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Artículos

A TYPOLOGICAL SKETCH OF KAMSÁ, A LANGUAGE ISOLATE OF COLOMBIA¹

UN BOSQUEJO TIPOLÓGICO DEL KAMSÁ, UN IDIOMA AISLADO DE COLOMBIA

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Abstract

Kamsá is a language isolate spoken in the Sibundoy Valley in the Putumayo department of southern Colombia. Its speech community lives on the eastern slopes of the Andes Mountains, between the linguistic areas of the Andes and the Amazon. This paper presents various grammatical features of Kamsá, including its phonology, nominal morphology (especially noun class and case marking), verbal morphology (especially person/number marking for core arguments and evidentiality), morphosyntactic alignment, and syntax (including discussion of causatives, comparatives, and subordinate clauses). In doing so, the paper places Kamsá within its typological and geographical context, between the Amazon and the Andes.

Keywords: *Colombia; Kamsá; language isolate; linguistic areas; noun classification; object agreement.*

Resumen

El kamsá es una lengua aislada que se habla en el Valle de Sibundoy, en el departamento del Putumayo, al sur de Colombia. Su comunidad de habla vive en la vertiente oriental de la cordillera de los Andes, entre las áreas lingüísticas de los Andes y la Amazonia. Este artículo presenta varias características gramaticales del kamsá, incluyendo su fonología, morfología nominal (especialmente la clase nominal y la marcación de caso), morfología verbal (especialmente la marcación de persona/número para los argumentos centrales y la evidencialidad), alineación morfosintáctica y sintaxis (incluyendo la discusión de causales, comparativos y cláusulas subordinadas). De este modo, el artículo sitúa al kamsá en su contexto tipológico y geográfico, entre la Amazonia y los Andes.

Palabras clave: *Colombia; kamsá; lengua aislada; áreas lingüísticas; clasificación de sustantivos; concordancia de objetos.*

I. INTRODUCTION

This article is intended to provide a sketch of the grammatical features of Kamsá, including its phonology, morphology, and syntax, so as to contribute to a typological, crosslinguistic understanding of the languages of South America. There have been numerous claims concerning linguistic features of the Amazonian and Andean language areas. As Kamsá is an isolate situated geographically between the Andean highlands and the Amazon jungle, it is of particular interest to the question of the delineation of these putative linguistic areas. Accordingly, I discuss here which features of Kamsá align with those of the Andes and which align with those of the Amazon. Grammatical structures that are borrowed from Spanish are discussed throughout the article as well.

Kamsá is a language isolate located in the Sibundoy Valley of Putumayo, in the lower-altitude slopes of the Andes. Sibundoy is between the higher peaks of the mountains and the greener depths of the Amazon rainforest. As van Gijn (2014, p. 102) states in a chapter on the distribution of Andean and Amazonian features in the upper Amazon area,

the transition from the Andean to the Amazonian area is gradual and complex. This is consistent with the intricate history of contact between the different ethnic groups of the area, and it presents a strong argument for connecting the research traditions associated with these areas.

Kamsá stands square in the middle of this proposed transitional zone. Kamsá [ISO 639-3 kbh, Glottocode cams1241] is an endangered language. It is spoken by fewer than 800 people.

According to the Kamsá community's *Plan de Salvaguarda*¹, the ethnic Kamsá population is 8,681 (Ministerio del Interior & Cabildo Indígena Camëntšá de Sibundoy, 2012). The Kamsá people have shared the Sibundoy Valley with the Inga people (who speak a Quechuan language) for over 500 years, and share many cultural similarities with them, such as the celebration of an important carnival holiday, their use of *yagé* (ayahuasca, a hallucinogenic concoction), and their distinctive blue-and-red wool ponchos. In the past, many ethnic Kamsá and Inga spoke each other's languages, but with the growing influence of Spanish, such multilingualism is less common. Inga is a larger language, with perhaps as many as 18,000 speakers in Colombia (Eberhard, Simons & Fennig, 2021, citing Civalero, 2008). The influences of the Inga language (and culture) are apparent in Kamsá's lexicon; Kamsá has borrowed many words from this neighboring language (as well as from Spanish).

Although attempts have been made to find genetic relationships between Kamsá and other language families (such as Chibchan), none have been successful. Campbell and Grondona (2012) provide a survey of larger-scale (and mostly rejected) proposals of distant genetic relationships involving languages in South America. There have also been suggestions that Kasmá is related to the language of the Quillacinga people, whose ancestral homeland was around the present-day city of Pasto. Although the Quillacinga people still exist, their language has not been spoken for centuries, as they have shifted completely to Spanish. There are several theories about what language they spoke: Kamsá, something related to Kamsá, something in the Chibchan family, or something in the Quechuan family. But since there are no records of their language, it is impossible to classify it. Similarly, Kamsá could theoretically be related to whatever language was once spoken by the Mocoa people (a group that once lived in the area of the present-day city of Mocoa), but their language is also unknown to us.

Ethnologue claims that Kamsá has 4,000 speakers out of an ethnic population of 4,770 and classifies Kamsá as «level 5: developing», according to its EGIDS schema (Simons & Charles, 2018). UNESCO claims 3,500 speakers and says that the language is definitely endangered (3 on its scale). The Endangered Language Catalogue provides the figure of 4,773 speakers, based on Crevels (2012). These numbers seem much higher than the reality, however, I estimate that there were fewer than 800 fluent speakers of Kamsá in 2012 based on the current age of fluent speakers and the census data for different age groups. My personal observation is that there are few, if any, fluent speakers of Kamsá younger than 60 years old. Many ethnic Kamsás between the ages of 40 and 60 are semi-speakers (in that they are able to have basic conversations and have good comprehension of fluent speech, but are not themselves fluent speakers). According to the Kamsá community's *Plan Salvaguarda* published in 2012, there were 816 Kamsás who were 61 or older (Ministerio del Interior & Cabildo Indígena Camëntšá de Sibundoy, 2012).

