NOM 3SG.ACC kill.V  
 ‘I killed a tapir.’ Mëbêngôkre
- (34)  $\emptyset$  *ba kukryt bĩ.*  
 NFUT 1SG.NOM tapir kill.V  
 ‘I killed a tapir.’ Mëbêngôkre

Summing up, Jê languages present a very templatic clause. With a clause-final position occupied by a verb, the Jê clause has a sequence of defined argument positions, with the absolutive/accusative closest to the verb and the ergative further left, followed by an aspectual particle. To the left of it is the position of the nominative subject, then the TAME particle, and finally the topic/focus emphatic position in the far left periphery.

### 3 PROTO-PANARÁ AND POLYSYNTHOGENESIS

When approaching the topic of this article, I assume that the syntactic divergences between modern Panará and the other nine extant languages in the Jê family are innovations of Panará, rather than retentions. Otherwise, polysynthesis, verb-mediality and generalized ergative case would have had to be lost at least three times independently, most likely more, and replaced by the same innovation.<sup>4</sup> This means that the question is: how did Panará go from a situation like (35) to being like (36)? In this section I provide a reconstruction of the transition from a Jê-like Proto-Panará to the polysynthetic modern Panará that is spoken today.

- (35) *Angrô kumrej nẽ ba katõ kot mẽ = ku =*  
 peccary many NFUT 1SG.NOM gun INS PL 3SG.ACC  
*pa.*  
 kill.PLAC.V  
 ‘I killed a lot of peccaries with the shotgun.’ Mëbêngôkre

- (36) *Inkjë hẽ*

<i>rê =</i>	<i>∅ =</i>	<i>ho = ra =</i>	<i>pari</i>
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*nãnkjô*  
 1SG ERG 1SG.ERG 3SG.ABS INS 3PL.ABS kill.PLAC peccary  
*inkjêti atõ ho.*  
 many gun INS  
 ‘I killed a lot of peccaries with the shotgun.’

Proto-Panará would have presented a morphosyntactic situation similar to the Jê clause outlined in the previous section for Jê clausal morphosyntax, with a strict verb-final clause, a minimal verbal complex, well-defined clausal positions, and an accusative-ergative case alignment split. Two reconstructed Proto-Panará sentences, illustrating one intransitive and one transitive clause, are provided below (37–38), mirroring the classic Jê syntax of a language such as Mëbêngôkre (39–40).<sup>5</sup>

<sup>4</sup> Once in Southern Jê, once in Central Jê, and at least once more in Northern Jê.

<sup>5</sup> Reconstructed sentences are indicated with an asterisk, as is the convention. However, I

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- (37) (DP) TAME DP clitic = V  
 \*(*Inkjě*) *ka* (*inkjě*) *ra* = *tě*.  
 1SG IRR 1SG 1SG leave  
 ‘I will leave.’ Proto-Panará
- (38) (DP) TAME DP<sub>EA</sub> DP<sub>IA</sub> V  
 \*(*Inkjě*) *ně* *inkjě* *ikkjyti* *rowã*.  
 1SG REAL 1SG tapir kill  
 ‘I killed a tapir.’ Proto-Panará
- (39) (DP) TAME DP clitic = V  
*Ba* *dja* *ba* *i* = *tě*.  
 1SG.TOP IRR 1SG.NOM 1SG.ABS = leave.V  
 ‘I will leave.’ Mëbêngôkre
- (40) (DP) TAME DP<sub>EA</sub> DP<sub>IA</sub> V  
*Ba* *ně* *ba* *kukryt* *bĩ*.  
 1SG.TOP NFUT 1SG.NOM tapir kill.V  
 ‘I killed a tapir.’ Mëbêngôkre

As a reminder, the above sentences correspond to (41–42) in modern Panará.

- (41) *Inkjě* *ka* =  $\emptyset$  =  $\emptyset$  = *těri*.  
 1SG IRR SPK NADRE leave.IRR  
 ‘I will leave.’
- (42) *Inkjě* *hě* *rê* =  $\emptyset$  = *pĩri* *ikkjyti*.  
 1SG ERG 1SG.ERG 3SG.ABS kill tapir  
 ‘I killed a tapir.’

