Subordinate clauses in Karajá
Orações subordinadas em Karajá

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Abstract: Karajá, a Macro-Jê language spoken in Central Brazil, presents a typologically uncommon device to signal relativization: stress shift. Despite its productivity, such mechanism is not mentioned in any of the previous descriptive or theoretical works dealing with Karajá grammar. In describing relativization (and subordination in general) in Karajá, this paper presents an overview of the language's grammar, including the semantic properties of postpositions (which play an essencial role in the creation of adverbial clauses, including converbs), lexical nominalization, and inflectional morphology.

Keywords: Subordination. Relativization. Non-concatenative morphology. Nominalization.

Resumo: O Karajá, língua indígena do Brasil Central, apresenta um mecanismo tipologicamente incomum para marcar relativização: mudança de acento. Apesar de sua produtividade, tal mecanismo não é mencionado em nenhum dos trabalhos anteriores, teóricos ou descritivos, que tratam da sintaxe Karajá. Ao descrever as estratégias de relativização (e subordinação, em geral) em Karajá, este artigo apresenta uma visão panorâmica da gramática da língua, descrevendo as propriedades semânticas das posposições (que desempenham um papel essencial na criação de orações subordinadas adverbiais, incluindo converbos), nominalização lexical, e morfologia flexional.

Palavras-chave: Subordinação. Relativização. Morfologia não concatenativa. Nominalização.

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INTRODUCTION

This paper describes relative clauses in Karajá, a Macro-Jê language spoken in Central Brazil[1]. Since relative clauses in this language share fundamental properties with both complement clauses and (the functional equivalents of) adverbial clauses, these will also be treated in this paper. Although this study is mainly concerned with subordinate clauses proper (that is, complements or modifiers which present the internal structure of a full clause), it will also briefly discuss nominalized complements, very common functional equivalents of subordinate clauses in Karajá.

Relative clauses in Karajá are basically formed by 'stress shift' in the verb, providing an interesting example of non-concatenative morphology. As we will see, a typical finite verb in Karajá presents tense-aspect clitics, which are unstressed. In independent clauses, the stress falls ordinarily on the last syllable of the verb stem (1). In relative clauses, however, the stress shifts to the tense-aspect clitic (2).

(1) ɗoriˈ   ɸ-d-ɸ-ɔrɔ=d-e   [doˈrode]
     White   3-CTPT-INTR-go.ashore=CTPT-IMPRF
     'The white man came ashore.'

(2) ♀   ɗoriˈ   ɸ-d-ɸ-ɔrɔ=*d-ɛ́*   [doroˈde]
         White   3-CTPT-INTR-go.ashore=CTPT-IMPRF+SUBORD

     wa-rikoko   ɸ-r-ɪ-kõbəra-də̃=r-a
     1-clay.doll 3-CTFG-TRANS-buy-VERB=CTFG-PERF
     'The White man who came ashore bought my clay dolls.'

Before describing the properties of subordinate clauses in Karajá, some background information on the language's phonology and morphology will be provided (Background). A section will be dedicated to the description of the properties of relative clauses, providing a background for the discussion of complement clauses (Complementation) and postpostional clauses (Adverbial Clauses), which in Karajá play most of the functions traditionally associated with adverbial clauses. A section describes nominalized complements. The last section provides a summary of the paper.

BACKGROUND

Before describing the characteristics of subordinate clauses in Karajá, a few remarks on the language's phonology, morphology, and syntax are in order.

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[1] Karajá has four mutually intelligible dialects (Northern Karajá, Southern Karajá, Javaé, and Xambioá), spoken by around three thousand speakers, in several villages along the Araguaia River, in Central Brazil. The data in this paper are from the Northern and Southern Karajá dialects, but the phenomena here described are common to all four dialects. I would like to thank all the Karajá speakers, who took the time to teach me their language (particularly Ijeseberi, Luiz Kurikala, and Sinvaldo Wahuka), patiently and generously.
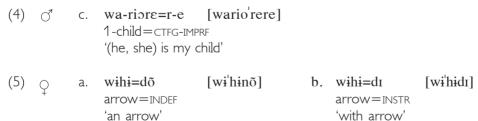
Female and male speech

Karajá presents remarkable differences between male and female speech (FORTUNE, D.; FORTUNE, G., 1975; BORGES, 1997), which can be generally accounted for by fairly regular phonological rules (throughout this paper, the source of the data will be indicated by the symbols ♀ 'female' and ♂ 'male', whenever necessary). Female speech can be considered as more conservative, male speech being characterized, in general, by the deletion of a velar stop occurring in the corresponding female speech form (3). The deletion of the velar stop can make possible the fusion between vowels (3d-f).

(3)   ♀   ♂
   a.   kɔwɔrʊ   ɔwɔrʊ   'wood'
   b.   kɔhə˞   ɔhã̃   'armadillo'
   c.   dɪkarə̃   dɪarə   'I'

   d.   hã̃lɔkɔɛ   hã̃lɔɛ   'jaguar'
   e.   ruku   ru   'night'
   f.   bɛraku   bero   'river'

Phonology

The primary stress falls ordinarily on the last syllable of a stem (4a). Secondary stress is generally assigned on an iambic, right-to-left pattern to every other syllable (4b).

(4) ♂   a.   wa-riɔrɛ   [waˌriɔˈrɛ]
               1-child
               'my child'

         b.   wa-riɔrɛ-riɔrɛ   [ˌwariˌoreˌriɔˈrɛ]
               1-child-child
               'my grandchild'

As the examples show, in order to fit the iambic pattern, the original stress pattern of a stem may be rearranged under compounding (4b), as well as under suffixation, since all derivational suffixes are stressed. On the other hand, a number of grammatical and discourse morphemes – including tense and aspect markers (4c), the indefinite article ♀ =dõ, ♂ = õ (5a), and most postpositions (5b) – are unstressed, and thus do not alter the stress of the stem to which they attach:

(4)   ♂   c.   wa-riɔrɛ=r-e   [warioˈrere]
               1-child=CTFG-IMPRF
               '(he, she) is my child'

(5) ♀   a.   wɨhɨ=dõ   [wɨˈhɨnõ]   b.   wɨhɨ=dɪ   [wɨˈhɨdɪ]
               arrow=INDEF   arrow=INSTR
               'an arrow'   'with arrow'

Examples in the following sections will be given in phonemic transcription only – except for stress, which will be indicated whenever relevant for the topic of this paper. Although space considerations prevents from providing

a more complete picture of Karajá phonology, a few notes on the pronunciation of the examples may be necessary. The voiced stops /b/ and /d/ are fully nasalized before nasal vowels and /a/: *woba* 'ax' [woˈma], *bɜ̃da* 'stone' [mɜ̃ˈna], *dĩ* 'name' [niˈi], *dõdie* 'seagull' [nõtʃiˈɛ]. The minimal surface word in Karajá is bimoraic. In order to comply with the bimoraic minimality constraint, monosyllabic stems duplicate their vowels when occuring by themselves in a phrase. Thus, the stem *hɛ* 'firewood' in example (5) is pronounced as [hɛˈɛ].

One of the most remarkable characteristics of Karajá phonology is vowel harmony, which consists in the regressive spreading of the [+ATR] feature specification to vowels that would otherwise surface as [-ATR] (RIBEIRO, 2000, 2002). Vowel harmony can be triggered by any morpheme containing a [+ATR] vowel, including clitics such as the imperfective auxiliary =*r-e*, as seen in examples (1) and (2). Another common process is palatalization, whereby a dental or alveolar consonant becomes palatalized when contiguous to the [high, +ATR] vowels /i/, /ɨ/, and /u/. The dental fricative /θ/ is palatalized in contiguity to these vowels: *waθi-θa* 'fishing line' [waʃiˈʃa]. Likewise, the alveolar stop /d/ and the lateral /l/ become voiced alveopalatal affricates in those same environments: *di* 'aquatic plant (sp.)' [dʒi], *hãdu* 'paca (a type of mammal)' [hãˈdʒu], *d̻irɛ* 'otter' [dʒɨ̻ˈrɛ]. The alveolar implosive /ɗ/ becomes a voiceless alveopalatal when preceding a [high, +ATR] vowel: =*ɗi* 'locative postposition' [tʃi], *ɗu* 'sun' [tʃu], *ɗɨ̻*(a) squeeze' [tʃɨ̻]. In addition, in the Southern and Northern Karajá dialects, the velar stop /k/ is palatalized when preceded by /i/: ♀ *rikoko,* ♂ *rikoo* 'clay doll' [ritʃõˈko, ritʃõˈo].

Verb morphology

Contrasting with a fairly simple noun morphology (consisting solely of possessive prefixes and derivational suffixes), the Karajá verb inflects for subject agreement, direction, and valence; in addition, pronominal direct objects (including the reflexive morpheme) are prefixed to the verb stem. The examples (6) to (8) illustrate the distribution of the inflectional morphemes in the verb word and the pragmatically unmarked word order in the language (SOV; with oblique NPs tending to occur pre-verbally).

(6) kai   bə-d-ɪ-wa-dɨ=kəre   ã-l-awɔ=dɪ
     you   2-CTPT-TRANS-1-carry.ANIM=FUT   2-REL-canoe=INSTR
     'You will bring me with your canoe.'

(7) d-ãdɪ   hɛ   kə-d-ɪ-wɨ=kəre
     my.mother   firewood   3-CTPT-TRANS-carry=FUT
     'My mother will bring firewood.'

(8) uɛ   hɛka²   hãlɔɛ=lau
     capibara   ASSRT   jaguar=EVIT

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² *hɛka* 'assertive' occurs in clauses reporting a well-known or obvious fact, a matter-of-factly type of information, exactly the contrary of what Maia (2002) claims its meaning to be. Maia considers it a 'dubitative particle,' claiming that "*hɛka* introduces an element of doubt" (my translation). In fact, *hɛka* is extremely common exactly in contexts in which the veracity and accuracy of the information is not at question, such as descriptive (8) and autobiographic (i, ii) texts.

(i) ♂ dɪarɜ̃ *hɛka* əlɜriki   wa-dɪ=r-e   (ii) ♂ bɔrɔkɔɗu riɔrɛ *hɛka* dɪarə ∅-r-∅-a=r-e
        I   ASSRT   Àlàriki   1-name=CTFG-IMPRF   Bòròkòtu child ASSRT   I   -CTFG-INTR-go=CTFG-IMPRF
     'My name is Àlàriki.'   'I am the son of Bòròkòtu.'

ɸ-r-eθi-wɔ=bə̃hə̃=r-e   bɛra=kɪ
3-CTFG-REFL-hide=HABIT=CTFG-IMPRF   water=loc
'The capibara hides from the jaguar in the water.'

Person agreement displays a strictly nominative pattern, with the verb always agreeing with the subject, be it intransitive (9a) or transitive (9b). Person agreement markers are distributed into two different sets, one occurring in the realis (present and past tenses) and the other in the irrealis (future, potential, and admonitory). These prefixes are listed in Table 1[3].

