

JODĪ-SÁLIBAN: A LINGUISTIC FAMILY OF THE NORTHWEST AMAZON¹

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The Jodī are a small indigenous group of approximately 1,000 people living in relative isolation in the Venezuelan Sierra de Maigualida. Their language has generally been treated as an isolate or left unclassified in the language classification literature. However, different researchers have proposed that Jodī is related to the Cariban, Yanomaman, Sáliban, or “Makú” language families. In this article, I investigate in depth the proposed Jodī-Sáliban relationship by means of comparison of lexical and grammatical material. Based on numerous regular sound correspondences as well as grammatical correspondences—some of which are too idiosyncratic to be nothing but the product of inheritance—I conclude that Jodī is related to the Sáliban languages.

[KEYWORDS: Jodī, Mako, Piaroa, Sáliba, Jodī-Sáliban, genetic classification, internal classification, historical linguistics]

1. Introduction. Historical-comparative studies of South American languages, and in particular of Amazonian languages, are an area of investigation still in its infancy, and those studies that have been undertaken are largely focused on the identification of larger groupings (e.g., Amerind: Greenberg 1987; TuCaJê: Rodrigues 1985), with comparative work in smaller families lagging behind largely because of a lack of descriptive studies (Kaufman 1990; Klein 1994; Campbell 1997; Rodrigues 2000; Epps

¹ A conversation with Stanford Zent in November 2014 prompted me to look more seriously at this proposed relationship. He brought to my attention the second animate plural marking strategy discussed in 3.2.1, which is idiosyncratic enough to be considered as inherited rather than diffused or coincidental. I thank Stanford Zent for sharing this observation with me and thus prompting me to investigate the issue further. Special thanks are also owed to Marie-Claude Mattéi-Müller, who kindly allowed me to remaster some of her Jodī recordings deposited in the Archive of the Indigenous Languages of Latin America for inclusion here. I gratefully acknowledge the financial support received for my doctoral fieldwork on Mako from the Vanier Canada Graduate Scholarships (Award 770-2012-0151) and thank the Endangered Languages Documentation Programme for financing my pilot Piaroa documentation project (2016–2017, Award SG-0408) as well as the Banting Postdoctoral Fellowships [Award 201409BAF-344340-258019] and the Killam Trusts for financing my postdoctoral research at the University of British Columbia (2015–2017) during which this article was written. Finally, I would like to thank two anonymous reviewers and IJAL editor David Beck for useful comments on this article and Dibella Caminsky, Zachary O’Hagan, and Françoise Rose for their comments on an early version of the manuscript. I alone am responsible for any remaining errors and shortcomings.

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2009). Nevertheless, in the past three decades there has been an exponential increase in the number of descriptions of Amazonian languages (Epps 2009; Everett 2010; Epps and Salanova 2013), and this has allowed researchers to undertake historical-comparative studies. Such studies have resulted in the identification of new relationships (e.g., Katukina and Harakmbut: Adelaar 2000) and the confirmation of earlier proposals (e.g., Jabutí and Macro-Jê: Ribeiro and van der Voort 2010), as well as in the rejection of proposals that had gained currency in the literature but were based on scant data and spurious correspondences (e.g., the putative Makú family: Epps and Bolaños 2017). However, despite the advances of the recent past in investigating proposals of genetic affiliation in South America, there are many valid connections that still need to be established. In this article, I explore in depth the proposed relationship of Jodí [ISO 639-3: yau] and the Sáliban languages (Sáliba [slc], Piaroa [pid], and Mako [wpc]).²