### 3.1 Collapse of the Jê verbal system

Remember from section 2.2 that Jê languages present a short, verbal form of the verb used exclusively in main clauses, hand-in-hand with nominative-accusative case marking (19), and a longer, nominal form of the verb that is

do not show reconstructed Proto-Panará lexicon, an open-ended research question in and of itself. First, it is not known whether the Panará sound changes happened in parallel to, before, or after the syntactic changes that we are investigating. Second, that would obscure the comparison with modern Panará morphosyntax, rather than facilitate the mapping of Panará onto a classic Jê clause structure.

required in embedded environments (20), and is also used in main clauses as a mechanism to index a marked value of a relevant TAME category. The long, nominal form of the verb triggers ergative-absolutive alignment.

The verbal inflection situation of modern Panará is quite different, with a small verbal inflection system that reflects a three-way distinction of reality status, for a realis–irrealis contrast, and clause type, for a main–embedded contrast, with both relative and complement clauses presenting the same properties (Bardagil 2018: 34). The possible values reflected on Panará verbs are main clause realis (43), embedded clause realis (44), and irrealis, for both main (45) and embedded clauses (46).

- (43) *Inkjẽ hẽ rê= s= anpun Teseja.*  
 1SG ERG 1SG.ERG 3SG.ERG see Teseja  
 ‘I saw Teseja.’

- (44) [*Patty hẽ ti= Ø= py-ra ikkôw*] *rê=*  
 Patty ERG 3SG.ERG 3SG.ABS catch-REL monkey 1SG.ERG  
 Ø= rôwä.  
 3SG.ABS kill  
 ‘I killed the monkey that Patty caught.’

- (45) *Pykkôômã ka= Ø= s= anpu-ri Teseja.*  
 tomorrow IRR 1SG.ERG 3SG.ABS see-IRR Teseja  
 ‘Tomorrow I will see Teseja.’

- (46) *Rê= Ø= sikâri [toopytun hẽ ka= ti=*  
 1SG.ERG= 3SG.ABS= hit old.man ERG IRR= 3SG.IRR=  
 Ø= py-ri atõ].  
 3SG.ABS= take-IRR gun  
 ‘I hit the old man that will buy a gun.’

Some Panará verbs are shown in Table 3 below with their realis and irrealis inflected forms. As can be seen, transitive and intransitive verbs alike can present this alternation, and some overlap exists in the paradigm across different verbs.

**Table 3** Panará verbal inflection

	see	eat	throw	run, go	kill	hit	leave	fly
R	<i>anpu-n</i>	<i>ku(-ri)</i>	<i>měj-n</i>	<i>mö-ri</i>	<i>pĩ-ri</i>	<i>röwa</i>	<i>tě</i>	<i>too</i>
IRR	<i>anpu-ri</i>	<i>ku-ri</i>	<i>měë-ri</i>	<i>mö-ri</i>	<i>pĩ-ri</i>	<i>röwa-ri</i>	<i>tě-ri</i>	<i>too-j</i>
EMB	<i>anpu-n</i>	<i>ku-ra</i>	<i>měj-n</i>	<i>mö-ra</i>	<i>pĩ-ra</i>	<i>röwa</i>	<i>tě</i>	<i>too</i>

The Panará reality status and embedded verb forms are clearly a retention of Jê nominal forms, exemplified for Měbêngôkre in Table 4.

**Table 4** Měbêngôkre verbal and nominal forms of the verb

	see	eat	throw	run, go	kill	hit	go	fly
V	<i>omũ</i>	<i>krě</i>	<i>mě</i>	<i>mõ</i>	<i>bĩ</i>	<i>kurwa</i>	<i>tě</i>	<i>to</i>
N	<i>omũnh</i>	<i>krěnh</i>	<i>měnh</i>	<i>mõro</i>	<i>bĩn</i>	<i>kurwanh</i>	<i>těm</i>	<i>toro</i>

In Panará, as we have just seen, this classic Jê verbal-nominal alternation grammaticalized into a small verbal inflection paradigm that expones reality status and clause type. Panará verbs can appear in four shapes, summarized below in (47).