Table 1. Subject agreement markers in Karajá (RIBEIRO, 1996)

Person	Realis	Irrealis
1st	a-	♀ ka-/♂ a-
2nd	d̶a-	bə-C/b-V
3rd	ɸ-	ɸ-; ♀ kə-/ ♂ə-

(9) ♀ a. *ka*-r-a-rika=kəre   b. *ka*-r-ɪ-θʊhɔ=kəre
      1-CTFG-INTR-walk=FUT   *1*-CTFG-TRANS-wash=FUT
      'I will walk.'   'I will wash it.'

Another category expressed by the verb is *direction*, indicating whether an event is seen as occuring towards or away from a deitic center (by default, the location of the speaker; see Ribeiro (2002a, 2004) for discourse-oriented motivations for the assignment of the role of deitic center). Centripetal direction ('hither') is marked by the prefix *d-* (10a) and (11a), whereas centrifugal direction ('thither') is marked by *r-* (10b) or by a zero allomorph (11b):

(10) a. *ɸ-d-ɪ-wɨ=d-e*   b. *ɸ-r-ɪ-wɨ=r-e*
        3-*CTPT*-TRANS-carry=*CTPT*-IMPRF   3-*CTFG*-TRANS-carry=*CTFG*-IMPRF
        'He brought it.'   'He took it away.'

(11) a. bə-*d-ɪ-wɨ*=kəre   b. b-*ɸ-ɪ-wɨ*=kəre
        2-*CTPT*-TRANS-carry=FUT   2-*CTFG*-TRANS-carry=FUT
        'You will bring it.'   'You will take it away.'

Karajá verbs are lexically either transitive or intransitive, and any valence change must be morphologically indicated. Intransitive verbs (that is, those that do not take a direct object as one of their arguments) are

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[3] The same set of prefixes is used for singular and plural. There is also a distinction between a first person plural exclusive (marked by the same set of prefixes used for first person singular – except in the centrifugal direction of the irrealis, when the prefix *rək-* ~ *k-* occurs) and a first person plural inclusive (inflected for third person). The prefix *kə-* '3rd person' (7) is restricted to the centripetal direction of the irrealis mood.

generally marked by the prefix **a-** (12a) or by a zero allomorph (12b). Transitive verbs are marked by the prefix **ɪ-** (13a), and may have their valence decreased through passivization (13b), antipassivization (13c), and reflexivization (13d). Intransitive verbs, on the other hand, may have their valence increased through causativization or through oblique promotion, which are derivational processes (RIBEIRO, forthcoming a).

(12) a. **bədɛ   ɸ-r-ɸ-uɗəɗə=r-a**
          world   3-CTFG-*INTR*-become.cold=CTFG-PERF
          'The weather got cold.'

     b. **bədɛ   ɸ-r-a-ɗɔɗəkɛ=r-a**
          world   3-CTFG-*INTR*-become.hot=CTFG-PERF
          'The weather got hot.'

(13) a. **ɸ-r-ɪ-θʊhɔ=kəre**   b. **ɸ-r-a-θʊhɔ=kəre**
          3-CTFG-*TRANS*-wash=FUT   3-CTFG-*INTR*-wash=FUT
          'S/he will wash it/him/her.'   'S/he/it will be washed.'

     c. **ɸ-r-ɔ-θʊhɔ=kəre**   d. **ɸ-r-eθi-θʊhɔ=kəre**
          3-CTFG-*ANTI*-wash=FUT   3-CTFG-*REFL*-wash=FUT
          'S/he will wash (something).'   'S/he will wash her/himself.'

As we have seen, pronominal direct objects are prefixed to the verb stem. The series of direct-object prefixes is partially the same as that which occurs with nouns. However, except for the first person (14a), the direct-object prefixes are rather irregular. Notice that third person object is not marked[4] (or is marked by a zero prefix), and that the transitivity prefix is dropped with second-person objects:

(14) ♀ a. **kə-d-ɪ-*wa*-rakɔ=kəre**
                3-CTPT-TRANS-*1*-wait=FUT
                'S/he will wait for me (hither).'

     b. **kə-d-*a*-rakɔ=kəre**
                3-CTPT-*2*-wait=FUT
                'S/he will wait for you (hither).'

     c. **kə-d-ɪ-ɸ-rakɔ=kəre**
                3-CTPT-TRANS-*3*-wait=FUT
                'S/he will wait for her/him (hither).'

Tense and aspect do not occur as inflectional categories in Karajá, being indicated by auxiliaries and particles which cliticize to the verb stem (Table 2). Although such morphemes have been traditionally analyzed as suffixes (FORTUNE, D.; FORTUNE, G., 1964; FORTUNE, 1970; FORTUNE, 1973; MAIA, 1998), a

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[4] Notice, however, that the prefix **ɗ-** which occurs with class ii verb stems may be treated as a third-person object marker.

more careful analysis reveals that they are indeed clitics (RIBEIRO, 1996)[5]. As mentioned, these morphemes are intrinsically unstressed[6].

Table 2. Tense-aspect clitics in Karajá

Auxiliaries		Particles	
=(*r*)*e*	'imperfective'	=*kəre*	'future'
=(*r*)*a*	'perfective'	=*kɛ*	'potential'
=(*r*)*ɛrɪ*	'progressive'	=*hɛdɔ̃*	'admonitory'

Noun morphology

The only prefixes which occur with nouns are possessive morphemes. All noun (and most verb) stems may be grouped into two lexical classes, arbitrarily labeled *class I* and *class II* (RIBEIRO, 1996). The main difference between class I and class II noun stems is in the series of personal prefixes they take, as illustrated by the paradigms for class I and class II stems given in Tables 3 and 4.

Table 3. Class I noun stems

	'arrow'	'younger brother'	'ax'	'eye'
'man's'	*hãbu wɨhɨ*	*hãbu eθi*	*hãbu wobã*	*hãbu rʊɛ*
1st	*wa-wɨhɨ*	*wa-eθi*	*wa-wobã*	*wa-rʊɛ*
2nd	*a-wɨhɨ*	*a-eθi*	*a-wobã*	*a-rʊɛ*
3rd	*i-wɨhɨ*	*i-eθi*	*i-wobã*	*i-rʊɛ*
3rd.REFL	*ɗa-wɨhɨ*	*ɗa-eθi*	*ɗa-wobã*	*ɗa-rʊɛ*

Table 4. Class II noun stems

	'forearm'	'tooth'	'medicine'	'penis'
'man's'	*hãbu d-ɛra*	*hãbu d-u*	*hãbu l-ʋahɪ*	*hãbu d-õ*
1st	*wa-d-ɛra*	*wa-d-u*	*wa-l-ʋahɪ*	*wa-d-õ*
2nd	*ɸ-ɛra*	*ɸ-u*	*ɸ-ʋahɪ*	*ɸ-õ*
3rd	*ɗ-ɛra*	*ɗ-u*	*ɗ-ʋahɪ*	*ɗ-õ*
3ª.REFL	*ɗ-ɛra*	*ɗ-u*	*ɗ-ʋahɪ*	*ɗ-õ*

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[5] As such, they can occur with any word classes, including nouns (*bʊ=r-e* '[he] is your father'), pronouns (♂ *dɪarɔ̃=kəre* 'it will be me'), postpositions (♂ *waɗau dəbɔ̃ra=ʊ=r-e* 'it was during Watau's youth'), and numerals (*idãɗɪ=r-e* 'it is two'). In addition, in desiderative constructions such as the example (i), tense-aspect morphemes can be separated from the verb by a postposition (which act as a subordinating morpheme). Notice that, in constructions such as these, the clitic auxiliary functions syntactically as a full verb such as *rahidɔ̃=rɛrɪ* 'he is crying' (ii). Notice also that the clitic auxiliaries inflect for direction (and, in the second person, also for subject agreement), an atypical behavior for an 'affix'.

    (i)   dɪarɔ̃   hɛka   ɗʊ=ɗɨhɨ   a-r-ɸ-obi=kɛ=bɔ̃=r-ɛrɪ [aˈrobiˈkɛmɔ̃rɛrɪ]
        I   ASSRT   3.LOC=EMPH   1-CTFG-INTR-see=POT=LOC=CTFG-PROGR
        'I really want to see it.'

    (ii)   ʊladʊ   ɗʊ   ɸ-r-ɸ-obi=kɛ=bɔ̃   ɸ-r-a-hi-dɔ̃=r-ɛrɪ
        child   3.LOC   3-CTFG-INTR-see=POT=LOC   3-CTFG-INTR-cry-VERB=CTFG-PROGR
        'Wanting to see it, the child is crying.'

[6] Although basically unstressed, clitics such as the tense-aspect morphemes and postpositions become stressed when attached to monosyllabic stems: *hɛ=dɪ* 'with firewood' [hɛˈdɪ], *r-a=kəre* 'he will go' [raˈkre].

The series of personal prefixes occurring with class I and class II stems are summarized in Table 5. Whereas class I prefix series distinguishes a reflexive third person (*ɗa-*) from a non-reflexive one (*i-*), class II series has only one third person prefix (*ɗ-*), which covers the range of meanings of both reflexive and non-reflexive third persons. Furthermore, class II stems present a prefix *ɗ-* or *l-* in the first person, in the 'citation form,' and when preceded by a nominal possessor[7]. The function of this prefix is synchronically opaque, but its distribution resembles that of the so-called 'relational prefixes', 'linking morphemes' which are described for other Macro-Jê languages (Karirí, Boróro, Ofayé, and the Jê family), as well as for Tupí and Carib languages (RODRIGUES, 1994, 2000; RIBEIRO, forthcoming b). The characteristics of these prefixes will be further discussed in *A note on relational prefixes*.

Table 5. Possessive prefixes[8]

Person	Class I	Class II
1st	*wa-*	*wa-*
2nd	*ã-*	*ø-*
3rd	*i-*	*ɗ-*
3rd REFL	*ɗa-*	

Verb stems may also be distributed between both lexical classes. When nominalized, they take exactly the same series of prefixes summarized in Table 5. Stems from both classes also differ in terms of verbal inflection. While class I intransitive verbs such as *ɗɔɗəkɛ* 'to become hot' (12a) are generally marked by the prefix *a-*, class II intransitive verbs such as *udəɗə* 'to become cold' (12b) are marked by a zero allomorph. In addition, transitive class II stems occur with the prefixes *l-* and *ɗ-* (mostly when preceded by an incorporated object) or *ɗ-*[9]:

(15) a. hǝri   wa-ra   ø-r-ɪ-ɗ-ʋahɪ-dɕ̃=r-a
          shaman   1-nephew   3-CTFG-*ɗ*-medicine-VERB=CTFG-PERF
          'The shaman medicated my nephew.'

     b. hǝri   ø-r-ɪ-wa-l-ʋahɪ-dɕ̃=r-a
          shaman   3-CTFG-TR-1-REL-medicine-VERB=CTFG-PERF
          'The shaman medicated me.'

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[7] There distribution of these two allomorphs of the *relational prefix*, *ɗ-* (such as in *ɗ-ɛbɔ* 'hand') and *l-* (such as in *l-ʋahɪ* 'medicine'), is not phonologically conditioned, and is subject to dialectal variations with some stems. As mentioned in *Phonology*, the *relational prefix* and the third person prefix *ɗ-* are palatalized before [high, +ATR] vowels, being pronounced as [dʒ] and [tʃ] respectively: *d-u* 'tooth' [dʒu'u]. *ɗ-u* 'his tooth' [tʃu'u].