Thus, considering that only ethnic Kamsás older than 60 years old are fluent speakers, I estimate that the speaker number is less than 800. This means just slightly over 10 percent of the ethnic Kamsá population are fluent speakers of the language. Based on the Language Endangerment Index (Lee & Van Way, 2018) used in the Catalogue of Endangered Languages (ELCat), Kamsá comes out as a 4 «severely endangered». However, other estimates have higher speaker numbers. In a sociolinguistic study of the Kamsá, Ávila Mora (2004) states that approximately 60 percent of the Kamsá can both comprehend and produce the language; 20 percent can comprehend it but not speak it; and 20 percent cannot understand or produce the language. His fieldwork took place

around the year 2000, almost 20 years preceding the writing of this article, which could explain why his percentage of speakers is higher than my estimates.

Section 2 briefly explains the background of my project and my methodology. Section 3 provides the phonology of the language, including which phonemes are borrowed from Spanish and Inga. Section 4 discusses Kamsá's three main word classes: nouns, verbs, and adjectives. Section 5 is nominal morphology and Section 6 is verbal morphology. Section 7 shows the alignment of the language and Section 8 discusses a few syntactic phenomena. Section 9 concludes the article.

2. METHODOLOGY

This article is based on my dissertation, the first in-depth grammatical description of Kamsá (O'Brien, 2018). It is based on fieldwork that I conducted with Kamsá speakers in Sibundoy Valley and Bogotá. I spent a total of 18 months in Colombia between 2015 and 2018; of that time, I spent about five months in Sibundoy, working mainly with older Kamsá speakers (above the age of 60), some of whom had never left the Putumayo/Nariño region. I recorded word lists, sentences, conversations, traditional stories, and life stories in Kamsá and Spanish. Because there are already many existing texts in the language (albeit without grammatical description or glossing), I also took advantage of these materials for ideas and hypotheses about the grammar. The example sentences in this article come from both a subset of my corpus, namely 37 elicitation sessions with four speakers, and from these other sources, mainly Juajibioy Chindoy's book of traditional stories (Juajibioy Chindoy, 1988) for which I did my own word-by-word translation and glossing. The examples not labeled are from my elicitation sessions and are part of the corpus. My work was primarily descriptive.

3. PHONOLOGY

Kamsá's phonemic inventory has an average size cross-linguistically. There are 19 consonant phonemes and 6 vowel phonemes. Maddieson (2013a, 2013b) defines an «average consonant inventory» as one consisting of 19-25 phonemes, and an «average vowel inventory» as one consisting of 5-6 phonemes, so Kamsá sits at the low-end of average for consonants and at the high-end of average for vowels. The consonant inventory is marked by its large number of sibilants (both fricatives and affricates). The language has many consonant clusters. The series of voiced stops /b, ⁿd, ^ŋg/ is unusual in that /b/ is not prenasalized, whereas the other two voiced stops are. There are a few phonemes that are borrowed from Spanish, including non-prenasalized /d/ and /g/, as well as /r/. There is also one phoneme borrowed from Inga: /l/. It only appears in Inga and Spanish words.

Table 1 displays all the consonant phonemes of Kamsá in the IPA. The forms in parentheses are borrowed sounds from Spanish and occur only in loanwords. Kamsá has a typologically common pattern of six vowels, shown in Table 2.

Table 1. Kamsá consonants (in the IPA)

	Labial	Alveolar	Retroflex	Palatal	Velar
Stops	b	t, ⁿ d, (d)			k, ^ŋ g, (g)
Affricates		ts	tʂ	tʃ, ⁿ dʒ	
Fricatives		s	ʂ	ʃ	x
Nasals	m	n		ɲ	
Liquids		(l), (r)			
Glides	w			J	

Table 2. Kamsá vowels (in the IPA)

	Front	Central	Back
High	i	i	u
Mid	e		o
Low		a	

There is no phonemic tone or vowel length, nor phonemic differences between nasal and oral vowels. The language does have phonemic stress.

Table 3 presents the Kamsá consonant phonemes as written in my working orthography, which is mostly based on the writing of previous linguists, anthropologists, and Kamsá community members, although I have made some slight modifications. Where this orthography differs from the IPA, the IPA symbol is presented in brackets. Sounds that are found in current Kamsá speech but that are (likely) not native sounds are included in parentheses (namely /r/, /d/, /g/, and /l/; although the segments [d] and [g] do exist in native vocabulary, they are only found there preceded by nasal articulations, i.e., /ⁿd/ and /^ŋg/).

Table 3. Kamsá consonants in the working orthography

	Labial	Alveolar	Retroflex	Palatal	Velar
Stops	b	t, nd [ʔd], (d)			k, ng [ʔg], (g)
Affricates		ts	tš [tʂ]	ch [tʃ], č [ʔdʒ]	
Fricatives		s	š [ʂ]	sh [ʃ]	j [x]
Nasals	m	n		ñ [ɲ]	
Liquids		(l), (r)			
Glides	w			y [j]	

Table 4 presents the Kamsá vowel phoneme as written in my working orthography. All forms are identical to the IPA, with the sole exception of the high central vowel, which, following earlier orthographies, I write as <ë> as opposed to /i/.

Table 4. Kamsá vowels in the working orthography

	Front	Central	Back
High	i	ë [i]	u
Mid	e		o
Low		a	

4. WORD CLASSES

Kamsá has distinct nouns, verbs, adjectives, and adverbs, as well as other word classes. This section discusses nouns, verbs, and adjectives.

Nouns are an open class in Kamsá. Prototypical members of this class head noun phrases and typically function as arguments of the clause. Unlike verbs, nouns can regularly appear bare in the clause, without any inflectional morphology. Nouns can bear inflectional morphology, although a noun can be a word without any bound morphemes. The inflectional morphology includes: number marking (plural and dual), noun class markers, a topic marker, and a determiner that is a clitic preceding the noun. Kamsá has derivational morphology, including suffixes to make an agent from a verb and evaluatives (diminutives, augmentatives, and pejoratives). Kamsá nouns that are derived from verbs also lack morphology, i.e. they are stripped of the morphology of

the verb, but then receive the derivational suffix. The following two examples show pairs of verb infinitives and their corresponding agentive nouns.