- (47) i. /-V/ open syllable form (e.g., *too* [tɔ:])  
 ii. /-C/ coda form (e.g., *měj-n* [mějɲ ~ mějɲ])  
 iii. /-Ci/ form (e.g., *tě-ri* [těri])  
 iv. /-Ca/ form (e.g., *pĩ-ra* [pĩra])

The morphological process for Panará verbal inflection is the following, with the only phonotactically available codas in Panará being glides [j] or [w], and nasal stops, realized as [ŋ] (Bardagil 2022: 11).<sup>6</sup>

- (48) • Realis:  $\_V \rightarrow$  Irrealis:  $+C / \rightarrow$  Embedded:  $+ \emptyset$   
 e.g., *röwa*: REAL + IRR /röwa + r/ [rõ'wari], EMB /röwa/ [rõ'wa]
- (49) • Realis:  $\_VC \rightarrow$  Irrealis: (r) + i /  $\rightarrow$  Embedded: (r) + a  
 e.g., *pĩri*: REAL + IRR /pĩr/ [pĩri], EMB /pĩr + a/ [pĩra]

<sup>6</sup> In Panará, only nasal and glide codas are allowed word-finally. Other codas, such as oral stops, require insertion of the Panará epenthetic vowel [i] to resyllabify as an onset, as in (i). Note that [i] epenthesis is also required in word-initial geminate consonants.

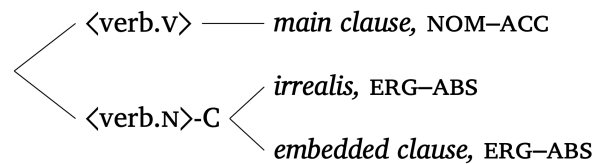
- (i) /s:wun/  $\rightarrow$  [is'swun] 'bird'  
 /k:o:/  $\rightarrow$  [ik'kow] 'monkey'  
 /k:jut/  $\rightarrow$  [ik'kjuti] \*[ik'kjut] 'tapir'

The inventory of Panará verbs with or without the inflectional ending (seen in Table 3) suggests that the entire system is either in the process of settling into an even more systematic paradigm or, perhaps more likely, already moving away from that and slowly losing the distinctions, in an ongoing process of attrition of the inflectional system. This is also consistent with the observed interspeaker variation, as illustrated below for two different speakers: one speaker produces the same *kuri* form in both realis and irrealis contexts (50), while another speaker produces *ku* for realis and *kuri* for irrealis (51).

- (50) a.  $Ti = \quad \emptyset = \quad \boxed{kuri} \quad ikkôw \quad hë.$   
 3SG.ERG = 3SG.ABS = eat.REAL monkey ERG  
 ‘The monkey eats’.
- b.  $Ka = \quad ti = \quad \emptyset = \quad \boxed{kuri} \quad ikkôw \quad hë.$   
 IRR = 3SG.IRR = 3SG.ABS = eat.IRR monkey ERG  
 ‘The monkey will eat’.
- (51) a.  $Ti = \quad \emptyset = \quad \boxed{ku} \quad ikkôw \quad hë.$   
 3SG.ERG = 3SG.ABS = eat.REAL monkey ERG  
 ‘The monkey eats’.
- b.  $Ka = \quad ti = \quad \emptyset = \quad \boxed{kuri} \quad ikkôw \quad hë.$   
 IRR = 3SG.IRR = 3SG.ABS = eat.IRR monkey ERG  
 ‘The monkey will eat’.

What does the modern Panará inflection system tell us? Morphologically, modern Panará retained the nominal form of the Proto-Panará Jê-style verb, as seen from phonological material that persists in the verbal inflection system. The irrealis and embedded verb forms, and some of the realis forms, are a retention of Jê long/nominal forms, which in Panará grammaticalized into more systematic paradigms to expone mood and clause type. This suggests a scenario in which the Jê-style system with one verbal and one nominal form (52) collapsed in Proto-Panará. The marked use of the long nominal form in a finite main clause was generalized and this form became unmarked, becoming reanalyzed as just a basic verbal form of the verb (53).