[8] Although all class II stems are vowel-initial and most of class I stems are consonant-initial, the distinction cannot be reduced to phonological terms, since class I also includes some vowel-initial stems, such as ♀*ãθikɔ* 'arm' (♂*ãθiɔ*), *ɛθõ* 'cotton', *ari* 'to gather', *eθi* 'younger brother', etc.

[9] Although the prefix *ɗ-* may be analyzed as a third-person object marker in examples such as this, that is not always the case. Stems containing this prefix also occur in clearly intransitive constructions, including antipassive (a process resulting in the syntactic elimination of the direct object position). Although that was probably the original meaning of this prefix (as is still the case with noun stems), its synchronic distribution is somewhat irregular.

A NOTE ON RELATIONAL PREFIXES

Considering that the distinction between class I and class II stems plays an important role in inflectional morphology, a note on the distribution of relational prefixes (which underlies the distinction between both classes) will be necessary. Although the characteristics of these morphemes may vary to a certain degree in the different languages, I find it useful, for comparative purposes, to preserve the label 'relational prefix', since such morphemes seem to be reconstructible for Proto-Macro-Jê (RIBEIRO, 2003)[10]. In most families for which the existence of relational prefixes has been proposed, they tend to involve an alternation between a 'hard' and a 'soft' prefix (that is, *ɗ* versus *d ~ l*, in Karajá; *s-* versus *r-* in Tupinambá, etc)[11] .

In languages in which the distinctions between *hard* and *soft* forms have not been obliterated by phonological, morphological, or semantic causes, their distribution is straightforward. The soft form occurs whenever a noun, verb, or adposition is preceded by its syntactic argument (that is, the absolutive argument of a verb, the object of a postposition, or the possessor of a noun). In Tupinambá, according to Rodrigues (1994), the prefix *r-* occurs when either a noun, a descriptive verb, a transitive verb, or a postposition is immediately preceded by a determining noun (15a), whereas the prefix *s-* (15b) "occurs when the determined item is not immediately preceded by the determining one". The parallel with some class II stems in Karajá is notable, as shown by the examples involving the stem *e* 'wing, feather' (16):

(16) a. wyrá   *r*-ába   b. *s*-ába
         bird   REL-feather   3-feather
         'the feather of the bird'   'its feather'

(17) a. dawəkɪ   *d*-e   b. *ɗ*-e
         bird   REL-feather   3-feather
         'the feather of the bird'   'its feather'

In his earlier analyses of Tupinambá morphology, Rodrigues (1953) labels as 'relational prefix' (prefixo de relação) only the prefix *r-* (an analysis which I preserve for Karajá *d- ~ l-*, as well as their equivalents in other Macro-Jê languages). However, in more recent analyses he extends this term to *s-*, which is described as a

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[10] Some authors (such as Fortune, D. and Fortune, G. (1964), for Karajá, and Silva and Salanova (2000), for the Northern Jê language Mebengokrê) treat the 'soft' consonant as part of the stem, postulating morphophonemic rules to derive the third-person forms. However, no matter how one analyzes them synchronically (whether as prefixation or consonant gradation of some sort), alternations such as the ones illustrated are found in all three branches of the Jê family (Southern, Central, and Northern), and can be reconstructed for Proto-Jê. I propose elsewhere (RIBEIRO, forthcoming b), phonological correspondences corroborate the hypothesis that the alternations between *ɗ-* and *d- ~ l-* in Karajá have the same origin as the ones found in Jê.

[11] These characteristics seem to point out to a phonologically-motivated origin of the relational prefixes, which may have originated as a sandhi phenomenon between vowel-initial stems and their determiners. As I suggested in an earlier squib (RIBEIRO, 2003), the distribution of relational prefixes may have an interesting diagnostic value in determining the relative age of pronominal prefixes in Macro-Jê. Prefixes that occupy the same morphological slot as the relational prefixes (such as the third-person marker *ɗ-* and the second-person marker *ɸ-* in Karajá) would be older than the ones which co-occur with relational prefixes. This pattern is also attested in Kariri, Ofayé, and Maxakalí (in the latter, as a morphologically relic) (RIBEIRO, 2003). The zero second-person marker with class II stems is likely a result of the coalescence of the prefix *a-* when attached to vowel-initial stems. The few class I stems which are vowel-initial may have been originally consonant-initial, the initial consonant having been dropped after the distinctions between class I and class II were already in place.

relational prefix marking 'non-contiguity' (as opposed to *r-*, a marker of 'contiguity'). Such an analysis tends to complicate a subject matter which is mostly trivial. As my translation of the examples suggests, the 'non-contiguity' marker is probably better analyzed as a third person marker. Stems showing the opposition illustrated are generally inherently relational (that is, they must occur with a syntactic argument), such as obligatorily possessed nouns (including kinship and body-part terms), postpositions, and verbs. Since these stems tend to lack an unmarked 'citation form,' this role is commonly played by third-person forms, hence the 'coincidence' between third-person and the so-called non-contiguity markers[12].

In Karajá, the use of *d-* and *l-* as linking morphemes is still evident in cases such as *e* 'feather', which is an obligatorily possessed noun, and with verbs (15). However, with a number of class Ⅱ stems – such as *d-ɛbɔ* 'hand', *d-eθi* 'bracelet', *d-u* 'tooth' –, forms with the prefixes *d-* and *l-* have a more generic, 'citational' use. This is probably a consequence of a general, ongoing process of weakening of the opposition between obligatorily possessed and optionally possessed nouns in Karajá, which affects not only class Ⅱ stems, but also class Ⅰ stems. Thus, besides those stems that are obligatorily possessed (such as *d-e* 'feather', *d-urə* 'tip', and *kɔ*ɪ 'face') and those that are optionally possessed (such as *d-ɛbɔ* 'hand', *l-ʋahɪ* 'medicine', *d-õirəθa* 'flower', and *wa* 'foot'), there are a number of stems whose behavior is subject to variation among individual speakers[13]. This is the case of the stems *θɪ* 'egg' and *dɪ* 'leg, bone', for which younger speakers tend to coin unmarked citation forms, while older speakers use third-person forms for that purpose.

Derivational morphology

As we have seen, there are clear inflectional criteria to distinguish nouns from verbs in Karajá. There are also clear derivational devices to create verbs from noun stems, and vice-versa. Virtually any noun can be verbalized by the suffix *-dɔ̃* (18). On the other hand, there are a number of morphological devices to derive nouns from verbs (deverbal nouns will be discussed in *Nominalized complements*).

(18) ♂   ɗa-baɨ-rɛhɛ   ɸ-r-ɪ-ɗ-u-*dɔ̃*=bɔ̃hɔ̃=r-e
        3REFL-knife-long   3-CTFG-TRANS-3?-tooth-*VERB*=HAB=CTFG-IMPRF
        'He sharpens [lit. provides teeth to] his machete.'

Postpositions

Considering that postpositions play an important role in some subordinate clauses, this section provides a succint description of their morphological and semantic characteristics. There are at least ten postpositions in Karajá (Table 6). Except for the reflexive (marked by the prefix *iθi-*, an allomorph of the reflexive prefix which occurs with verbs), postpositions take in general the same series of prefixes as class Ⅰ noun stems (Table 7).

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[12] In Tupinambá, non-obligatorily possessed class Ⅱ stems such as *óka* 'house' and *uúba* 'arrow' indeed occur without any prefix in their citation form, a fact which rules out the analysis of Tupinambá **s-** as a 'non-contiguity marker' The same is true for Karirí, where class Ⅱ stems such as *era* 'house' also occur without any prefix in their unpossessed form.

[13] With two kinship terms, *adɪ* 'mother' and *ɛrɔ̃* 'sister', unpossessed forms with the relational prefix have a first-person meaning, probably as a consequence of the vocative use of these stems: *d-adɪ* 'my mother', *ɸ-adɪ* 'you mother', *d-adɪ* 'his mother' (but *wa-d-adɪ 'my mother'); *l-ɛrɔ̃* 'my sister', *ɸ-ɛrɔ̃* 'your sister', *d-ɛrɔ̃* 'his sister' (but **wa-l-ɛrɔ̃* 'my sister'). While the stem *ɛrɔ̃* can occur with nominal possessors (*ɗori l-ɛrɔ̃* 'the White man's sister'), *adɪ* cannot (the stem *θɛ* being used instead: *ɗori θɛ* 'the White man's mother').

Exceptions are the postposition =bə̃, which takes the prefix ʋ- in the second person (the only occurrence of this prefix whatsoever) and the allative postposition kɔ, which does not seem to occur with prefixes[14]. In addition, =bə̃ 'diffuse locative', =kɪ 'stationary locative', and =dəkɛ 'dative' present suppletive pronominal forms for the third person (ɗʋ, ɗai, and ɗabə̃, respectively)[15]. Most of the postpositions are unstressed, with the exception of the dative dəkɛ and the the evitative ♀laku (♂lau).

Table 6. Karajá postpositions[16]

Postposition	Approximate translation	3rd person suppletive form
kɪ	'stationary locative'	ɗai
ɗi	'dynamic locative'	
bə̃	'diffuse locative'	ɗʋ
♀ku, ♂u	'temporal'	
rəbɪ	'ablative'	
dɪ	'instrumental'	
dəkɛ, ♂dɛɛ	'dative'	ɗabə̃
♀kɔ, ♂ɔ	'allative'	ɗabə̃
♀laku, ♂lau	'evitative'	
wəda	'comitative'	

Table 7. Paradigms for some Karajá postpositions

	'instrumental'	'ablative'	'diffuse locative'	'stationary locative'	'dative'
'man'	hãbu=dɪ	hãbu=rəbɪ	hãbu=bə̃	hãbu=kɪ	hãbu=dəkɛ
1st	wa-dɪ	wa-rəbɪ	wa-bə̃	wa-kɪ	wa-dəkɛ
2nd	ã-dɪ	ã-rəbɪ	**ʋ-bə̃**	ã-kɪ	ã-dəkɛ
3rd	i-dɪ	i-rəbɪ	ɗ**ʋ**	ɗ**ai**	ɗ**abə̃**
REFL	iθi-dɪ	iθi-rəbɪ	iθi-bə̃	iθi-kɪ	iθi-dəkɛ

---

[14] Both the allative postposition =kɔ and the dative postposition =dəkɛ mark the recipient or the direction of a given process. Although both can occur with nouns, =dəkɛ seems to occur only with [+animate] nouns, while =kɔ can occur with both [+animate] and [-animate] nouns. Because of this semantic constraint, =dəkɛ occurs more frequently in functions that are traditionally associated with that of datives. As mentioned before, kɔ do not take prefixes. Thus, corresponding to both postpositions, there is only one set of inflected forms: wa-dəkɛ 'to me', ã-dəkɛ 'to you', ɗabə̃ 'to him', iθi-dəkɛ 'to himself'.

[15] As I suggest elsewhere (Ribeiro forthcoming c), considering that all three suppletive third-person forms begin with /ɗ/, it is likely that they are relics of class II postpositional paradigms. That is, the first consonant in ɗʋ, ɗai, and ɗabə̃ would have been third-person forms of postpositions which are no longer in use. In that case, ɗʋ would have been diachronically the third-person form (< *ɗʋ) of a class II postposition *ʋ, while the prefix ʋ- would trace back to a second-person form of the same postposition (< *∅-ʋ), which was later reinforced by the postposition =bə̃. This would help to explain the rather limited distribution of this prefix.