Jodí—also known as Yuwana, Chicano, Hoti, or Waruwadu—is spoken in the Amazonas and Bolívar states in Venezuela by approximately 1,000 people (Instituto Nacional de Estadística 2013). The language has generally been treated as an isolate or left unclassified in the language classification literature, although some proposals of a genetic relationship between Jodí and four different families of the region have been put forward elsewhere. The first one links Jodí to Yabarana [yar] and the Cariban language family (Wilbert 1963:125–26). A second proposal (Migliazza 1975, 1985; Migliazza and Campbell 1988) links Jodí and the Yanomaman languages (Ninam [shb], Sanumá [xsu], Yanomámi [wca], Yanomamö [guu], and Yaroamë [yro]). The third proposal, put forward by Henley et al. (1994–1996), places Jodí alongside Hup [jup], Yuhup [yab], Dâw [kwa], and Nadëb [mbj] in a putative Makú family that would also include Kakua/Nukak [cbv/mbr] and Puinave [pui]. Finally, the fourth proposal (Coppens 1983:253; Mosonyi 2000:660; S. Zent and E. Zent 2008:503) suggests that Jodí belongs to the Sáliban language family whose member languages are Piaroa, Sáliba, and Mako (Rosés Labrada 2016). This article focuses on this last proposal and is organized as follows: **2** provides a brief history of the putative relationship between Jodí and Sáliban, showing that it thus far rests on a number of reports—none of which provides supporting linguistic data—and on one comparison (namely, Jolkesky 2009) which merely points out shared typological characteristics and some lexical similarities without showing any regular sound correspondences or changes. In **3**, I offer an in-depth investigation of the link between Jodí and the Sáliban languages by looking at lexical (**3.1**) as well as grammatical (**3.2**) material in all four languages, showing that the data do in fact support

² Until very recently, the genetic relationship between these three languages rested on resemblances between lexical items. Recent work, however, has demonstrated that they form a language family (see Rosés Labrada 2016).

a genetic connection between these four languages. I conclude in **4** by summarizing the evidence in favor of this language family, which I propose to call Jodĭ-Sáliban, and suggesting new avenues of research.

The article also includes two online appendixes. In appendix **A**, I discuss the history of the Jodĭ-Cariban and Jodĭ-Makú proposals, neither of which ever gained many converts and both of which have been rejected on empirical grounds; at the same time, I briefly evaluate the Jodĭ-Yanomaman proposal, showing that there is no support for the proposed link between Jodĭ and the Yanomaman languages. Appendix **B** includes an in-depth discussion of prior descriptive work on Jodĭ and aims at providing the reader with the necessary background information, particularly with respect to phonetics and phonology, to interpret the representation of the Jodĭ data in this article.

2. The proposal: Jodĭ-Sáliban (plus Andoque and Ticuna). Proposals for a Jodĭ-Sáliban affiliation, more specifically with Piaroa, began shortly after initial contact with the Jodĭ was made in the early 1960s.³ Jacques Jangoux, photographer, who visited the group in 1971, reports that Robert Carneiro and Janet Chernela, then at the American Museum of Natural History, had found some similarities with Piaroa (Jangoux 2014–2015). Two years later, Eibl-Eibesfeldt, who had paid a visit to the group in 1972, states that “linguistically, the Yuwana [i.e., the Jodĭ] are distantly related to the Piaroa, but the two groups do not understand each other. Lila Blinco [a New Tribes missionary] used the comparison that the languages would be as related to each other as French is to Italian” (Eibl-Eibesfeldt 1973:139).⁴ The following year, Coppens and Mitrani (1974:133) also report a possible Jodĭ-Piaroa link. Coppens’s other publications on the Jodĭ also mention this potential link: both in his 1978 article with Guarisma Pinto (Guarisma and Coppens 1978:3) and in his 1983 book chapter (Coppens 1983:252–53), he reports that Marshall Durbin thought the two languages to be related.

Another firm proponent of the connection between Jodĭ and the Sáliban languages has been Stanford Zent of the Instituto Venezolano de Investigaciones Científicas, who worked with Piaroa for his dissertation (S. Zent 1992) and has also carried out a substantial amount of research with the Jodĭ (e.g., E. Zent and S. Zent 2002; S. Zent and E. Zent 2008). According to Eglée Zent (1999:26–27), S. Zent has observed syntactic, semantic, and morphological similarities between the two languages, in addition to the similarities

³ The word Jodĭ, which comes from *jo* /ho/ ‘person’ + *-dĭ* /di/ ‘PL.ANIM’ and literally means ‘people’, seems to be the name adopted both for the ethnic group and the language in recent work (e.g., S. Zent and E. Zent 2008; Quatra 2008a, 2008b, *inter alia*). Given the variability in the pronunciation of the intervocalic alveolar stop in the word as [t] or [d], this word can occur as [hoti] or [hodi].