(52) Jê system:



(53) Collapse:

⟨verb⟩-C — *main clause, irrealis, embedded clause*, ERG-ABS

The retention of the originally nominal form of the verb, and its reanalysis as a verbal form into modern Panará, is consistent with the alignment of case marking in Panará, with only ergative-absolutive case marking, while the nominative and accusative cases (associated with the short, verbal form of the Jê verb) vanished.

The following and last step was a re-innovation of a verbal inflection system, with the three-way contrast as described at the beginning of this subsection (54). In the next section, I will argue that this process is a consequence of a closer integration of the Panará verb with a higher functional category INFL.

(54) New system:

↙ ⟨verb⟩(-C/-Ci) — (*realis*) *main clause*, ERG-ABS  
 — ⟨verb⟩-Ci — *irrealis*, ERG-ABS  
 ↘ ⟨verb⟩-Ca — (*realis*) *embedded clause*, ERG-ABS

By comparing the verbal system of modern Panará with that of the other Jê languages, in this section I have proposed that the Panará clause is an heir of the Proto-Panará nominal (albeit finite) clause, rather than the Proto-Panará verbal clause, which was instead lost. As the marked TAME value expounded in main clauses by the nominalized form of the Proto-Panará verb bleached onto the TAME particle, the nominal verb was progressively reanalyzed as fully verbal, and the ergative-absolutive alignment associated with it became the general case system in standard Panará clauses; it is not uncommon for alignment changes to be triggered by the generalization of less finite forms to main clauses (Coon 2013, Cristofaro 2024). The plot thickens in the next section, where we examine the role played by the Panará TAME particle in the emergence of the new polysynthetic clause system.

### 3.2 Reanalysis of the Jê clause

In section 2.2 we saw that Jê languages present a canonical verb-final clause structure with fixed case positions, and the presence of second position TAME particles. I adopt the proposal that, in Jê languages, these second position particles spell out INFL (Nonato 2014, Bardagil & Groothuis 2023) – i.e., the functional category that deictically anchors the clause to the utterance

context, and whose substantive content cross-linguistically corresponds to notions such as Tense, Mood, Evidentiality, or Location (Ritter & Wiltschko 2009). These are shown in Table 5 below for all Northern Jê languages.

**Table 5** INFL particles in Northern Jê  
(Bardagil & Groothuis 2023: 7)

Apinajé (Oliveira 2005: 170)	<i>na</i>	realis
	<i>kot</i>	irrealis
	<i>pre</i>	past
	<i>ra</i>	perfective
	<i>te</i>	habitual
Kajkwakhratxi (Camargo 2015: 131)	<i>hẽn</i>	past
	<i>wã</i>	future
	<i>kwã~kaw</i>	habitual asp.
Kĩsêdjê (Nonato 2014: 16)	<i>arân</i>	counterfactual
	<i>hẽn / ∅</i>	factual non-future
	<i>kê / ∅</i>	factual future
	<i>kôt</i>	inferential future
	<i>man</i>	witnessed
	<i>waj</i>	inferential non-future
Mêbêngôkre (Salanova 2007: 131)	<i>nẽ / ∅</i>	non-future
	<i>dja</i>	future/irrealis
	<i>rãnh</i>	counterfactual
	<i>we</i>	evidential
Panará (Bardagil 2018: 33)	<i>jy</i>	realis (intransitive)
	<i>ka</i>	irrealis
Timbira (Castro Alves 2004: 89)	$\emptyset$	realis
	<i>ha</i>	irrealis
	<i>pe</i>	past
	<i>jamã</i>	evidential