[16] Other morphemes, such as ♀kʋku 'in front of' (♂ko) and wəθɛ 'equative', may be added to this list, although their syntactic status is not as clear as the one of the postpositions listed in Table 6. Like noun stems, they can be followed by postpositions. Unlike noun stems, they may, in certain circumstances occur in adverbial functions *without* any marker of adverbial status. Their syntactic properties are reminiscent of the noun *home* in English, which can, in certain constructions, occur with adverbial functions without any preposition (*I brought you* home, but **I brought you* to home). Since a thorough description of their behavior is beyond the scope of this paper, they will not be further discussed here.

Considering the semantic idiosyncrasies that generally caracterize adpositions, naming them is only a first attempt towards defining their semantic properties[17]. Although the translation of some of the postpositions listed is rather straightforward (vis-a-vis their approximate translation given in Table 6), a number of them require further explanation (either because of their highly polysemic nature, or because of the semantic subtleties that differentiate them). Although a complete account of the semantic properties of postpositions is beyond the scope of this paper, a brief explanation of the meanings most commonly associated with some of them shall be helpful in understanding their use with subordinate clauses.

The evitative postposition indicates what is to be avoided or feared, marking the oblique complements of verbs such as *ʊbɛrʊ* 'to be freightened' (19) and *wɔ* 'to hide', example (8)[18]. An example of the temporal postposition ('when') is given in (20). Besides indicating source ('from'), the ablative postposition marks objects of comparison (21).

(19) ♂   wa-riɔrɛ   *ɗori=lau*   ɸ-r-ɸ-ʊbɛrʊ=r-ɛrɪ
             1-child   White=*EVIT*   3-CTFG-INTR-be.freightened=CTFG=PROGR
             'My child is afraid *of the White man.*'

(20) ♂   *wira=u*   wa-heɗo   a-r-ɪ-wɪ-dɜ̃=kəre
             dry.season=*TEMP*   1-house   1-CTFG-TRANS-make-VERB=FUT
             'I will build my house *in the dry season.*'

(21)   waha   i-rariɛ=r-e   bʊ=rəbɪ
          my.father   3-height=CTFG-IMPRF   2.father=*ABL*
          'My father is taller *than your father.*'

The dynamic locative =*ɗi* [tʃi] is used with figures in motion (23), while the stationary locative =*kɪ* occurs with static figures (22). While both =*ɗi* and =*kɪ* denote more precise paths, the diffuse locative =*bɜ̃* denotes more widespread, less 'pinpointable' paths (24) and (25)[19].

(22) ♂   dəkɪ   θohodi   ɨwa=*kɪ*   ɸ-d-a-rɪ=d-e
             he   one   jatobá=*LOC*   3-CTPT-INTR-leave=CTPT-IMPRF
             'He was left alone *on the jatobá tree.*'

---

[17] A good example of the problem posed by the translation of adpositions is the preposition *by* in English, which has instrumental (*he went by train*), locative (*he is by the fountain*), and temporal (*I'll be back by midnight*) uses, among others. The criteria to determine the 'basic' meaning of postpositions may be fairly arbitrary. In labeling the Karajá pospositions, I took into consideration what seems to be their more general, productive, and non-idiomatic uses (as far as possible).

[18] Kariri, a Macro-Jê language remotely related to Karajá, also has an evitative postposition (MAMIANI, 1877). According to Blake (1994), evitative (also called 'aversive') case markers are also common in Australian languages.

[19] These semantic characterizations are approximations. For the concepts of *figure* and *path* adopted here, see Talmy (1985), who defines figure as "the salient moving or stationary object in a motion event" and path as a category which "refers to the variety of paths followed, or sites occupied, by the Figure object".

(23) ♂ urɪθɪrɪ   bɛra=*di*   ɸ-r-ɛ-θɛ=r-e
          Urisiri   water=*LOC*   3-CTFG-INTR-fall=CTFG-IMPRF
          'Urisiri jumped [or fell] *into the water.*'

(24) ♀ dɔrɛ   bədɛraku=*bɔ̃*   ɸ-r-ɸ-ɔ̃i=bɔ̃hɔ̃=r-e
          parrot   wetland=*LOC*   3-CTFG-stand.up=CTFG-IMPRF
          'The parrot lives *in the wetlands.*'

(25) ♀ ɔwɔrʊ   rʊrʊ=*bɔ̃*   bədɪ   ɸ-r-ɪ-ɛ=r-e
          tree   branch=*LOC*   honey   3-CTFG-TRANS-look.for=CTFG-IMPRF
          'He searched for honey *in the tree's branches.*'

Besides its more clearly locative uses, **=bɔ̃** can be used to indicate destination (26), time (27) and manner (28) and (29)[20]. The oblique complements of verbs such as *ask, say*, *call*, *name*, *think* and *tell* (that is, the complements denoting that which is said, heard, thought, asked, or told) are also marked by the postposition **=bɔ̃** (30). As we will see, this semantic diversity accounts for the use of this postposition to mark both purpose clauses and converbs, as well as sentential complements of verbs such as *say*, *tell*, etc[21].

(26) ♂ wa-oworu=*bɔ̃*   a-r-ɸ-a=kəre
          1-garden=*LOC*   1-CTFG-INTR-go=FUT
          'I will go *to my garden.*'

(27) ♂ waha   biuraθɔ=*bɔ̃*   kə-d-ɸ-a=kəre
          my.father tomorrow=*LOC*   3-CTPT-INTR-go=FUT
          'My father will come *tomorrow.*'

(28) wɨ=*bɔ̃*   ɸ-r-ɸ-obu-dɔ̃=r-a
      speed=*LOC*   3-CTFG-INTR-swim-VERB=CTFG-PERF
      'He swam *quickly.*'

---

[20] Although the range of meanings displayed by some of the Karajá pospositions may at first seem unusual, it is very easy to find parallels in other, well-known languages such as English or Portuguese. The use of locative postpositions with temporal purposes (as a metaphorical extension from *location in space* to *location in time*), for example, is a rather common phenomenon. Even more idiosyncratic uses of postpositions (as non-canonical markers of what would be translated as direct objects in English) may also reflect cross-linguistic tendencies. As Jespersen (1965) points out, verbs for 'to throw' take objects marked as instrumentals in many languages, including Old Norse. The use of a locative posposition to mark the object of a verb such as ♀ **rakuθi** 'to eat' (♂ **roθi**) is paralleled in English by the use of *on* in constructions such as *deer feed on grass* or *the castaway lived on coconuts for weeks*.

[21] This apparent diversity of meanings could be due not to polysemy, but to homophony (that is, instead of these being instances of different meanings associated with a single postposition, it could be the case that there would be different postpositions with the same phonological shape). However, the fact that a postposition such as **bɔ̃** presents the same irregular allomorphy in all the uses mentioned seems to rule out the hypothesis of accidental similarity.

(29) ɗa-ɗɪ=le=bə̃   ɸ-r-ɸ-a=r-ɛrɪ
      3REFL-leg=EMPH=LOC   3-CTFG-INTR-go=CTFG-PROGR
      'He is coming *on foot*.'

(30) wa-bɪɔwa   boho *kawidã=bə̃*
      1-friend PL   Kawina=LOC

      ɸ-r-ɪ-wa-ɗĩɗĩ=bə̃hə̃=r-e
      3-CTFG-TR-1-name=CONT=CTFG-IMPRF
      'My friends call me *Kawina*.'

NON-CANONICAL OBJECT MARKING

A number of verbs which would be translated as transitives in English or Portuguese have objects marked by oblique postpositions in Karajá. For example, the verb *obi* 'to see' takes objects marked by the locative postposition *=bə̃*; *ehu* 'to throw' take complements marked by the instrumental postposition *=dɪ*; *aha* 'to find' takes complements marked by the locative postpositions *=ɗi or =kɪ* [22]. The verb ♀ *rakuθi* 'to drink' (♂*roθi*), although marked by the prefix *ɪ-*, which generally occurs with transitive verbs, takes objects marked by the posposition *=bə̃* [23].

(31) kai   wa-*bə̃* ɗa-d-obi=ɗ-e
      you   1-*LOC*   2-CTPT-INTR-see=2-IMPRF
      'You saw me.'

(32) ɗariɔrɛ=dɪ   biu=rəbɪ=hɪkə̃   ɸ-r-ɸ-ehu=r-e
      3.REFL-child=*INSTR*   high=ABL=big   3-CTFG-INTR-throw=CTFG-IMPRF
      'He threw his child from a very high altitude.'

(33) ɗəkɪ hã̃wa   wiɗira=*di*   ɸ-r-ɸ-aha=r-a
      he   place   different=*LOC*   3-CTFG-INTR-find=CTFG-PERF
      'He found a different place.'

(34) ɔhã   hɛka iθə̃dɔ=*bə̃*   ɸ-r-ɪ-roθi=bə̃hə̃=r-e
      armadillo   ASSRT   worm=*LOC*   3-CTFG-TRANS-eat=HABIT=CTFG-IMPRF
      'The armadillo eats worms.'

Although they occur with an 'object,' all these verbs behave as intransitives. As such, they do not inflect for voice and cannot incorporate their objects.

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[22] As in English or Portuguese, the verb *aha* 'to find' is also used with an 'evaluative' meaning (as in *I found the play annoying*). In this case, the evaluative NP is marked by the postposition *=bə̃*:

(i) hãbu i-bɪda=*bə̃*   *ɗai* ɸ-r-ɸ-aha=r-e
     man   3-bad=*LOC*   3.*LOC* 3-CTFG-INTR-find=CTFG-IMPRF
     'The man found it bad'

[23] Another verb which presents a similar irregular behavior is *õ* 'to drink'.

RELATIVE CLAUSES

For the sake of terminological clarity, I will adopt here the basic terminology employed by Keenan (1985). Like Keenan, I regard relative clauses to be full NPs (a fact that is rather clear in Karajá, where relative clauses can take articles, as we have seen, and postpositions, as it will be shown below). As Keenan points out, a relative clause typically consists of a common noun (or a pronoun), the *domain noun*, optionally accompanied by determiners, and a restrictive clause:

> *Semantically the common noun determines a class of objects, which we shall call the domain of relativization, and the restrictive clause identifies a subset of the domain, those elements which satisfy the conditions given by the restrictive clause* (KEENAN, 1985).

Thus, in **ɗori dɔrɔ=dé** 'a White man who arrived', **ɗori** 'White man' is the domain noun, and **dɔrɔ=dé** 'who arrived' is the restrictive clause.

As we have seen, the only surface difference between the independent clause in (1) and its subordinate counterpart in (2) is in the location of the stress: [ɗo'ri do'rode] 'the White man arrived' versus [ɗo'ri doro'de] 'the White man *who* arrived'. In fact, stress shift is the basic mechanism to mark the subordinate status of relative clauses that modify core NPs (that is, subjects and direct objects). That the subordinate clause occupies the position of an NP is further demonstrated by the fact that it can be followed by the enclitic indefinite article ♀ =dõ, ♂ =õ (36), which attaches to the rightmost element of an NP (35). In addition, an NP modified by a subordinate clause can still act as a possessor, and, in these cases, the possessed noun will occur *after* the subordinate clause (37)[24]. Notice that the relative clause is postnominal, occurring after the modified noun. This fact, as we will see (*Nominalized Complements*), reflects the general distribution of modifiers in attributive constructions.