⁴ My translation.

in vocabulary that had been discussed by linguists. In their joint chapter on Jodĩ, S. Zent and E. Zent also include Mako in their proposal, suggesting that this connection needs to be substantiated by a systematic comparison of these languages (2008:503–4).

Estaban Emilio Mosonyi (2000:660) also reports on a possible connection between Jodĩ and Piaroa based on personal communication with Diana Vilera Díaz, who had written an undergraduate thesis on the morphology of the language (see Vilera Díaz 1985). He mentions that the nominal classification systems are almost completely identical and that there are other similarities, both lexical and grammatical.

What all these proposals have in common is that they do not put forward any data to support the proposed genetic relationship. A more recent proposal by Jolkesky (2009), however, investigates the relationship between Jodĩ and the Sáliban languages and provides some supporting data. Jolkesky (2009) proposes a putative Macro-Daha Stock that would group together Sáliba, Piaroa, and presumably Mako, Jodĩ, Andoque [ano], and Tikuna [tca] based on a comparison of 550 lexical and morphological items. Estrada Ramírez et al. (2011) dismiss this proposal as being based on areal features; however, they do not include Jodĩ in their evaluation of Jolkesky's proposal because they did not have access to Jodĩ data. Jolkesky himself recognizes that his proposal was preliminary and now suggests that Yuri-Tikuna and the Sáliban languages—but not Andoque—are distantly related to each other and that the shared similarities between Jodĩ and the Sáliban languages must be examined further (Marcelo Jolkesky, personal communication 2015).⁵ Jolkesky is the first to show suggestive evidence in support of a Jodĩ-Sáliban relationship, but there are a number of problems with his comparison: (i) lax semantic correspondences (see, e.g., items 245 and 246 presented in 3.1), (ii) many cognates with only one match in another language, (iii) freedom with regard to what part of the word is cognate (see item 242 presented in 3.1), (iv) mixing of person affixes from different verbal paradigms, and (v) the lack of Mako data in the comparison. Therefore, this evidence requires further exploration, and I investigate this proposed relationship in depth in the sections that follow.

3. Jodĩ-Sáliban comparison. In this section, I compare Jodĩ with the Sáliban languages Sáliba, Piaroa, and Mako by looking at both lexical and grammatical data. Before proceeding to the comparison, however, a caveat is in order here: because of the discrepancies in terms of phonological

⁵ In the past few years, three proposals have been published linking Yuri [no ISO available, Glottocode: juri1235] and Tikuna: Carvalho (2009), Goulard and Montes Rodríguez (2013), and Seifart and Echeverrĩ (2014). Further, Montes (2013) evaluates Jolkesky's proposal and does not find conclusive support for a link between Yuri-Tikuna and the Sáliban languages; she also discards any link between these languages and Andoque.

TABLE 1
DIFFERENCES AMONG AUTHORS IN A SAMPLE OF SWADESH-LIST JODĪ WORDS

	Q	R & R	GP & C	M-M et al.
4	ashes <i>iniyo</i>	<i>ilēho</i>	<i>ineo</i>	<i>kuleinio</i>
6	back <i>jiwī</i>	^h <i>wī</i>	<i>hwɔ̃</i>	<i>hwīlhuw</i>
15	blood <i>ijkwō-jyu</i>	^h <i>k^wo</i>	<i>kwə</i>	<i>ihkwo</i>
35	ear <i>oneka</i>	<i>olēka</i>	<i>ol'eka</i>	<i>onēka</i>
45	feather <i>jö-jejkä</i>	<i>iko</i>	<i>tíə</i>	
56	foot <i>mějna</i>	<i>bē^hlā</i>	<i>mē^əahwa</i>	<i>mehna</i>
122	rope <i>jtuwē-ju</i>	<i>hu</i>	<i>tāko</i>	<i>hu</i>

Sources: Q = Quatra 2008a, R & R = Rodman and Rodman 2000, GP & C = Guarismo Pinto and Coppens 1978, M-M et al. = Mattéi-Müller et al. 1990

inventory between the different descriptions of Jodĭ, I have chosen to use data from all available sources on the language and present it side-by-side using the orthographic and transcription conventions of the original authors. Table 1 illustrates how some of these differences depend on the source: for example, Rodman and Rodman (2000) do not represent any nasal consonants (see items 4, 35, and 56), whereas the other sources do.