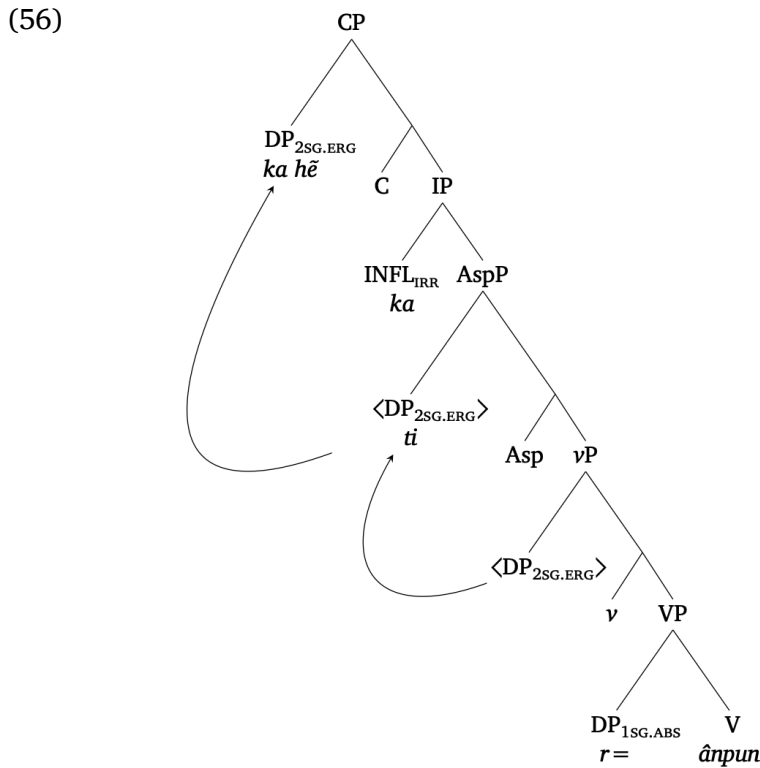
Since Panará is a Jê language and, as described earlier, we have reason to believe that its polysynthetic verbal complex and non verb-final clause are innovations, the assumption is that Proto-Panará too at one stage had a classic Jê clause, illustrated in (55) for both intransitive and transitive verbs.

(55) **Stage 1:** [<sub>CP</sub> [<sub>IP</sub> [<sub>VP</sub> verb ]]]

- a. DP            TAME    clitic =    verb  
 \**Inkjẽ*    *ka*    *ra*<sub>ABS</sub> =    *têr*.  
 1SG.ABS    IRR    1SG.ABS =    leave.N  
 ‘You will leave.’

- b. DP            TAME   pron.            clitic =    verb  
 \**Ka hẽ ka ti*<sub>ERG</sub>            *r*<sub>ABS</sub> =    *ânpun*.  
 2SG ERG IRR    2SG.ERG.IRR    1SG.ABS =    see.N  
 ‘You will see me.’

The syntactic structure corresponding to the stage of Proto-Panará that still retained a canonical Classic Jê verb-final clause is shown in (56) for a transitive clause, with the verb in situ in its base position, and the absolutive internal argument procliticizing on V. The ergative external argument, after A-moving to a specifier position in the Aspect functional projection, then undergoes  $\bar{A}$ -movement to a projection in the left periphery of the clause, which I agnostically label C in this article. Left dislocation of the external argument triggers prolepsis in its A position, here the pronoun *ti*.



In section 2.2, we saw that in some Jê languages, especially in the Northern branch, the pre-INFL topic position is a default position for subjects. Non-subject arguments, especially when clausal or heavy, also have a tendency to occur in that position, with either a co-indexed free pronoun (for nominatives and ergatives) or a co-indexed clitic pronoun (for accusatives and absolutes) in the corresponding position to the right of the INFL particle.

In Proto-Panará, the Jê tendency towards a left-heavy clausal configuration gave rise to Stage 2 in the diachronic change, with the bridging construction shown in the reconstructed examples in (57). The surface order of the clause with a DP on the left edge, and a linear sequence of the TAME particle followed by pronominal forms, both the original clitics (for the absolutive, like *r~ra*) and free pronouns (for the ergative, like *tĩ*), can correspond to two possible derived structures: one in which the verb stays in situ inside the VP (in red), and one in which the verb is attracted to the INFL position where the TAME particle surfaces (in blue). This change, which follows a grammaticalization path from free form towards bound form, was influenced by changes in clausal syntax produced by a rising tendency to left dislocate and pronominalize – the reanalysis of the surface position of verbs and pronouns was reinforced by the reanalysis of the originally emphatic clause-initial position as a default unmarked position for non-pronominal phrases.