(35) ♀   ɗori=dõ   ɸ-d-ɸ-ɔrɔ=d-e
            White=*INDEF*   3-CTPT-INTR-go.ashore=CTPT-IMPRF
            '*A white man came ashore.*'

(36) ♀   ɗori   ɸ-d-ɸ-ɔrɔ=d-é=dõ
            White   3-CTPT-INTR-go.ashoreCTPT-IMPRF=*INDEF*

            wa-rikoko   ɸ-r-ɪ-kõbra-dɜ̃=r-a
            1-clay.doll   3-CTFG-TRANS-buy-VERB=CTFG-PERF
            '*A White man who came ashore bought my clay dolls.*'

(37) ♀   ɗori   ɸ-d-ɸ-ɔrɔ=d-é   l-ɛrɜ̃
            White   3-CTPT-INTR-go.ashore=*CTPT-IMPRF+SUBRD*   REL-sister

            wa-rikoko   ɸ-r-ɪ-kõbra-dɜ̃=r-a
            1-clay.doll   3-CTFG-TRANS-buy-VERB=CTFG-PERF
            '*The sister of the White man who came ashore bought my clay dolls.*'

---

[24] Notice that example (37) is only grammatical if *l-ɛrɜ̃* is interpreted as being the head of the preceding construction. As we have seen (see footnote 12), *l-ɛrɜ̃* has a first person-meaning when occurring by itself, but is otherwise obligatorily possessed.

Examples (2), (36), and (37) illustrate restrictive clauses which modify domain nouns in subject position. The examples (38) and (39) illustrate relative clauses modifying the direct objects of the transitive verbs ♂ *urihi* 'to try' (♀ *kurihi*) and *rəθɨ̃* 'to eat':

(38) ♂ *bãɗʋarɪ*   *kʋa* ϕ-d-ϕ-ʋdɜ̃=d-$\acute{\epsilon}$
       old.man   that[5] 3-CTPT-INTR-sit=CTPT-IMPRF+SUBORD

      b-ϕ-ɪ-urihi=b-ɛdɜ̃=kɛ
      2-CTFG-TRANS-try=2-PLURAL=POT
      'Try *that old man who is sitting there*.'

(39) kai   rəθɨ̃-da   ã-d-ɪ-wɨ=*d-$\acute{\epsilon}$*
      you   eat-nom   *1-CTPT-TRANS-carry=CTFG-IMPRF+SUBORD*

      ɗa-d-ɪ-rəθɜ̃ɗ-e
      2-CTPT-TRANS-eat=2-IMPRF
      'You ate the food that I brought.'

In all the examples, the domain noun occupies the position of a core argument of the verb (subject or direct object), which are not morphologically marked in Karajá. However, when the domain noun is an oblique NP, the postposition that marks such NPs will occur after the restrictive clause, cliticized to the verb (a further argument for the nominal status of the relative clause). Thus, while with core arguments stress shift may be the only surface indicator of subordination, in examples such as (37) the postposition can also be seen as an indicator of the subordinate nature of the clause. Notice that stress shift also occurs in those cases in which the subordinate verb is followed by an article or a postposition. In such cases, however, stress shift may be analyzed as being triggered by the article or the postposition (*Possible origins of the subordinating accent*). Stress shift will only be indicated in this paper in cases in which it is the only surface marker of subordination.

In (40), the relative clause modifies the object of the verb ♀ *rakuθi* 'to eat' (♂ *roθi*), which is marked by the postposition *=bɜ̃*, as we have seen (34). The postposition marking the object will occur after the relative clause. This is further illustrated by examples of relative clauses modifying the objects of the postpositions *=bɜ̃*, *=laku*, and *=kɪ*:

(40) ♂ *kia=rɛdɜ̃* ϕ-r-ϕ-ɜ̃i=r-ɛrɪ=le=bɜ̃
       that=PL   3-CTFG-INTR-stand.up=CTFG-PROGR=EMPH=LOC

      b-ϕ-i-roθi=bɜ̃   b-ϕ-ϕ-ã=b-e=kəre
      2-CTFG-TRANS?-eat=LOC   2-CTFG-INTR-go=2-IMPERF=FUT
      'You will be eating *just those [animals] standing there*.'

---

[25] *kʋa* 'that (distant from both the speaker and the addressee)' is a demonstrative (not a relative pronoun, as the translation of the example may suggest). There are two other demonstratives in Karajá, *ka* 'this' and *kia* 'that (close to the addressee)' (see example 40).

(41) kai   hãbu   ɸ-r-a-idʒəra-dɔ̃=r-ɛrɪ=*bɔ̃*
      you   man   3-CTFG-INTR-run=VERB=CTFG-PROGR=*LOC*

      ɗa-ɸ-bi=ɗ-a

      2-CTFG-INTR-see[26]=2-PERF
      'You saw the man running.'

(42) ♂   wa-riɔrɛ   ɗori   d-ɸ-ɔrɔ=d-e=*lau*
             1-child   White   3-CTPT-INTR-go.ashore=CTFG-IMPRF=*EVIT*

             ɸ-r-ɸ-ʊbɛrʊ=r-ɛrɪ
             3-CTFG-INTR-be.frightened=CTFG-PROGR
             'My child is afraid of the White man who came ashore.'

(43) ♂   kai   ɗa-d-a-hãwa-dɔ̃=bəhɔ̃=ɗ-e
             you   2-CTPT-INTR-place-VERB=HAB=2-IMPRF

             heɗo   r-ɛ-wɪ-dɔ̃=r-e=kɪ
             house   CTFG-1+TR-make-VERB=CTFG-IMPRF=LOC
             'You live in the house that I built.'

Internal versus external relative clauses

Another important distinction is between *internal* and *external* relative clauses, according to the location of the domain noun (whether inside or outside the relative clause, respectively) (KEENAN, 1985). In all the examples given so far, the domain nouns are inside the relative clauses. However, examples in which the domain noun is outside the relative clause are also easily attested.

(44) kai   rəθɔ̃dã
      you   food

      ɗa-d-ɪ-rəθɔ̃ɗ-e   ã-d-ɪ-wɨ=*d-ɛ́*
      2-CTPT-TR-eat=2-IMPRF   1-CTPT-TRANS-carry=*CTPT-IMPRF+SUBRD*
      'You ate the food that I brought.'

When an oblique domain noun is separated from the relative clause, notice that the postposition marking the oblique NP occurs twice – with both the domain noun and the subordinate clause. That is, the stranded relative clause agrees in case with the domain noun:

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[6] Intransitive class II verb stems such as *obi* 'to see' lose their initial vowels in the first and second persons of the realis mood: in the example, the underlying form of the verb is *ɗa-obi=ɗ-a* [ɗa-ɪbiɗa].

(45)   iwɛrʊ=bɔ̃   r-ɛ-õ=r-a   φ-ãdɪ
       porridge=LOC   CTFG-1+TR=DRINK=CTFG-PERF   2-mother

       φ-r-ɪ-ɗ-ʊra-dɔ̃=r-e=*bɔ̃*
       3-CTFG-TRANS-ɗ-cook-VERB=*CTFG-IMPRF=LOC*
       'I drank the porridge that your mother cooked.'

Pronoun retaining strategies

In the previous sections, we concentrate on the syntactic properties of the domain nouns. In this section, attention will be given to the relativized position – that is, the position in the relative clause which is co-referential with the domain noun. In all the examples of relative clauses presented so far, the relativized position corresponds to a core argument of the subordinate clause – either the subject, as in (38), or the direct object, as in (39). As these examples show, there is no surface indication of which position is relativized, which is indicated by gapping – that is, the relativized NP is simply absent from the relative clause. This lack of explicit indication of which position is relativized may lead to ambiguity when one has a third-person transitive verb with a third-person object. Thus, in both examples, the relativized position may be interpreted as being either the subject or the direct object of the subordinate clause:

(46)   ♂   hãwɨɨbɔ̃   r-a-φ-bi=r-a
           woman=LOC   CTFG-1-INTR-see=CTFG-PERF

           hãbu   φ-r-ɪ-həɗɛ-dɔ̃=r-a=bə
           man   3-CTFG-TRANS-hit-VERB=CTFG-PERF=LOC
           'I saw the woman who hit the man.'
           'I saw the woman who the man hit.'

(47)   ♂   hãwɨɨ   hãbu   φ-r-ɪ-həɗɛ-dɔ̃=*r-á*
           woman   man   3-CTFG-TRANS-hit-VERB=*CTFG-PERF+SUBORD*

           φ-r-φ-ɛhɛbɔ̃-dɔ̃=r-ɛrɪ
           3-CTFG-INTR-arrive-VERB=CTFG-PROGR
           'The woman who hit the man is arriving.'
           'The man who hit the woman is arriving.'

Subject and direct objects are the positions which tend to be more easily relativizable cross-linguistically, when compared with other syntactic positions. The hierarchy of which positions are more likely to allow relativization is thus summarized by Keenan and Comrie (1977):

(48)   Keenan and Comrie's (1977) Accessibility Hierarchy:
       Subject > Direct Object > Indirect Object > Object of Adposition > Possessor

While subject and direct object relativized positions are not marked in Karajá, relativized positions occupying a lower position in the accessibility hierarchy are marked by a third-person pronominal form. That is,

relativization of any syntactic position besides subject and direct object is accomplished through 'pronoun retaining' strategies. This is the case for objects of all the postpositions (including the dative, which behaves as any other oblique NP in the language, and objects of comparison), as well as possessors. Examples of relativized locative (49), ablative (50), and genitive (51) positions:

(49) kai   hãwa=rəbɪ   ɗ-ɸ-ɸ-ɛhɛbɔ̃-dɔ̃=ɗ-ɛrɪ
      you   place=ABL   2-CTFG-INTR-arrive-VERB=2-PROGR

      ɗai   r-a-hãwa-dɔ̃=bɔ̃hə=r-e=rəbɪ
      3.LOC   CTFG-1+INTR-place-VERB=CTFG-IMPRF=ABL
      'You are arriving from the village *where I live.*'
      [lit. 'You are arriving from the village *[that] I live in it.*']

(50) dɪarɔ̃   hãwa=kɪ   r-a-hãwa-dɔ̃=bɔ̃hə=r-e
      I   place=LOC   CTFG-1+INTR-place-VERB=CTFG-IMPRF

      i-rəbɪ   ɗ-ɸ-ɸ-ɛhɛbɔ̃-dɔ̃=ɗ-ɛrɪ=kɪ
      3-ABL   2-CTFG-INTR-arrive-VERB=2-PROGR=LOC
      'I live in the village *where you are coming from.*'
      [lit. 'I live in the village *[that] you are coming from it.*']

(51) dɪarɔ̃   hãwɨɨ=bɔ̃   r-a-ɸ-bi=r-a
      I   woman=LOC   CTFG-1-INTR-see=CTFG-IMPRF

      i-hãbu   ɸ-r-ɸ-ʊrʊ=r-a=bɔ̃
      3-man   3-CTFG-INTR-see=CTFG-PERF=LOC
      'I saw the woman *whose husband died.*'
      [lit. 'I saw the woman *[that] her husband died.*']

Possible origins of the 'subordinating accent'

As we have seen, stress shift plays an important role in subordination in Karajá. This device – which we may call 'subordinating accent' – is reminiscent of the 'definite accent' in Tonga, described by Anderson (1992) as an example of non-affixal clitic. In this language, according to Anderson, "the normal location of stress is on (the syllable containing) the penultimate mora. A sort of definiteness is marked by a stress shift to the final mora of the entire NP". In this case, the stress shift is explained as being the reflex of a demonstrative morpheme *a* which would have existed diachronically.