In order to help the reader, I have added a fifth column with an “idealized” IPA transcription of potentially cognate words to all the tables presenting Jodĭ lexical data. This IPA transcription of the Jodĭ forms is based both on my interpretation of the data using the available phonological descriptions of the language (summarized in appendix B) as well as, where available, on audio from the Mattéi-Müller et al. (1990) deposit in the Archive of the Indigenous Languages of Latin America (AILLA) at the University of Texas at Austin, which is provided alongside the corresponding lexical items in the online version of the article.⁶

3.1. Lexical correspondences. Tables 2 and 3 provide lexical comparisons between Jodĭ and Sáliba, Piaroa, and Mako in the Swadesh 200-word list.⁷ In these comparison tables, items that are considered cognate are shaded; in cases where there are two cognate sets for one meaning, a light/dark shading contrast is used. Although some authors argue that lists

⁶ With permission from Marie-Claude Mattéi-Müller, I have extracted as many clear repetitions as possible from the original audio and put them together in small audio files (one per word). All files have metadata that indicates what AILLA resource they came from. For body part terms, some repetitions may be accompanied by a first-person possessor, and verb forms may be accompanied by a first-person subject and have different word-final suffixes. Also, since Mattéi-Müller worked with two consultants, in some files, repetitions may come from two different speakers.

⁷ All sets are preceded by a number to facilitate in-text reference to specific sets. In the case of tables 2 and 3, this number refers to the number for any given meaning in the Swadesh list. The numbers used in tables 4 and 5 are consecutive starting with 201.

TABLE 2
SWADESH-LIST VOCABULARY RECONSTRUCTABLE TO PROTO-SÁLIBAN COMPARED WITH JODÍ

Meaning	Sáliba	Piaroa	Mako	Q	R & R	GP & C	M-M et al.	Idealized IPA	Audio
13 bite (v)	<i>nipe</i>	<i>jī</i>	<i>dǎbi</i>	<i>ñi</i>	<i>a ʔei</i>		<i>njɛrɛnɛ/mjɛrɛnɛ/</i>		
15 blood	<i>kʷau</i>	<i>ʃukʷvha</i>	<i>ʃukʷi itsobu</i>	<i>ijkwō-ʃyul ijkwō</i>	<i>ʔkʷo</i>	<i>kwa</i>	<i>mjerihito</i> <i>ihkwo</i>	<i>ni</i> <i>ikʷo</i>	15_blood.wav
22 cold	<i>dia</i>	<i>dijawʔa</i>	<i>tidʒua</i>	<i>jkeʒo</i>	<i>ʔkɛhō</i>	<i>kʰioli</i>		<i>kɛhō</i>	
31 drink (v)	<i>ōgʷe</i>	<i>awu</i>	<i>owi</i>	<i>wai</i>	<i>woi</i>	<i>woite</i>	<i>woi/wayi</i>	<i>wai ~ woi</i>	31_drink.wav
36 soil	<i>sɛxɛ</i>	<i>rɛhɛ</i>	<i>nili</i>	<i>ne</i>	<i>ʔlɛi</i>	<i>ʔe</i>	<i>ne</i>	<i>nɛ</i>	36_soil.wav
37 eat (v)	<i>ikʷe</i>	<i>ku</i>	<i>kuani</i>	<i>jkwǎi</i>	<i>ʔkʷō</i>	<i>kikoinda</i>	<i>kwā</i>	<i>kʷō ~ kwā</i>	37_eat.wav
38 egg	<i>hɛa</i>	<i>ijɛ</i>	<i>idʒapo</i>	<i>ie-ja</i>	<i>ike</i>	<i>kamame</i>		<i>ieha</i>	
39 eye	<i>pahute</i>	<i>ʃiʔɛhɛɛɛ</i>	<i>ʃibahale</i>	<i>búle</i>	<i>bule</i>	<i>buletale</i>	<i>búle/bure</i>	<i>bule</i>	39_eye.wav
41 far	<i>oto</i>	<i>xɪv</i>	<i>idɛ</i>	<i>ʃiúúá</i>	<i>ʔá</i>	<i>tana</i>	<i>tata</i>	<i>tata</i>	41_far.wav
42 fat/oil	<i>ōdɛtɛ</i>	<i>ādɛ</i>	<i>ōtɛ</i>	<i>ojte</i>				<i>ote</i>	
49 fish	<i>pahúdi</i>	<i>pxi</i>	<i>bāi</i>	<i>mojto</i>	<i>bǎiʔō</i>	<i>mohto</i>		<i>moitō</i>	49_fish.wav
53 flower	<i>seɓapu</i>	<i>ɛɽu</i>	<i>itsábú</i>	<i>bu</i>	<i>bu</i>	<i>holo bu</i>	<i>bu</i>	<i>bu</i>	53_flower.wav
66 hand	<i>umo</i>	<i>ʃumɪ</i>	<i>ʃimamu</i>	<i>mo</i>	<i>bō</i>		<i>mo</i>	<i>mō</i>	66_hand.wav
70 heart	<i>omaiidi</i>	<i>ʃimɪ iskʰi</i>	<i>ʃomahade</i>	<i>ijkwō-ju</i>	<i>ʔkwo hu</i>		<i>ihkwahu/ihkwo</i>	<i>ikwo hu</i>	70_heart.wav
71 heavy	<i>umaga</i>	<i>amɛkaʔa</i>	<i>imika</i>	<i>mékido</i>	<i>békito</i>			<i>mékito</i>	
96 meat	<i>dea</i>	<i>ʃidepɛ</i>	<i>itebia</i>	<i>inɛ</i>	<i>ilɛhai</i>	<i>inɛ</i>		<i>inɛ</i>	
99 mouth	<i>aha</i>	<i>ʃɛ</i>	<i>ʃaa</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	99_mouth.wav
106 nose	<i>ɛxu</i>	<i>ʃʃhijū</i>	<i>ʃʃidʒū</i>	<i>ño</i>	<i>ʔyō</i>	<i>niyo</i>	<i>ño</i>	<i>no</i>	106_nose.wav