(57) **Stage 2:** [<sub>CP</sub> [<sub>IP</sub> [<sub>VP</sub> verb ]]] / [<sub>CP</sub> [<sub>IP</sub> verb [<sub>VP</sub> <verb> ]]]

a. DP      TAME(=)    clitic =      verb  
 \**Inkjẽ*    *ka*(=)      *ra*<sub>ABS</sub> =      *tẽr*.  
 1SG    IRR            1SG.ABS =    leave.v  
 ‘I will leave.’

b. DP            TAME(=)    pron./clitic(=)    clitic =      verb  
 \**Ka*    *hẽ*    *ka*(=)      *tĩ*<sub>ERG</sub>(=)      *r*<sub>ABS</sub> =      *ãnpun*.  
 2SG    ERG    IRR            2SG.ERG      1SG.ABS =    see.v  
 ‘You will see me.’

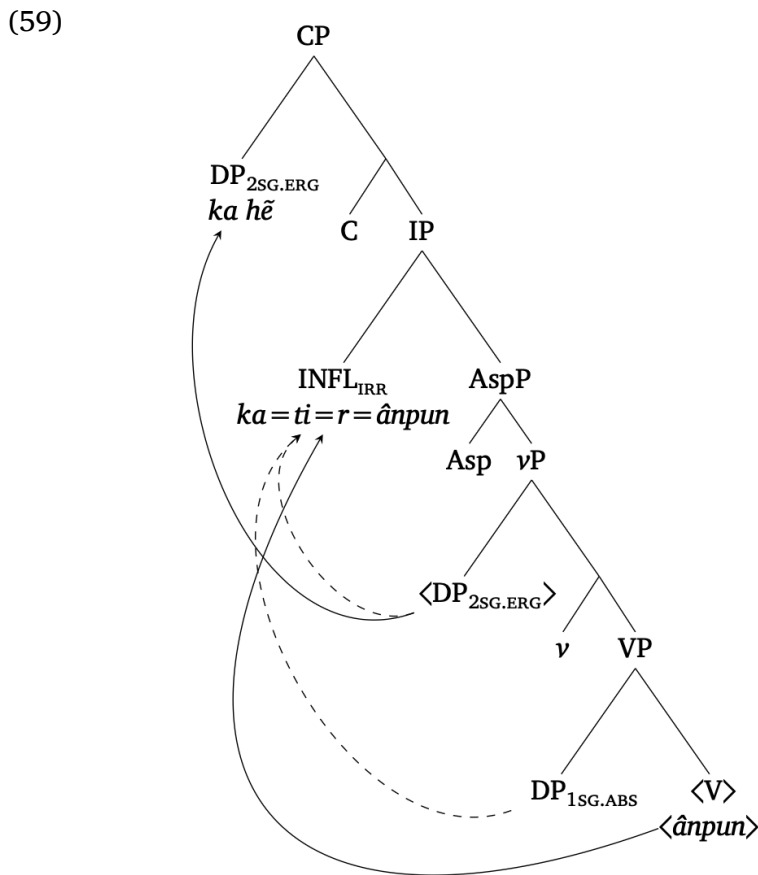
In Stage 3 (58), Panará has fully generalized the innovation of V-to-INFL (V-to-T) movement. The in situ position for the verb is no longer an option, and INFL hosts not only the verb and the absolutive clitic, but also the new ergative clitic. From there, Panará morphosyntax becomes highly cliticizing, cross-referencing arguments and non-arguments on the verb, resulting in the higher degree of synthesis that we observe in modern Panará.

(58) **Stage 3:** [<sub>CP</sub> [<sub>IP</sub> verb [<sub>VP</sub> <verb> ]]]

a. DP      TAME =    clitics =            verb  
*Inkjẽ*    *ka* =       $\emptyset$  =  $\emptyset$  =          *tẽri*.  
 1SG    IRR =      SPK = NADRE =    leave.IRR  
 ‘I will leave.’