A similar state of affairs may very well have been the diachronic source of the 'subordinating accent' in Karajá. The shift could have been originally triggered by a subordinating morpheme of some sort[27], which would have later disappeared, leaving stress shift as evidence of its diachronic existence. In fact, stress shift is not

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[27] This 'subordinating' morpheme could have been a nominal clitic, such as an article (which thus pair with the indefinite article ♀ =dɔ̃).

restricted to subordination environments, but occurs regularly whenever a clitic tense-aspect marker morpheme is followed by a postposition or another tense-aspect marker. Thus, for example, although the imperfective marker *=r-e* is intrinsically unstressed, it becomes stressed when followed by the future marker *=kəre*, as in the examples (52):

(52) a.   [ri'rore]
         ∅-r-ɪ-rɔ=r-e
         3-CTFG-TR-eat=CTFG-IMPRF
         'He *eats* it' or 'he *ate* (it).'

     b.   [riro'rekre]
         ∅-r-ɪ-rɔ=r-e=kəre
         3-CTFG-TR-eat=CTFG-IMPRF=FUT
         'He *will be* eating (it).'

Another possible origin would be a more general, delimiting use of stress (common in languages where stress is predictable), to mark the boundaries of the noun phrase. However, given the lack of comparative evidence, one can only speculate on the origins of such phenomenon[28].

Previous descriptions

In spite of its extreme pervasiveness, the phenomenon of the 'subordinating accent' was not mentioned in previous accounts of Karajá grammar (FORTUNE, D.; FORTUNE, G., 1964; FORTUNE, D.; 1970; FORTUNE, D.; 1973; MAIA, 1998). In his typological study, Maia states that he was able to find "hypothetical relative constructions" only through direct elicitation, "similar structures not being detected in the texts analyzed" (MAIA, 1998)[29]. The 'hypothetical' here relates to the fact that he could not identify any relative pronoun (or any subordinating morpheme, for that matter) in the constructions considered. Notwithstanding this, the examples of 'hypothetical relative constructions' that he provides (reproduced in (53) and (54) with my own transcription and morphological segmentation) very likely presented the stress shift illustrated. Since Maia relies on the rather inaccurate orthography used in Karajá schools, the stress shift went unnoticed in his analysis[30].

Maia's examples of "hypothetical relative constructions" reanalized (MAIA, 1998)[31]

(53) wɛrɪrɪ   dɔlɔra   ∅-d-ɪ-wɪdə̃=*d-έ*
      basket   Dolora   3-CTPT-TRANS-make=*CTPT-IMPRF+SUBORD*

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[28] Sinchronically, one could postulate the existence of a 'zero clitic' to account for the stress shift. Since this more abstract analysis does not necessarily present any analytical advantage, I will adopt a more concrete analysis in this paper, indicating the stress shift whenever necessary.

[29] Although Maia's statement seems to suggest that relative clauses are less common in texts than in elicited materials, that is certainly not the case. Most examples in this paper were indeed taken from texts, where subordination is extremely common. In fact, all the subordinate clause types here described are highly favored constructions in Karajá grammar.

[30] The fact that Maia does not signal any pause between both sentences corroborates my analysis of these examples as cases of subordination, not juxtaposition of two independent clauses ('the man threw the arrow; he saw the guariba monkey'), which would be a rather odd construction in Karajá, given the lack of particles marking any type of relation between the last clause and the preceding one.

[31] Maia's original transcriptions of these examples are *weriri Dolora dewinade kau awire* and *Hãbu wyhy rehura asynihiky-my robina*. In addition to the overall shortcomings of Karajá orthography, Maia's transcription also presents some inaccuracies of its own. For example, the verb *ehu* 'to throw' takes objects marked with the instrumental postposition *=dɪ*, never a 'bare' object as Maia's transcription suggests. This and other inaccuracies are corrected in (53) and (54).

ka=u   awɨ=r-e
PROX=TEMP   good=CTFG-IMPRF
'The basket Dolora made yesterday is beautiful.'

(54)   hã bu   wɨhɨ=dɪ   ɸ-r-ɸ-ehu=*r-á*
        man   arrrow=INSTR   3-CTFG-INTR-throw=*CTFG-PERF+SUBORD*

        aθɔ̃dĩhĩkɔ̃=bɔ̃   ɸ-r-ɸ-obi=r-a
        guariba=LOC   3-CTFG-INTR-see=CTFG-PERF
        'The man who threw the arrow saw the big guariba monkey.'

COMPLEMENTATION

Complement clauses are those which occupy the position of a noun phrase, occuring as arguments of the verb or as objects of postpositions. Like relative clauses, complement clauses in Karajá are also characterized by stress shift. In (55), the subordinate clause is the subject of the main clause, whereas in (56), the subordinate clause is the object of the verb ♀ *kɛri*, ♂ *ɛri* 'to know'.

(55)   a-rɨ♀ɛ=r-e   idʒaˈθɔ   kə-d-ɸ-ɔhɔdɔ̃=kəré
        2-speak.NOM=CTFG-IMPERF   Aruanã   3-CTPT-INTR-exit=FUT+SUBORD
        'You said (lit. it is your word) *that the Aruanãs are coming out*.'[32]

(56)   dɪbɔ̃bo   ɸ-r-a-kɔrarʊ=r-é
        how   3-CTFG-INTR-start=CTFG-IMPERF+SUBORD

        r-ɛ-kɛrɨ=kɔ̃=r-e
        CTFG-1+TRANS-know=NEG=CTFG-IMPERF
        'I don't know *how it starts*.'

With predicates of saying and thinking, such as *ask, say, call, name, think*, and *tell*, the complements denoting that which is said, told, heard, or thought are marked by the postposition =*bɔ̃*, examples (57-61). Therefore, sentential complements of these verbs will also be marked by this postposition. The same happens to complements of the verb *obi* 'to see'.

(57)   hɛ   kə-d-ɪ-wɨ=d-ɛdɔ̃=kəre=bɔ̃
        firewood   3-CTPT-TRANS-carry=CTPT-PL=FUT=LOC

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[32] 'Aruanãs' are masked dancers who represent forest and underwater spirits. Aruanã festivals are among the most highly anticipated events in Karajá social life.

ɸ-r-a-rɨbɛ=r-a
3-CTFG-INTR-speak=CTFG-PERF
'She said *that she would bring firewood*.'

(58)   i-θɛ   ɸ-r-ɨ-ɗ-əᵊ̃raθi-də=r-e
3-mother   3-CTFG-TRANS-3-ask.NOM-VERB=CTFG-IMPERF

aᵊ̃hɛbo   *ɸ-r-ɸ-ʊɗəᵊ̃-dᵊ̃=r-a=bᵊ̃*
what   3-CTFG-INTR-happen=CTFG-PERF=LOC
'His mother asked him *what had happened*.'

(59)   iθᵊ̃=dəkɛ   ɸ-r-ɸ-ɨrɨbᵊ̃ɦ̃   *hᵊ̃wa* *widira=ɗi*
people=DAT   3-CTFG-INTR-yell=CONT   place   different=LOC

ɸ-r-ɸ-aha=r-a=bᵊ̃
3-CTFG-INTR-find=CTFG-PERF=LOC
'He yelled to the people *that he had found a different place*.'

(60)   buhᵊ̃   ikoi   kɨ̧=rəbɪ   wekɨrɨbɔ
dolphin   guys   amidst=ABL young.man

ɸ-r-ɨ-dɨ=r-e=bᵊ̃   ka-r-e-ləkɨ=kəre
3-CTFG-TR-carry.ANIM=*LOC* 1-CTFG-INTR-tell=FUT
'I will tell you [a story about] *the dolphin taking a young man away from his group*.'

(61)   kai   hᵊ̃bu ɸ-r-a-idʒəra-dᵊ̃=r-ɛrɪ=bᵊ̃
you   man   3-CTFG-INTR-run=VERB=CTFG-PROGR

ɗa-bi=ɗ-a
2-CTFG-INTR-see[33]=2-PERF
'You saw the man running.'

As we will see in the following section, functional equivalents of adverbial clauses in Karajá can also be seen as complement clauses occupying the position of NPs in a postpositional phrase.

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[33] Intransitive class II verb stems such as *obi* 'to see' loose their initial vowels in the first and second persons of the realis mood. Notice that, in this example, the complement clause could also be translated as a relative clause headed by *hᵊ̃bu* 'man' ('You saw the man who is/was running').

ADVERBIAL CLAUSES

Karajá apparently has few, if any, true adverbial clauses[34], a fact that mirrors the overall lack of adverbs in the language[35]. Corresponding to locative adverbs ('here', 'there', 'hither', 'thither') and temporal adverbs ('yesterday', 'tomorrow'), Karajá has demonstrative pronouns (*ka* 'proximal', *kədã* 'distal') followed by postpositions (*ka=kɪ* 'here'; ♀ *ka=ku*,♂ *ka=u* 'yesterday'; ♀ *kədã=ku*, ♂ *kədã=u* 'the day before yesterday; the day after tomorrow'). Corresponding to manner adverbs ('quickly', 'swiftly', etc.), Karajá has nouns followed by the postposition *=bã* (*wɨ=bã* 'quickly', etc.). Thus, just as most adverbial functions are played by postpositional phrases, functions traditionally associated with adverbial clauses are played by 'postpositional clauses' in Karajá. Examples of allative, locative and temporal clauses are:

(62) ♀   i-rəbɪ   a-hɛ=bã   ã-d-ɸ-ã=d-e=kɔ=le
      3-ABL   2-behind=LOC   1-CTPT-INTR-ir=CTPT-IMPRF=AL=EMPH

      b-ɸ-ɛ-aka=bã   b-ɸ-ã=b-e=kre
      2-CTFG-INTR-ir=LOC   2-INTR-ir=2-IMPRF=FUT
      'You may keep on going *to where I followed you from*.'

(63) ♀   ɗabã   ɸ-r-ɸ-a=bãhã=r-e=kɔ
      3.AL   3-CTFG-INTR-go=HAB=CTFG-IMPRF=AL

      ɗa=rkɪ   ɸ-r-ɪ-ɗ-ɛhɛbã-dã=r-e
      so=QUOT   3-CTFG-TRANS?-3?-arrive-VERB=CTFG-IMPERF
      'They arrived, it is said, *where he frequently went*.'