(1a) atbana-yá harvest-DER 'harvester'
j-atbaná-n VBLZ-harvest-INF 'to harvest'

(1b) wabwana-yá cook-DER 'cook (noun)'
j-wábwa-n VBLZ-cook-INF 'to cook'

Kamsá nouns have suffixes for number and nouns can be singular, dual, or plural. Singular nouns have no overt marking, whereas dual and plural marking is shown by a suffix «-at» and «-ng», respectively, on the noun. Number marking is not obligatory in Kamsá, and often plural and dual nouns are left optionally in their singular form, especially when it is clear from the context that the noun is plural or dual. In the following example, «keš» 'dog' is «keš-at» in the dual and «keš-ëng» in the plural (with the vowel /ë/ being inserted). Many nouns in Kamsá have class markers, which is discussed in section 5.1.

(2a) (kanÿe) keš one dog 'one dog'

(2b) (uta) keš-at two dog-DU 'two dogs'

(2c) (unga) keš-ëng three dog-PL 'three dogs'

Members of the verb class are roots that head predicates and cannot appear as uninflected stems. They require prefixes indicating e.g., person, number, tense, aspect or, minimally, a verbalizing prefix for infinitives. Example 3a shows the verb jwabwam 'cook' without any person, number, or tense marker (only with the verbal prefix «j-» and the infinitive suffix «-m») whereas 3b shows the same verb fully inflected.

(3a) atš sënjawabwach atšbe mamá jwabwam wameshnén
atš sën-j-wabwach atš-be mamá j-wabwa-m wameshnén
1SG 1SG-EVI-VBLZ-help 1SG-POSS mom VBLZ-cook-INF mote
'I helped my mom cook *mote* (hominy soup)'

- (3b) atš sēnjwabwá wameshnén chēngabtangbiam
 atš sē-n-j-wabwá wameshnén chēngabtang-bi-am
 1SG 1SG-EVI-VBLZ-cook mote 2PL-ANIM-BEN
 ‘I cooked *mote* (hominy soup) for you (pl).’

Adjectives are a distinct class in Kamsá. Their prominent feature is that they agree with nouns. The following two examples show the same adjective, «bwangan» ‘red’ agreeing with two different nouns with respect to class (4a) and number (4b). While it is obligatory for adjectives to agree with nouns in class, it is optional for agreement with respect to number.

- (4a) ch wasnaniyá wabwanganiyá tonsajwinÿ
 ch wasnaniyá wa-bwangan-iyá to-n-s-ajwinÿ
 DET blanket CLF-red-CLF 3SG.PST-EVI-PROG-burn
 ‘The red blanket burned.’

- (4b) ch uta shlofštemat bwanganat bontsekantá
 ch uta shlofš-tem-at bwangan-at bo-n-ts-ekantá
 DET two bird-DIM-DU red-DU DU-EVI-PROG-sing
 ‘The two red birds are singing.’

5. NOMINAL MORPHOLOGY

5.1. Noun classification

Kamsá exhibits a grammatical system that —typologically— falls somewhere between noun class and noun classifiers, fitting neither definition neatly as shown in this section. However, here I choose the term «class» to refer to the system in Kamsá, because the markers are an obligatory part of the noun and they trigger agreement.

There are at least eight class markers that exist in the language, as well as a subset of nouns in which the noun itself is a suffix (these are often called «repeaters» in other South American languages). On nouns, the class markers are not separable morphemes, but rather they form a phonological word with their host and cannot be removed or changed. Demonstratives, adjectives, and numerals that agree with a noun, however, sometimes display a matching suffix, which is indeed a separable morpheme (whether or not these modifiers receive such marking depends on their position in relation to

the noun, which is discussed below). A few classes are signaled by both a prefix and a suffix, but no classes are signaled by a prefix without a suffix. As is common cross-linguistically within gender/class systems, nouns of a given class in Kamsá exhibit shared semantic features.

Peculiarly, the majority of nouns in Kamsá do not belong to any noun class, and there are no classes encoding animate referents, whether human or non-human, or biological gender. Nouns that exhibit class markers represent a very small subset of the nouns in the language. Noun class markers have been described in several works, including McDowell (1994), Howard (1967), and Juajibioy Chindoy & Wheeler (1974), all providing slightly different sets of classes. Sandoval Camargo (2017) also analyzes these affixes as having characteristics of both noun classes and classifiers. Here, I define a class as a set of nouns requiring a particular agreement marker from a modifying adjective. Based on this requirement, I present eight classes. Table 5 shows the morphological form of each class, along with a semantic description and an example of one of the nouns in the class. The numbering of the classes is arbitrary. In addition to class markers, the language also has repeaters (discussed below).

Table 5. Noun classes in Kamsá

Class Number	Class Marker	General Meaning	Example
	-Ø	Generic	
1	-be	Round	mashakbe 'lulo fruit'
2	wa- ... -ya	Clothes	wasnaniya 'cloth, blanket'
3	-i	Liquids	biaji 'yagé'
4	-j	body part	tomošaj 'throat'
5	wa- ... -jwa	Cloth	wabatětjonějwa 'blouse'
6	wa- ... -sha	Hairy	wajajoněsha 'nest (of bird)'
7	-fja	long and thin	ochmafja 'fish bone'
8	-iñ	Fire	iný 'fire'

Agreement is obligatory for adjectives that follow the noun as well as for modifiers (determiners, adjectives, and numerals) that are being used anaphorically without the noun. However, when the adjective precedes the noun, it does not exhibit the class marker, as seen in example 5a. Only when an adjective follows a noun, as seen in 5b, it does receive the class marker to signal agreement.

(5a) botaman chembal**be**
 botaman chembal-**be**
 beautiful tomato-CLF
 ‘beautiful
 tree tomato’

(5b) chembal**be** botaman-**be**
 chembal-**be** botaman-**be**
 tomato-CLF beautiful-CLF
 ‘beautiful tree tomato’

The agreement marker is also present when a following adjective is being used predicatively, as in example 5c.

(5c) akbe bichaj indēmën bchenděj
 ak-be bichaj i-nd-ëmën bchendë-**j**
 2SG-GEN tongue.CLF 3SG-hab-be blue-CLF
 ‘Your tongue is blue.’

More research is needed to determine why there is this distinction in adjective marking; thus far, based on my corpus, there is no compelling evidence to explain the difference in marking other than surface word order.