- b. DP            TAME =    clitic =    clitic =    verb  
*Ka hẽ ka =    ti<sub>ERG</sub> =    r<sub>ABS</sub> =    ânpun.*  
 2SG ERG IRR    2SG.ERG 1SG.ABS = see.IRR  
 ‘You will see me.’

The syntactic tree in (59) illustrates the structure underlying the sentence in (58b), with movement of the verb to the INFL position. Cliticization is represented with a dashed line, and the preverbal position remains accessible to argument phrases in  $\bar{A}$ -movement.



Both V-to-INFL and cliticization are approached as head movement that proceeds skipping over intervening heads, cf. [Kayne \(2014\)](#), [Harizanov & Gribanova \(2019\)](#) a.o. I assume that clitics are D heads adjoined to INFL, which is consistent with their pronominal nature, but I remain agnostic as to whether clitics originate in a big DP structure ([Nevins 2011](#)) or are a pronounced copy of the D head.



#### 4 TRACES OF LANGUAGE CONTACT

In the analysis of the diachrony of polysynthogenesis in Panará that I have put forward in the preceding section, a higher verbal synthesis is the consequence of Panará going further on the more widespread Jê tendency to left dislocate and pronominalize. Language contact is, then, not a requirement for the presence of polysynthesis in Panará, but it is also not ruled out based on this analysis alone. If language contact played a major role in Panará verbal synthesis, we could expect to see other traces of intense language contact. While a detailed study of external influences in Panará lexicon and grammar is outside of the scope of this article, we do have information that can give us insight on potential linguistic and cultural borrowings in Panará.

Language contact does not take place in isolation from social contact, and there is now a long tradition of studies of the social dimension of language contact. This research has turned out shared cross-linguistic patterns of elements that are more or less easy to borrow, and require different degrees of intensity in social and cultural contact, as illustrated in Table 6.

**Table 6** Correspondences of cultural contact and borrowing  
(Thomason & Kaufman 1988: 74)

Stage	Features
1. Casual contact.	–Lexical borrowing only.
2. Slightly more intense contact.	–Slight structural borrowing; conjunctions and adverbial particles.
3. More intense contact	–Slightly more structural borrowing; adpositions, derivational affixes.
4. Strong cultural pressure.	–Moderate structural borrowing; major structural features that cause relatively little typological change.
5. Very strong cultural pressure.	–Heavy structural borrowing; major structural features that cause significant typological disruption.

The implication is that, for the borrowing of features corresponding to one specific stage of cultural contact, the preceding stages are also present. In the case of Panará polysynthesis, if it indeed was a consequence of structural borrowing from an unrelated polysynthetic language, that would correspond to Thomason and Kaufmann’s (1988) stage 5, involving the borrowing of major structural features causing significant typological disruption, namely a change in morphological profile from analytic to highly synthetic. In that speculative scenario, we would expect to also find traces of stages 1–4, at the very least of the less intense stages.

Examining and detecting lexical borrowing is a good indicator of language contact, and clues as to borrowing directionality include identifying phonological adaptation, or morphological opacity for words that would present transparent inflectional or derivational morphology in the donor language. However, examinations of Jê cognancy across the Northern branch (Lapierre et al. 2016, Nikulin 2020) show that Panará shares Jê basic vocabulary with its sister languages and a minimal presence of lexicon from non-Jê sources.

Some languages do present an impermeability to certain types of borrowing, and it should be kept in mind that “speakers’ attitudes can and sometimes do produce exceptions to most of the generalizations” about contact-induced borrowing (Thomason 2001: 77). Lexical borrowing in Amazonia in particular is in some cases famously low, a phenomenon attributed to language attitudes that underly and inform cultural and linguistic contact patterns (Epps 2006, 2020, van Gijn et al. 2022).

Even so, the Panará do not seem to be impervious to lexical borrowing. Since contact in 1973 the Panará have borrowed from Mëbêngôkre, Kĩsêdjê and Portuguese when contact situations have arisen, in a context of mild multilingualism in these languages which has had no visible structural impact. Borrowed elements include numeral terminology from Portuguese, functional items (e.g., Mëbêngôkre negative *kêt*), and discourse connectors (e.g., Portuguese conditional *se for*), besides various lexical items such as *swâmro* from Kĩsêdjê for tapioca bread, presenting an otherwise illicit [mr] sequence in native Panará phonotactics.