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[34] Besides the 'postpositional clauses' described in this paper, a few other constructions can also be probably treated as adverbial clauses. The most common among them is the *dokuri*-clause, characterized by the presence of the second-position clitic ♀*dokuri* (♂*=dori*). Such clauses have an explicative function and can be translated using English *for* (i) or Portuguese *pois* (*fique, pois estou indo longe*).

(i) ♂   ɗiɔ=hɛ   b-ɸ-ɸ-ʊdã,
         PERM=EMPH   2-CTFG-INTR-sit.down

         i-rɛhɛ=bã=dori   ɸ-r-ɸ-a=bãhã=r-e
         3-long=LOC=*dori*   3-CTFG-INTR-go=HAB=CTFG-IMPRF
         'You better stay, <u>for</u> I'm going far.'

Maia (2002) translates ♂*=dori* as a 'focus marker', which is probably a mistake: being a Wackernagel clitic, it is not surprising that this morpheme occurs after fronted elements, but that is also the case of most discourse-oriented particles in the language. Fortune (1970) translates it (rightly, I think) as 'because'. In fact, its distribution and phonological behavior suggest that *=dokuri* belongs in the large class of attitude markers, particles that inform on the attitude of the speaker with relation to the utterance (indicating certainty, doubt, excitement, boredom, sympathy, surprise, assertiveness, resolve, etc.). If that is the case, that would help us to explain the differences between *dokuri*-clauses and the reason clauses described: *dokuri*-clauses are probably examples of *speech act* adverbial clauses, whose function, as defined by Thompson and Longacre (1985) "is not to modify or qualify the main clause in any way, but to modify or qualify, as it were, the speech act which the speaker is performing in uttering the main clause". That is a fascinating topic to be further investigated.

[35] One candidate for adverbhood would be *widi* 'today, now' [wɪdʒi]. The locative morphemes *ɗʊ, ɗabã*, and *ɗai* (which, as we have seen, are suppletive third-person forms of postpositions) could also be alternatively analyzed as adverbs. Even if these morphemes are considered as adverbs, this would be a closed class in Karajá.

(64) iɗɨɗɪ=ɗi   ɸ-r-ɔɗʊɔ=r-a=kɪ   ɗa=rkɪ
      ground=LOC   3-CTFG-go.up=CTFG-PERF=LOC   so=QUOT

      iθɔ̃   ɗʊ   ɸ-r-ɸ-əi=r-e
      peccary   3.LOC   3-CTFG-INTR-stand.up=CTFG-IMPRF
      '*Where they came up to the surface*, it is said that there were peccaries there.'

(65) ♂   d-ãdɪ   kə-d-ɛhɛbɔ̃-dɔ̃=kre=u
           REL-mother   3-CTPT-INTR-arrive-VERB=FUT=TEMP

           a-r-ɸ-a=kəre
           1-CTFG-INTR-go=FUT
           'I will go *when my mother arrives*.'

Notice that these adverbial-like subordinate clauses are structurally identical to relative clauses which modify oblique domain nouns (as seen in *Relative Clauses*), except for the lack of a domain noun. That is, the locative clauses can be analyzed as headless relative clauses. This structural identity between relative clauses and adverbial clauses is not unusual. As Thompson and Longacre (1985) point out, adverbial clauses expressing time, location, and manner can commonly be paraphrased, in many languages, "with a relative clause with a generic and relatively semantically empty head noun: time, place, and way/manner, respectivelly"; such clauses have also in common the fact that they can be replaced by a single word, an adverb, such as *today* (time), *here* (location), and *quickly* (manner) in English and other languages with a clear class of adverbs.

In Karajá, however, not only temporal, locative, and manner adverbial notions are expressed through postpositional clauses. As we will see, purpose, conditional, and reason adverbial clauses, as well as converbs (subordinate clauses denoting a wide range of circumstantial meanings), are also constructed with postpositions. Thus, (notional) adverbial clauses in Karajá can be seen as complement clauses occupying the NP node in a postpositional phrase, being structurally identical with both relative and complement clauses.

Purpose

Purpose clauses are constructed with the postposition =bɔ̃ attached to verbs in the future or potential. This is probably an extension of the use of this postposition to indicate destination (see *Postpositions*)[36].

(66) i-hãwɨɨ=ɔ   idʒoi   a-r-a-dɨ=kəre
      3-woman=AL   men   2-CTFG-2-carry.ANIM=FUT

      ihãwɨɨ=wədã   b-ɸ-ɸ-oi=kəre=bɔ̃
      3-woman=COMIT   2-CTFG-INTR-lie.down=FUT=LOC
      'We will take you to his wife in order for you to marry her.'

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[36] The use of destination adpositions to mark purpose clauses is commonly attested, as in English (*I came to see you*) and Portuguese (*eu vim para vê-lo*).

Reason

Subordinate clauses indicating the cause of the event denoted by the main clause are formed with the locative postposition =*kɪ*:

(67) ♀   wa-eθoru   wa-rikɔrɛ   ɸ-r-ɪ-hədɛ-dɔ̃=r-a=kɪ
           1-younger.sister   1-child   3-TR-hit-VERB=CTFG-PERF=LOC

       ã-dəkɛ   i-dɪ   ɸ-r-ɸ-a=r-ɛrɪ
       2-DAT   3-INSTR   3-CTFG-INTR-go=CTFG-PROGR
       'Because my younger sister hit my son, I'm bringing him to you.'

Conditional

There are two ways of forming conditional clauses: with the locative postposition =*kɪ* attached to potential verbs (1) or with the comitative postposition =*wədã* (2)[37].

(68)   b-ɸ-eθi-ɛlɛhɨ-dɔ̃=kɛ=kɪ   b-eθi-ɛlɛhɨ-dɔ̃=kɛ
       2-CTFG-REFL-rest-VERB=POT=LOC   2-CTFG-REFL-rest-VERB=POT
       'If you want to rest, rest.'

(69)   idɔ̃   ɸ-r-a-rɪ=r-e=wədã   hɛka
       people   3-CTFG-INTR-leave=CTFG-IMPRF=COM   ASSRT

       idɔ̃=dəkɛ=ka   kə-d-a-rɨbɛ=kəre
       people=DAT=ASSRT   3-CTPT-INTR-speak=FUT
       'If anyone was left, do call for us.'

(70)   ♂   l-ʋahɪ=bɔ̃   b-ɸ-ɪ-õ=kõ=kəre=wadã
           REL-medicine=LOC   2-CTFG-TRANS-drink=NEG=FUT=COM

       ɗɪɪɛ=bɔ̃   bə-d-ɸ-ʋrʋ=b-e=kəre
       always=LOC   2-CTPT-INTR-die=2-IMPRF=FUT
       'If you don't take medicine, you'll always be feverish.'

Converbs

Converbs are by far the most common subordinate clauses in Karajá. Converbs, marked by the postposition =*bɔ̃*, indicate that the event denoted by the subordinate clause is somehow related to the event coded by the main clause, signaling a range of circumstantial meanings, including *manner*, (71) and (72); *temporal sequence*, (73); *simultaneity*, (74) and (75); and relationships of *cause and effect*, (76).

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[37] The difference between constructions with =*kɪ* and constructions with =*wədã* is not fully understood yet.

(71)   *bãɗʋarɪ-hɪkə̃*   *ɸ-r-a-rabu-də̃=bə̃*   *ɸ-r-eθi-ukɔ=r-e*
old.man-big   3-CTFG-INTR-bend-VERB=LOC   3-CTFG-REFL-lift=CTFG-IMPRF
'The very old man got up [lit. lift himself up], *bending his back.'*

(72)   *bɛ=dɪ*   *ɸ-r-a-hɨlɔɪ=bə̃*
water=INSTR   3-CTFG-INTR-vomit=CONV

       irɔdʋ   *hɛɔɗɨ*   *ɸ-r-ɪ-ɗ-ʋri-də̃=r-e*
animal   fire   3-CTFG-TRANS-3?-extinguish-VERB=CTFG-IMPRF
'*Vomiting water*, she extinguished the animal's fire.'

(73)   *bãɨ-d-ɛθɛ*   *ɸ-r-ɪ-ɗa=bə̃*   *bãɨ-d-ɛθɛ=dɪ*
knife-REL-sharp   3-CTFG-TRANS=LOC   knife-REL-sharp´=INSTR

       ɗai   *ɸ-r-ɸ-odʒɨ=r-e=rəkɪ=hɪ=də̃*
3.LOC   3-CTFG-INTR-stab=CTFG-IMPRF=QUOT=EMPH=SIMPATHY
'*Taking a dagger*, it is said that he stabbed him, the poor thing.'

(74)   *bə̃awa=dɪ*   *ɸ-r-ɸ-ehu=bə̃=rəkɪ=hɛ*
firearm=INSTR   3-CTFG-INTR-throw=LOC=QUOT=EMPH

       idə̃   *bãhã̃dʋ*   *ɗabə̃*   *ɸ-r-a-ɔrʋ-də̃=r-e*
people   group   3.AL   3-CTFG-INTR-run-VERB=CTFG-IMPRF
'*Firing their guns*, the Karajá ran after them, it is said.'

(75)   ♂   *ɗabə̃*   *ɸ-r-ɸ-ɛhɛbə̃-də̃=bə̃*
              3.AL   3-CTFG-INTR-arrive-VERB=LOC

              idə̃   *boho*   *ɸ-d-ɪ-ɔrɨ=d-ɛdə̃=kre*
people   PL   3-CTPT-TRANS-fetch=CTPT=PL=FUT
'*As soon as he gets there*, they will come for us.'[38]

Haspelmath (1995) defines converb as "a nonfinite verb form whose main function is to mark adverbial subordination" [his emphasis] "Another way of putting it", he adds, "is that converbs are verbal adverbs, just like participles are verbal adjectives"[39]. At first, there seems to be no reason to distinguish converbs from the

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[38] This is one of the few examples of a third-person centripetal verb in the realis that does not occur with the prefix *kə-*. Possible semantic motivations for the absence of the prefix are being investigated.

[39] Similar constructions have been called 'absolute clauses' by some authors. According to Thompson and Longacre (1985), absolute "is a cover term for a subordinate clause type in which the following conditions hold: (i) the clause is marked in some way as being subordinate; (ii) there is no explicit signal of the relationship between the main and subordinate clause; thus (iii) the interpretation of this relationship is inferred from the pragmatic and linguistic context". As we have seen, these are exactly the characteristics of the converb constructions in Karajá.

other postpositional phrases described in the preceding sections. However, there is a crucial difference between them: while the clauses discussed earlier are commonly marked for tense, converbs generally are not. Since typical finite clauses in Karajá are characterized by the presence of a tense-aspect marker, a distinguishing feature of converbs (as opposed to the other postpositional clauses) is their *nonfiniteness* (which, according to Haspelmath, is a definitional characteristic of converbs)[40].

In the majority of the examples, the converb has the same subject as the main clause, but that is not necessarily the case. As examples (76) and (77) show, converbs with different subjects are also possible.

(76) bɔrɔ   ø-r-ɪ-wa-wɛ *bɔ̃*
      stingray   3-CTFG-TRANS-1-sting=*LOC*

      ø-r-a-hi-dɔ̃=*bɔ̃*   r-a-ĩrɛrɪ
      3-CTFG-TRANS-cry-verb=CONV   CTFG-1-stand.up=CTFG-PROGR
      '*Having been stung by the stingray*, I am crying.'
      [Lit. '*Having the stingray stung me*, I am crying.']