Adjectives are the only modifiers that can either precede or follow nouns. Other modifiers of NPs (such as numerals and determiners) always precede their noun. In examples 6a-c, the modifiers precede the noun, and do not agree with the noun in class.

(6a) kem mashakbe
 kem mashakbe
 that lulo.CLF
 ‘that lulo (fruit)’

(6b) inÿe mashakbe
 inÿe mashakbe
 other lulo.CLF
 ‘another lulo (fruit)’

- (6c) unga mashakbe
 unga mashakbe
 three lulo.CLF
 'three lulo (fruits)'

A modifier as a numeral or determiner can follow a noun only when it is being used anaphorically. When this happens, it is marked for class agreement, as seen in example 7, where the numeral «unga» 'three' has the class marker «-be» to refer to «mashakbe» 'lulo'.

- (7) kanÿe mashakbe indoben joyebambayan i ungabe ndoñ
 kanÿe mashak-be i-nd-oben j-oyebambayan i unga-be ndoñ
 one lulo-CLF 3SG-HAB-be.able VBLZ-talk and three-CLF no
 'One lulo can talk and the (other) three don't.'

Three of the eight classes require the agreeing adjectives to have the prefix «wa-» in addition to their respective suffixes. Not all nouns of each of these classes have the prefix «wa-» (although many do) but the adjectives always do. Examples 8a-c show one example of each of these classes: «-sha» (for hairy things), «-jwa» (for cloth), and «-ya» (for clothes). In example 8a, the adjective «botaman» 'beautiful' has both the suffix «-sha» and the prefix «wa-» to agree with «wa-jajonë-sha» 'bird's nest'. In example 8b the adjective «bwangan» 'red' has the prefix «wa-» and the suffix «-jwa» and in example 8c «bwangan» 'red' has the prefix «wa-» and the suffix «-ya».

- (8a) ch shloftš endabomën wajajonë-sha **wabotamansha**
 ch shloftš i-nd-abomën wa-jajonë-sha **wa-botaman-sha**
 DET bird 3SG-HAB-has CLF-nest-CLF CLF-beautiful-CLF
 'The bird has a beautiful nest.'

- (8b) wabatëtjonëjwa wabwanganjwa
 wabatëtjonëjwa **wa-bwangan-jwa**
 blouse.CLF CLF-red-CLF
 'red blouse/the blouse is red.'

- (8c) ch wasnaniya ndoñ kenatam wabwanganiya
 ch wasnaniya ndoñ ke-n-at-am **wa-bwangani-ya**
 DET blanket.CLF no NEG-EVI-IRR-be CLF-red-epe-CLF
 ‘The blanket isn’t red.’

Example 8d shows an example from the «-ya» class in which the noun only has the class marker «-ya» (no prefix) while the adjective has both the prefix and the suffix.

- (8d) këbsayëya wachindiya
 këbsayë**ya** **wa**-chindi-**ya**
 sayo.CLF CLF-blue-CLF
 ‘blue sayo/the sayo is blue.’²

Classifier and gender systems are common in Amazonian languages but not in Andean languages (van Gijn, 2014). Regardless of whether Kamsá’s system should be considered a classifier system or class/gender system, it patterns more closely with Amazonian languages than Andean languages.

5.2. Repeaters

- (9) yebën indëmën botaman-yebën
 yebën i-nd-ëmën botaman-**yebën**
 house 3SG-HAB-be beautiful-house
 ‘The house is beautiful.’

5.3. Evaluatives

Kamsá has at least three evaluative nominal suffixes—that is, a morphological means of assigning a value (such as big, small, good, or bad) to particular referents, by affixing to a noun. These may also occur on adjectives as agreement markers but are optional. The three evaluatives are: a diminutive «-tem», a pejorative «-ëfja» (with allomorphs «-ëja» and «-ëfa»), and an affective (or commiserative, i.e., with the sense ‘poor X’) «-jema». Evaluatives are often seen to be derivational morphology or somewhere between derivational and inflectional. Table 6 illustrates the three Kamsá evaluatives, providing an example of each.

Table 6. Evaluatives

Evaluative	Suffix	Example
Diminutive	-tem	shembasa-tem 'little girl'
Pejorative	-ėja	ladron-ėja '(bad) thief'
Affective	-jema	shembasa-jema 'poor girl'

5.4. Oblique case markers

Kamsá exhibits nominal marking that lies somewhere along a spectrum connecting case suffixes and postpositions—not meeting all the criteria for either category. There is no core argument case marking in the language (i.e., no overt marking for nominative or accusative arguments). There is also no case marking for the semantic goal in a sentence; that is to say, what would be an indirect object in some languages does not have any special oblique marker in Kamsá. However, there are various oblique case markers, which are distinct from postpositions in that they are not separate words: they are bound morphemes that fulfill common semantic functions found in oblique case markers (e.g., signaling instrumental, comitative, possessive, or allative thematic relations). By «case» I do not mean to imply any theoretical definition of «Case», but rather just a description of bound oblique marking that signals various thematic relations. They could also possibly be analyzed as clitics rather than suffixes.

My main argument for calling these suffixes case markers (or oblique markers) and not postpositions is that they are phonologically part of the word. They cause phonological changes in noun stems. Elsewhere in the language, there are no phonological changes across word boundaries. This is not to say they are not clitics, only that they are not separate words.

All cases except the genitive are different for animate nouns and for inanimate nouns: namely, animate nouns have the suffix «-bi» preceding the case marker whereas inanimate nouns do not.

As stated above, in Kamsá, A, S, and O do not have any overt case marking. The noun stem in NPs fulfilling such grammatical roles appears alone without any affixes. Furthermore, in ditransitive constructions, neither the Theme nor the Goal argument has any special marking. In example 10a, the A argument «batá» 'aunt' has no suffix. In example 10b, this same noun serves as the O argument, and still has no suffix. In example 10c, «batá» 'aunt' is the S argument, yet again with no suffix. Finally, in example 10d, this noun is the recipient (Goal) of the ditransitive verb and has no case-marking suffix. Note that the other object, «sana» 'food', which is the gift (Theme) argument, also has no case marking.