Besides lacking clear linguistic borrowings, Panará society also presented an absence of non-Jê agriculture or material culture, lacking hammocks, pottery, cotton, bitter manioc (making no *farinha* or *tapioca*), or flutes (Schwartzman 1988, Ewart 2000, Giralдин 1997). The Panará are truly exceptional as a Jê group in one main area: their avoidance of exogamic practices. Unlike the approach to warfare of other Northern Jê nations, who would kill enemy men but take women and children captive as part of traditional warfare, and proceed to incorporating them into their society as wives or adopted children, the Panará (and the Panará-speaking Southern Cayapó from colonial period) never did take captives, instead killing all of their enemies (Giralдин 1997). It is possible that, in the absence of the language contact with rival Jê-speaking groups that this type of exogamy would facilitate, the Panará remained cut off from shared conservative grammatical Northern Jê tendencies, or adopted an attitude of esoterogeny (Thurston 1989) to linguistic divergence from its sister languages.

The synchronic syntactic perspective also supports the absence of any ev-

idence of language contact driving Panará’s shift towards a higher synthesis. Even in the unlikely case of a mixed language scenario, with Proto-Panará as the lexifier, the polysynthetic verb complex that we observe (63) mirrors the templatic verb-final Jê clause (64) very closely, with the defined areas within the Panará polysynthetic verb complex presenting the same sequence as the Jê clausal positions.

(63) *Panará clause*

preverbal	verb complex	postverbal
(NP)	[ TAME = ERG = ... = ABS = verb ]	(NP)

(64) *Jê clause*

preverbal	verb complex
Topic   TAME   NOM/ERG   ABS/ACC	[ ACC/ABS = verb ]

In short, no expected traces of intense social and linguistic contact, of the type that could be expected to result in the borrowing of a new morphological profile, can be observed in Panará.

## 5 CONCLUSION

Synchronically we observe a large degree of verbal analyticity in Jê languages, with the exception of one polysynthetic language: Panará. In this article I have presented a reconstruction of the diachronic path for the emergence of a higher degree of synthesis in Panará, modelled formally as an innovation of V-to-INFL movement alongside a development of bound morphology on INFL as a cliticizing functional category.

This development does not require the contribution of putative L2 Panará speakers with a non-Jê L1 polysynthetic grammar. Panará is a relatively conservative Northern Jê language in other areas of the language (e.g., cognates, phonotactics). Ethnographic research shows that the Panará presented Jê material culture and social practices and, even though history shows a sustained contact with other Jê groups, this adopted the form of a fierce enmity with speakers of neighbouring Jê communities (e.g., the Mëbêngôkre-speaking Kayapó) with a strict avoidance of exogamy.

On the basis of the study presented in this article, no traces of intense language contact can be observed in Panará. Taking that into consideration,

we can conclude that Panará has most likely not been altered by contact with non-Jê languages. This, in turn, means that the modern Panará people most likely did not go through a historical episode of intense contact or cohabitation with a non-Jê group.

#### ABBREVIATIONS

1 = first person, 2 = second person, 3 = third person, ACT = active, ABS = absolutive, ACC = accusative, COM = comitative, DECL = declarative, DIR = directional, ERG = ergative, FUT = future, INC = incorporation, INDF = indefinite, INS = instrumental, INTR = intransitive realis, IRR = irrealis, N = nominal, NADRE = non-addressee, NFUT = non-future, N = nominal, NOM = nominative, PAU = paucal, PL = plural, PLAC = pluractional, Q = question, REL = relative clause, SG = singular, SPK = speaker, STV = stative, TOP = topic, V = verbal.

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Bernat Bardagil  
Ghent University  
Department of Linguistics  
Blandijnberg 2  
9000 Ghent – Belgium  
[bernat.bardagil@ugent.be](mailto:bernat.bardagil@ugent.be)