(77) ø-r-ɪ-hədɛ-dɔ̃=bɔ̃   ɗa=rəkɪ   ø-r-ɛ-θɛ=r-e
      3-CTFG-TRANS-hit-VERB=LOC   so=QUOT   3-CTFG-INTR-fall=CTFG-IMPRF
      '*Once [the club] hit him*, he fell.'

An extremely common use of converbs in discourse is to provide background information previously given, providing a frame for the introduction of new information. Notice that, in such cases, the converb clause is usually a word-by-word repetition of information given in the preceding sentence:

(78) hã̄wɔ=rəkɪ   ø-r-ɪ-wɪ-dɔ̃=r-ɛdɔ̃=r-e,
      canoe=QUOT   3-CTFG-TRANS-make-VERB=CTFG-PL=CTFG-IMPRF

      hã̄wɔ   ø-r-ɪ-wɪ-dɔ̃=r-ɛdɔ̃=ɓ   ɗa=rəkɪ
      canoe   3-CTFG-TRANS-make-VERB=CTFG-PL=LOC   so=QUOT

      idʒõ   iraru=ɔ   ø-r-ɛ-a=r-e
      some   north=ALL   3-CTFG-INTR-run=CTFG-IMPRF
      'They made canoes, it is said. *Having made canoes*, some went north.'

NOMINALIZED COMPLEMENTS

Corresponding roughly to the subordinate clauses described (71-78), one commonly finds nominalized forms of the verbs playing the role of complements. Verb nouns may be preceded by a grammatical possessor

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[40] Although there is a strong tendency for converbs to be nonfinite and for the other postpositional clauses to be finite, that is not a hard and fast rule. Imperative and imperfective verbs may occur without the tense-aspect clitics, but in situations in which this information is easily recoverable through context. Interestingly, the imperfective auxiliary can still trigger vowel harmony even when it is not present on the surface (RIBEIRO, forthcoming c).

which corresponds to the original absolute argument of the verb – that is, to the subject of an intransitive verb, such as in *wa-rira* 'my walking' (from *rika* 'to walk'), or to the object of an intransitive verb, such as in *kɔʊɗi bɜ̃dɜ̃* 'turtle catching' (from *bɜ̃* 'to catch'). These constructions occur in any of the functions performed by subordinate clauses (or by any NP, for that matter) – that is, as subjects (79), direct objects (80) or objects of postpositions (81-85)[41].

(79) ♀ *ir*   *ɗaraθa*   ɸ-r-ɪ-wa-d-ɛkɨwəθɛ-dɜ̃=r-a
          manioc take.NOM   3-CTFG-TRANS-1-REL-get.tired-VERB=CTFG-PERF
          'Pulling manioc made me tired.'

(80) ♀ *dɪkarɜ̃ bɛ*   *l-ʊrɜ̃*   ka-r-ɪ-rakɔ=kəre
          I   water   REL-dry.NOM   1-CTFG-TRANS-wait=FUT
          'I will wait until the water dries.'

(81) ♂ *dɪarɜ̃*   *ɔɗʊdĩ bɜ̃dɜ̃=bɜ̃*   a-r-ɸ-a=kəre
          I   turtle catch.NOM=LOC   1-CTFG-INTR-go=FUT
          'I'll go catch turtles.'

(82) ♂ *idʒɔrɛ*   *l-ʊra=u*   a-r-ɪ-ɗɔkəre
          porridge   REL-cook.NOM=TEMP   1-CTFG-TRANS-eat=FUT
          'When the porridge is cooked, I'll eat it.'

(83) ♂ *kədɜ̃θiwɛ*   *əɗʊra rahɔrɛθɛ=le=bɜ̃*
          Kỹnyxiwe   fish   turn.NOM=EMPH=LOC

          ɸ-r-ɸ-õhõɗɪ-dɜ̃=r-e
          3-CTFG-INTR-ear-VERB=CTFG-IMPERF
          'Kỹnyxiwe just thought about transforming the fish.'

(84) ♂ idʒoi   *bɔla=dɪ*   *d-ehu=dɪ*
          guys   ball=INSTR   REL-throw.NOM=INSTR

          ɸ-r-ɛ-ɗɛhɛ=kəre
          3-CTFG-INTR-watch=FUT
          'The guys will watch the ball game.'[42]

(85) ♂ wi   ɸ-r-ɪ-ɗɔɛdɜ̃=r-e
          REC   3-CTFG-TRANS-prohibit=CTFG-IMPRF

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[41] Notice that the deverbal nouns derived from verbs such as *ehu* preserve the case-marking peculiarities of the original verb.

[42] Both *ɗɛhɛ* 'to watch, to look at' and *ehu* 'to throw' take objects marked by the instrumental postposition *=dɪ* (corresponding to what would be direct objects in English or Portuguese). The 'ball game' [lit. 'the throwing of the ball'] in the example refers, naturally, to soccer.

> wi *wɨhɨ=dɪ* *d-ehu=*lau
> REC arrow=INSTR REL-throw=EVIT
> 'They prohibited each other from shooting arrows.'

In addition, the suffix *-dʊ* forms subject nouns (that is, nouns refering to the subject of the original verb), which can be translated as relative clauses (86). The suffix *-dã*, on the other hand, forms nouns which name instruments, places, or other circumstances related to the action denoted by the verb (*rəθɔ̃-dã* 'food' < *rəθɔ̃* 'to eat'; *kɔra-dã* 'shredder' < *kɔka* 'to shred'; *θʊrɔ-dã* 'soap (or any washing device)' < *θʊhɔ* 'to wash').

(86) *rəθɔ̃dã* *wədi-dʊ* ɸ-r-ɸ-ɔrɔ=r-ɛrɪ
    food   carry.NOM-SUBJ 3-CTFG-INTR-go.ashore=CTFG-PROGR
    'The one who brings food is arriving.'

Verb nouns can also be used as (notional) modifiers of other nouns, both as predicates (87a) or attributes (87b). Notice that constructions such as *dəkɨ θʊrɔ* can be translated as 'washed clothes' or 'the clothes' washing', being structurally identical to genitive phrases[43]. Notice that the location of the relative clause mirrors the location of the modifier in simple attributive constructions.

(87) a. wa-ɗək *i-θʊrɔ=*r-e
       1-clothes 3-wash.NOM=CTFG-IMPRF
       'My clothes are washed.'

    b. *dəkɨ*   *θʊrɔ=*dɪ   a-r-eθi-ɗək-dɔ̃=kəre
       clothes   wash.NOM=INSTR 1-CTFG-REFL-clothes-VERB=FUT
       'I will wear clean clothes.'

The differences between subordinate clauses proper and constructions involving nominalized verbs are rather straightforward. With subordinate clauses, the verb remains intact, preserving the same inflectional properties and argument structure as in independent clauses. The deverbal nouns discussed in this section, on the other hand, are typical nouns, in that only one argument may be present (as the possessor) and verbal inflectional categories (such as direction and voice) are absent[44].

That is, while subordination is clearly a syntactic operation, the creation of deverbal nouns is a matter of derivational morphology. As such, it is subject to the irregularities which generally characterize derivational

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[43] Thus, the notional modifier would indeed be the syntactic head of the attributive constructions. Attributive constructions in Karajá are reminiscent of constructions such as *um amor de criança* 'a lovely child' [lit. 'a love of a child'], common in Romance languages, in which the notional modifier is actually the head (see Ribeiro 2002b for a thorough description of attributive constructions and descritive predicates in Karajá). Constructions such as (8a) are traditionally analyzed as descriptive verbs in Karajá (FORTUNE, D.; FORTUNE, G., 1964; MAIA, 1998), which is clearly a mistake. The fact that such constructions require a nominal form of the verb stem shows that such descriptive verbs are simply nouns in predicative use.

[44] For example, while the verb *wɨ* 'to carry' can occur in both centripetal and centrifugal directions (*dɪwɨ=de* 'he brought it' versus *rɪwɨ=re* 'he took it away'), this distinction is neutralized in the nominal form, in such a way that *rəθɔ̃dã wədi-dʊ* 'the one who carries food' can be paraphrased as either 'the one who brings food' or 'the one who takes food away'.

processes. The following examples illustrate different devices to derive nouns from verbs: *ʊra* 'cooking' (from *ʊka* 'to be cooked') and *l-ʊrə̃* 'drying' (from *ʊkə̃* 'to dry') are both derived through *consonantal replacement*, a process by which a velar stop or a glottal fricative in the last syllable of the verb root is replaced with the alveolar flap /r/ in the corresponding nominal form; *bə̃də̃* 'catching' (from *bə̃* 'to catch') is derived by the suffixation of *-dV*; ♂ *rahɔrɛθɛ*, ♀ *rahakɔrəθɛ* 'turning, transforming' (from ♀ *rahãkɔrɛ*, ♂ *rahɔrɛ* 'to turn; to transform' 'to turn, to transform') is derived by the suffixation of *-θV*; *d̯araθa* 'taking' (from ♀ *d̯aka*, ♂ *d̯a* 'to take') illustrates both consonantal replacement and the suffixation of *-θV* [45]; *d-ehu* 'throwing' (from *ehu* 'to throw') is derived by conversion (or zero-affixation). In addition, a number of verbs have suppletive noun counterparts (cf. *ʊdə̃* 'to sit down', *rɨ* 'sitting'; *õrõ* 'to sleep', *d̯ə̃hi* 'sleep'; *oi* 'to lie down', *heri* 'lying down', etc.).

FINAL REMARKS

Karajá, a Macro-Jê language from Central Brazil, presents a pervasive and straightforward mechanism to create subordinate clauses, shared by relative, complement, and adverbial clauses. This device is 'clause nominalization': an entire clause is nominalized and, as such, can occur in all the positions traditionally occupied by noun phrases (including subject and direct objects, objects of postpositions, and noun modifiers). Clause nominalization (a syntactic process) differs from 'lexical nominalization' (a morphological process) in a number of ways, the main one being that the former preserves all the inflectional properties of the verb. With subordinate clauses occuring in the position of a bare nominal (that is, a noun phrase not followed by postpositions or an article), the subordinate status of the clause is indicated by 'stress shift', an interesting case of non-concatenative.

ABBREVIATIONS

ABL	ablative postposition	INSTR	instrumental postposition
AL	allative postposition	INTR	intransitive
ANIM	animate	LOC	locative postposition
ANTI	antipassive	NOM	nominal form
ASSRT	assertive particle	PERF	perfective
COMIT	comitative	POT	potential
CTFG	centrifugal direction	PROGR	progressive
CTPT	centripetal direction	PROX	proximal
DAT	dative postposition	QUOT	quotative particle
EMPH	emphatic particle	REFL	reflexive
EVIT	evitative postposition	REL	relational prefix
FUT	future	SUBRD	subordinating accent
HAB	habitual	TEMP	temporal postposition
IMPRF	'imperfective'	TRANS	'transitive'
INDEF	'indefinite article'	VERB	'verbalizer'

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[45] Notice that in both nominalizing suffixes, *-dV* and *-θV*, 'V' is a copy of the last vowel in the verb stem.

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