Case marker	Function	Label	Example
-oy, -bi-oy	motion toward	allative	taban-oy, bata-bi-oy
-ok, -bi-ok(a)	location at	locative	beti-ok, bata-bi-oka
-(k)an, -bi-akan	motion from	ablative	bata-bi-akan
-iñ	motion into	illative	kwashaj-iñ

The following sentences exemplify each of the noun cases. Note that for possession, the dependent is marked, as seen in example 11a.

Genitive

(11a)	atš	sějnojiny	batabe	enutá
	atš	sě-n-j-ojiny	bata-be	enutá
	1SG	1SG-EVI-VBLZ-see	aunt-GEN	friend
				‘I saw my aunt’s friend.’

Benefactive

(11b)	atš	sějwabwa	wameshnen	atšbe	batabiam
	atš	sě-n-j-wabwa	wameshnen	atš-be	bata-bi-am
	1SG	1SG-EVI-VBLZ-cook	mote	1SG-GEN	aunt-ANIM-BEN
					‘I cooked <i>mote</i> (hominy soup) for my aunt.’

Comitative

(11c)	atš	sějwabwa	wameshnen	atšbe	batabtak³
	atš	sě-n-j-wabwa	wameshnen	atš-be	bata-btak
	1SG	1SG-EVI-VBLZ-cook	mote	1SG-GEN	aunt-ANIM.COM
					‘I cooked <i>mote</i> with my aunt.’

Locative

(11d)	atš	sějwabwa	wameshnen	atšbe	batabiok
	atš	sě-n-j-wabwa	wameshnen	atš-be	bata-bi-ok
	1SG	1SG-EVI-VBLZ-cook	mote	1SG-GEN	aunt-ANIM-LOC
					‘I cooked <i>mote</i> at my aunt’s (place).’ ⁴

6.1. Subject marking

For intransitive verbs, the subject marker can encode person, number, or both; that is to say, there is variation in how specific the person/number marker has to be, how much information it encodes. For example, first person plural argument can be indexed on the verb with «bsë-» (which encodes both first person and plural), or with «së-» (the first person marker, which does not encode number but is generally assumed to be singular unless there are contrary indication), or with «mo-» (the plural marker, which does not imply anything about person). Similarly, a second person plural argument can be indexed with the prefix that encodes both second person and plural «šmo-», or with the second person marker «ko-» (which is generally singular), or with the plural marker «mo-». There is no special marker that indexes both first person and dual number, so first person dual arguments can be indexed with the first person plural marker, the first person (generally singular) marker, or the (unmarked-for-person) dual marker.

However, second person dual arguments have a designated marker, «šo-», and so they can be marked as such, or with the second person plural marker «šmo-», or with the dual marker «bo-» which is unmarked for person⁵. Thus, plural referents can be indexed on the verb for just their person (first or second) or for their number (plural) or for both person and number (first person plural or second person plural); dual referents can be indexed with either dual or plural verbal morphology for the second person and with either dual or plural or unmarked (but generally taken to be singular) verbal morphology for the first person; singular referents are indexed by their person alone. All person/number combinations for speech-act participants have a unique agreement prefix, except first person dual (as there is no verbal morpheme that encodes both first person and dual number).

Table 8 shows the past tense conjugation of the verb «jaban» ‘come’ with the most specific verbal prefixes for each person/number.

Table 8. Subject marking on verbs

Subject marked	Verb form	Morphemes	Gloss
First person singular	së-n-j-abo	1SG-EVI-VBLZ-come	‘I came’
Second person singular	ko-n-j-abo	2SG-EVI-VBLZ-come	‘You came’
Third person singular	to-n-j-abo	3SG-EVI-VBLZ-come	‘He/she/it came.’
First person plural	bsë-n-j-abo	1PL-EVI-VBLZ-come	‘We (pl) came.’

Subject marked	Verb form	Morphemes	Gloss
Second person plural	šmo-n-j-abo	2PL-EVI-VBLZ-come	'You (pl) came.'
Third person plural	mo-n-j-abo	3PL-EVI-VBLZ-come	'They came.'
First person dual	bsë-n-j-abo	1DU-EVI-VBLZ-come	'We (dual) came.'
Second person dual	šo-n-j-abo	2DU-EVI-VBLZ-come	'You (dual) came.'
Third person dual	bo-n-j-abo	3DU-EVI-VBLZ-come	'They (dual) came.'

6.2. Object marking

Verbs index objects when the object is first or second person. The object marker precedes the subject marker. When the object is second person and the subject is first person, the morpheme in the subject slot is dual subject as seen in example 12a. When the object is first person and the subject is second person, the two are marked accordingly, with the first person object marker followed by the second person subject marker as seen in example 12b. In example 12c, the object is first person and the subject is third person, so the object is marked with «š-» (the first person object marker), and the subject is marked with just «o-»⁶. Note that for first person the subject and object markers are different: «së-» for subjects and «š-» for objects whereas for the second person, the subject and object marker are the same: «k-».

- (12a) kbontsonÿa
k-bo-n-ts-onÿa
 2SG-DU.SUBJ-EVI-PROG-look.at
 'I'm looking at you.'
- (12b) škontsonÿa
š-ko-n-ts-onÿa
 1SG.OBJ-2SG-EVI-PROG-look.at
 'You are looking at me.'
- (12c) šontsonÿa
š-o-n-ts-onÿa
 1SG.OBJ-3SG.SUBJ-EVI-PROG-look.at
 'He/she is looking at me.'

6.3. Evidentiality «n-» and «j-» or «Ø-»

There is a two-way evidentiality system expressed through verbal prefixes: «n-» signals that information being conveyed is known by the speaker and «j-» or «Ø-» for information about which the speaker is not sure. It is not clear if the form of the evidential marker for unknown information is underlyingly «j-» or «Ø-», because it may be occurring with the verbalizer «j-» and thus could be underlyingly /j-j-/. Because there is a prohibition against geminates in Kamsá, this form would be realized as [j-]. The evidential marker comes after the person markers and before the aspect markers. The marker for known information is «n-». It is often used in the recent past, and never used in the distant past. It is almost always used in first person singular, perhaps because if someone is talking about himself/herself, he or she presumably knows the information.

Jamioy Muchavisoy (1999) describes the evidential system as being «n-» for 'close' and «j-» for removed. According to Jamioy Muchavisoy, in example 13a, the «j-» shows that the speaker has distance from responsibility, while in example 13b the speaker is closer. More research is needed to determine the uses and meanings of these two evidential markers. This system could be analyzed as engagement rather than evidentiality, referring to a grammaticalized system that can express the «speaker's assumptions about the degree to which their attention or knowledge is shared (or not shared) by the addressee» (Evans, Bergqvist & San Roque, 2018).

(13a) kojtesa tandëš
 ko-j-te-sa tandëš
 2SG-EVI-?-eat bread
 'you must be eating bread'

(13b) entsejen bomo
 e-n-ts-ejen bomo
 3SG-EVI-PROG-plant potato
 'he is planting potatoes' (Jamioy Muchavisoy, 1999, p. 267)

6.4. Imperatives

There are two ways of forming commands in Kamsá: either through the verbal imperative marker, or by using a second person future form of the verb. In example 14a,

the verb «jatbana» ‘collect’ is marked with the second singular marker «ko-» followed by the future prefix «ch-». The sentence in example 14b shows both strategies of command: the morphological imperative «mo-lempia» ‘Clean!’ and the future-as-imperative with «kochjase» ‘Eat!’. 14c shows the morphological imperative with a native Kamsá word, «jasan» ‘eat’.

(14a) akna tsbwanach kochjatbana bien jwashabwayam
 ak=na tsbwanach **ko-ch-j-atbana** bien j-washabwayam
 2SG=TOP leaf 2SG-FUT-VBLZ-collect well vblz-cover
 ‘Collect the leaves to cover (the house) well.’ (Juajibioy Chindoy, 1988, p. 5)

(14b) mwata molempia. Kanýaná kochjase
 mwa-ta **mo-lempia** kanýa-ná **ko-ch-jase**
 DET-DU IMP-clean one=TOP 2SG-FUT-eat
 ‘Clean these two, and eat one of them.’ (Juajibioy Chindoy, 1988, p. 6)

(14c) morna lempe motsañe
 morna lempe mo-ts-añe
 now all IMP-PROG-eat
 ‘Now eat them all.’ (Juajibioy Chindoy, 1988, p. 69)

7. ALIGNMENT

Kamsá has nominative-accusative morphosyntactic alignment. S and A are marked differently on the verb than O. In the following examples, S and A for first person singular are marked with *sě* while O is marked with *šo*. Note that the first-person singular pronoun «atš» is the same in all examples: as S (in example 15a), A (in example 15b), and O (in example 15c). Most languages of the Andes have nominative-accusative alignment, whereas many languages of the Amazon have ergative, or partially ergative alignment; thus, Kamsá patterns more with Andean languages with respect to alignment.

Subject of intransitive sentence

(15a) tonjapasaibs atš sěnja tabanoy
 tonjapasaibs atš **sě-n-j-a** taban-oy
 yesterday 1SG 1SG.S/A-EVI-VBLZ-go town-ALL
 ‘Yesterday I went to town.’

Subject of transitive sentence

(15b)	tonjapasai	atš	sějachemb	atšbe	enutá
	tonjapasai	atš	sě-n-j-achemb	atš-be	enutá
	yesterday	1SG	1SG.S/A-EVI-VBLZ-call	1SG-GEN	friend
	'I called my friend yesterday.'				

Object of transitive sentence

(15c)	ch	basatem	atš	šonjapega
	ch	basa-tem	atš	šo-n-j-apega
	DET	small-DIM	1SG	1SG.OBJ-EVI-VBLZ-hit
	'The boy hit me.'			

8. SYNTAX

8.1. Word order

Transitive clauses have very free word order, so much so that some have asserted that Kamsá has no dominant word order (Fabre, 2001, p. 5). In his typological sketch of Kamsá, Fabre says that out of one hundred instances selected from his corpus he found a slight predominance of VO (56%) over OV (44%). Most AGENT NPs (presumably in transitive sentences) appear first, but the inverse order is not rare either (Fabre, 2001). The following examples show various options for word order. In example 16a and example 16b the word order is AVO and in example 16c and example 16d the word order is SOV. All six possible orders of S, O, and V are possible in Kamsá.

(16a)	ch	bobonts	tojashwa	shlobtš
	ch	bobonts	to-j-ashwa	shlobtš
	DET	youth	3SG.PST-VBLZ-hunt	bird
	'The young man hunted birds.'			

(16b)	měnte	kachēs	ch	bobonts	tonjwaliya	librēsha
	měnte	kachēs	ch	bobonts	to-n-j-waliya	librēsha
	today	morning	DET	youth	3SG-EVI-VBLZ-read	book
	'This morning the young man read a book.' («librēsha» from Spanish libro 'book')					

- (16c) ch bobonts shlobtš tojashwa
 ch bobonts shlobtš to-j-ashwa
 DET youth bird 3SG.PST-VBLZ-hunt
 ‘The young man hunted birds.’

- (16d) Carmen kanÿe mashakbe tonjobwayán
 carmen kanÿe mashakbe to-n-j-obwayán
 Carmen one lulo.CLF 3SG.PST-EVI-VBLZ-choose
 ‘Carmen chose a lulo fruit.’

8.2. Causatives

Causatives are formed morphologically. A causative meaning is formed by putting an object-marking prefix on the verb to represent the causee. This is the case for both transitive and intransitive verbs. A verb such as «j-ošachn» ‘cry’, which has no object, will have an object marking prefix to index the causee. In example 17a, the verb «j-ošachn» ‘cry’ is marked with «to-» to show past tense and index a third singular subject (Alena). In example 17b, «j-ošachn» ‘cry’ is a causative and is marked with the direct object pronominal prefix «šo-». In example 17c, the verb is marked with the dual «bo-». In example 17d, only the first person subject is marked with «te-», an alternate past form for the first person singular. The function of «j-» is unclear. In example 17c the «bo-» shows that there is an animate subject and an animate object, while in example 17d the verbal prefix just marks first person singular subject and past tense. In examples 17e-f, a causative with «jasan» ‘eat’ and an object is shown. As in example 13b, the verb is marked with «šo-» the first person object marker, to show that the causee is first person singular. The object «bay-ëng» ‘worms’, the things being eaten, do not have any special marking.

- (17a) Alena tontsošachn
 alena to-n-ts-ošachn
 alena 3SG.PST-EVI-PROG-cry
 ‘Alena cried.’

- (17b) cha šontsešachn
 cha šo-n-ts-ešachn
 3SG 1SG.OBJ-EVI-PROG-cry
 ‘She made me cry.’

- (17c) ch bobonts tbontsešachn
 ch bobonts **t-bo-n-ts-ešachn**
 DET young.man PST-DU-EVI-PROG-cry
 ‘The young man made her cry.’
- (17d) Atš tejtsešachn ch bobonts
 atš **te-j-ts-ešachn** ch bobonts
 1SG 1SG.PST-VBLZ-PROG-cry DET young.man
 ‘I made the young man cry.’
- (17e) tonjapasaibs sēnjas wameshnen
 tonjapasaibs **sē-n-jas** wameshnen
 yesterday 1SG.SUBJ-EVI-eat mote
 ‘Yesterday I ate *mote* (traditional corn soup).’
- (17f) cha šontsesasa bayëng
 cha **šo-n-ts-esasa** bay-ëng
 3SG 1SG.OBJ-EVI-PROG-eat beast-PL
 ‘She made me eat worms.’

8.3. «-am» on a complement

To show purpose, the suffix «-am» is added to an uninflected verb. This is perhaps the same suffix as the benefactive case marker on nouns and it seems to be a nominalization process. The suffix «-am» must be added to the uninflected verb, not any other constituents (e.g. not the object). Example 18a shows «-am» on the uninflected verb ‘buy’ and example 18b shows «-am» on a noun, Carmen, for comparison.

- (18a) ch tobiaš tonja merkadoy bišanša jobwamiñam
 ch tobiaš to-n-j-a merkad-oy bišanša j-obwamiñ-**am**
 DET girl 3SG.PST-EVI-VBLZ-go market-ALL collards VBLZ-buy-BEN
 ‘The girl went to the market to buy collard greens.’

- (18b) atš sēnjwabwa wameshnen Carmenbiam
 atš sē-n-j-wabwa wameshnen carmen-bi-**am**
 1SG 1SG-EVI-VBLZ-cook mote Carmen-ANIM-BEN
 ‘I cooked mote for Carmen.’

8.4. Subordinate clauses with «=as», «ora» and «kaus»

Subordinate clauses are often formed with clause-final clitics as «=as» or «=ora». Clauses with «=ora» are always temporal whereas classes with «=as» can encode many different subordinate relations. Subordinate clauses may either precede or follow matrix clauses. A common strategy for marking subordinate clauses employs the clitic «=as», which comes at the end of the subordinate clause. In my data, there are no sentences with «=as» in which the clause ends in an S or A. The clitic «=as» can encode a variety of subordinate meanings, including causal, concessive, temporal.

- (19) mwana ndoñ yentšá kwandmēnas, baij kwantsomēñ
 mwa=na ndoñ yentšá kwa-nd-mēn=**as** baij kwa-n-ts-omēñ
 this=TOP NEG person EMPH-NEG-be-SUB beast EMPH-EVI-PROG-be
 ‘This one isn’t a person, but a beast.’ (lit: ‘This one not being a person, is a beast.’)
 (Juajibioy Chindoy, 1988, p. 4)

Temporal clauses may use the subordinator «ora» ‘when’, which may derive from Spanish «hora» ‘hour, time, term’. The subordinator «ora» comes at the end of its clause (the temporal subordinate clause). It has the alternate forms «or», «gor», and «orna». In example 20, «gor» comes at the end of the first clause.

- (20) atš chaijatson bastoy **gor** chantsaman jasam wameshnen
 atš chai-j-atson bast-oy **gor** chan-tsaman j-asam wameshnen
 1SG COND-VLBZ-go Pasto-ALL when 1SG.FUT-miss VBLZ-eat mote
 ‘When I go to Pasto, I will miss eating *mote* (hominy soup).’

The subordinator «kaus», which also shows the forms «kausa» or «kausna» («kaus» + topic marker «=na»), may be used to show the cause of an event or state. In example 21, «kausa» comes at the very end of the clause, after the verb. The verb is fully inflected for person and number.

8.6. WH questions

There is *wh*-movement for questions: question words always come at the beginning of the clause. In example 23a, the word order is SOV, with the object «wameshnen» ‘mote’ coming before the verb. In example 23b, the question word «ndayá» ‘what’ is at the very beginning of the sentence. Similarly, in example 23c, the place the girl went, the market, follows the subject and in example 23d, the allative question word «ndmoy» ‘to where’ is at the beginning of the sentence. As discussed above, declarative sentences can have any word order. Questions, however, must have the question word first in the sentence.

- (23a) atšbe batá wameshnen tonjwabwa
 atš-be batá wameshnen to-n-j-wabwa
 1SG-GEN aunt mote 3SG.PST-EVI-VBLZ-cook
 ‘My aunt cooked *mote* (hominy soup).’

- (23b) ndayá batá tojwabwa
ndayá batá to-j-wabwa
 what aunt 3SG.PST-EVI-cook
 ‘What did aunty cook?’

- (23c) ch tobiaš merkadoy tonja
 ch tobiaš merkad-oy to-n-j-a
 DET girl market-ALL 3SG.PST-EVI-VBLZ go
 ‘The girl went to the market.’

- (23d) ndmoy ch tobiaš tojaton
ndm-oy ch tobiaš to-j-aton
 where-ALL DET girl 3SG.PST-VBLZ-go
 ‘Where did the girl go?’

9. DISCUSSION AND CONCLUSION

From a typological perspective, Kamsá is indeed interesting. Verbs are marked with prefixes to show tense, mood, evidentiality, and subjects and objects. Although there is

no case marking for core arguments, nouns can have many suffixes that signal thematic relations, suffixes that behave in ways between the typical behaviors of case and of postpositions. The nominal classification system is likewise somewhere between that of class and classifier, with features of both.

Kamsá is quite different from its neighbors, being the only language in southwest Colombia with verbal prefixes (Fabre, 2001). It has some features that are similar to Amazonian languages (such as a nominal classification system and prefixes on verbs), and some features that are common in Andean languages (such as complex verbal morphology, nominative-accusative alignment, nominalizing markers to form complement clauses, dependent marking for possession, and verbal marking for both subjects and objects). Kamsá therefore exhibits features of both these proposed linguistic areas, perhaps unsurprisingly given its geographic location.

Finally, the influence from Spanish is apparent in the lexicon, phonology, morphology, and syntax. Several subordinate clause constructions are formed with words borrowed from Spanish and comparatives and superlatives are formed with Spanish «más» 'more'.

10. REFERENCES

- Ávila Mora, M. (2004). Una mirada a la vitalidad de la lengua indígena Kamëntsa a través de la descripción sociolingüística. *Revista Forma y Función*, 17, 34-56.
- Campbell, L., & Grondona, V. (eds.) (2012). *The Indigenous Languages of South America: A Comprehensive Guide*. Mouton de Gruyter. <https://doi.org/10.1515/9783110258035>
- Crevels, M. (2012). Language endangerment in South America: The clock is ticking. In Campbell, L., & Grondona, V. (eds.), *The indigenous languages of South America: A comprehensive guide* (pp. 176-234). Mouton de Gruyter. <https://doi.org/10.1515/9783110258035.167>
- Eberhard, D. M., Simons, G. F., & Fennig, C. D. (eds.). (2021). *Ethnologue: Languages of the World* (24th ed.). SIL International. <http://www.ethnologue.com>
- Evans, N., Bergqvist, H., & San Roque, L. (2018). The Grammar of Engagement I: Framework and Initial Exemplification. *Language and Cognition*, 10(1), 110-140. <https://doi.org/10.1017/langcog.2017.21>
- Fabre, A. (2001). *Kamsá, a poorly documented isolated language spoken in South-Western Colombia* [Paper presentation]. Linguistic Perspectives on Endangered Languages, Helsinki, Finland.
- Howard, L. (1967). Camsa phonology. In Waterhouse, V. G. (ed.), *Phonemic systems of Colombian languages* (pp. 73-87). SIL.

- Jamiy Muchavisoy, J. N. (1999). Estructuras predicativas del kamëntsa [Paper presentation]. In *Congreso de Lingüística Amerindia y Criolla. Lenguas Aborígenes de Colombia* (pp. 251-284). Uniandes.
- Juajibiyo Chindoy, A. (1988). *Relatos ancestrales del folclor camentsa*. Fundación Interamericana.
- Juajibiyo Chindoy, A., & Wheeler, A. (1974). *Bosquejo etnolingüístico del grupo Kamsá de Sibundoy, Putumayo, Colombia*. Instituto Lingüístico de Verano, Ministerio de Gobierno.
- Lee, N. H., & Van Way, J. R. (2018). The Language Endangerment Index. In Campbell, L., & Belew, A. (eds.), *Cataloging the World's Endangered Languages* (pp. 66-78). Routledge. <https://doi.org/10.4324/9781315686028-5>
- Maddieson, I. (2013a). Consonant Inventories. In Dryer, M., & Haspelmath, M. (eds.), *The World Atlas of Language Structures Online*. Max Planck Institute for Evolutionary Anthropology. <http://wals.info/chapter/1>
- Maddieson, I. (2013b). Vowel Quality Inventories. In Dryer, M., & Haspelmath, M. (eds.), *The World Atlas of Language Structures Online*. Max Planck Institute for Evolutionary Anthropology. <http://wals.info/chapter/2>
- McDowell, J. H. (1994). *So wise were our elders: Mythic narratives of the Kamsa*. University Press of Kentucky.
- Ministerio del Interior & Cabildo Indígena Camëntšá de Sibundoy. (2012). *Diagnóstico plan salvaguarda Camëntšá. Convenio Interadministrativo No: 26345-135-2012*. https://www.mininterior.gov.co/sites/default/files/p.s_camentza_version_preliminar_o.pdf
- O'Brien, C. A. (2018). *A grammatical description of Kamsá, a language isolate of Colombia* (Doctoral thesis, University of Hawai'i at Mānoa, USA). <http://scholarspace.manoa.hawaii.edu/handle/10125/62512>
- Sandoval Camargo, L. S. (2017). *Esbozo del sistema de clasificación nominal de la lengua kamëntšá* (Bachelor's tesis, Universidad Nacional de Colombia, Colombia).
- Simons, G. F., & Charles, D. F. (2018). *Ethnologue: Languages of the World*. SIL International. <http://www.ethnologue.com>
- Van Gijn, R. (2014). The Andean foothills and adjacent Amazonian fringe. In O'Connor, L., & Muysken, P. (eds.), *The Native Languages of South America* (pp.102-125). Cambridge University Press. <https://doi.org/10.1017/CBO9781107360105.007>

II. ABBREVIATIONS

1	1st person	HAB	habitual
2	2nd person	ILL	illative
3	3rd person	IMP	imperative
A	subject of transitive sentence	INF	infinitive
ABL	ablative	INST	instrumental
ADJ	adjective	IRR	irrealis
ALL	allative	LOC	locative
ANIM	animate	NEG	negative/negator
BEN	benefactive	OBJ	object
CLF	classifier	PL	plural
COM	comitative	POSS	possessive
COND	conditional	PROG	progressive
DER	derivation	PST	past
DET	determiner	REC	reciprocal
DIM	diminutive	S	subject of an intransitive sentence
DU	dual	SG	singular
EMPH	emphatic	SUB	subordinator
EVI	evidential	SUBJ	subject
FUT	future	TOP	topic
GEN	genitive	VBLZ	verbalizer

NOTAS

- 1 Sometimes predicative constructions are formed with a null copula.
- 2 The comitative form is different from the other forms. It is not clear why.
- 3 This is structurally similar to Spanish's 'donde mi tía' to refer to where someone lives.
- 4 El Plan de Salvaguarda was a decree from the Colombian Constitutional Court stating that the national government had to create individual 'safeguard plans' for certain indigenous communities to protect them from physical and cultural extinction.
- 5 In my corpus, second person dual arguments are never marked for singular, but it is possible they could be.
- 6 This could also be analyzed in a different way: when the object is first person and the subject is third person, only the subject is marked and the third person subject is marked as zero.



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