116	red/yellow	<i>dua</i>	<i>tūāṭā</i>	<i>duwī</i>	<i>diawēwe</i>	<i>ṭawa</i>	<i>ṭawa</i>	<i>diawēwe</i>
119	river	<i>oxe</i>	<i>dhe</i>	<i>ol^we</i>	<i>jedā</i>	<i>heto</i>	<i>heta/heto/hEto</i>	<i>heta</i>
120	path	<i>maana</i>	<i>maene</i>	<i>manal/mālā</i>	<i>mana</i>	<i>bālā</i>	<i>malal/mana</i>	<i>mānā</i>
138	sky	<i>mūma sēxē</i>	<i>morv'hā</i>	<i>mīlēhē</i>	<i>jkyo</i>	<i>ḥ'k'o</i>	<i>čo:/younaja</i>	<i>fo</i>
139	sleep (v)	<i>ae</i>	<i>ar'ā</i>	<i>abi</i>	<i>abu</i>	<i>abuwi</i>	<i>apui</i>	<i>apu</i>
144	snake	<i>jak'v</i>	<i>aka</i>	<i>ako'da</i>	<i>ejko</i>	<i>i^hk'o</i>		<i>eko</i>
152	star	<i>sipodi</i>	<i>sirik'y</i>	<i>tsiriṭi</i>	<i>adedi-ja</i>	<i>atehā</i>	<i>ateh/atehataciṭi</i>	<i>ateṭi</i>
158	swell (v)	<i>hipame</i>	<i>hiemaṛa</i>	<i>hebami</i>	<i>laboki/laijuki/</i>			<i>laboki</i>
172	tongue ¹	<i>anane</i>	<i>ḡine</i>	<i>ḡimene</i>	<i>ḡene</i>	<i>alēlē</i>	<i>anene</i>	<i>ānēnē</i>
176	two (anim)	<i>tuxūdu</i>	<i>tāhū</i>	<i>dūhūṭaha</i>	<i>jwekyadi</i>	<i>ḥ'wek'ati</i>	<i>weyati</i>	<i>weyati</i>
179	hot	<i>duda</i>	<i>duaṛa</i>	<i>tuba</i>	<i>jtuwēdo</i>	<i>ḥ'tuwe^oto</i>	<i>tuwatohai</i>	<i>ḥ'tuweto</i>
184	what?	<i>ādaha</i>	<i>dæhe</i>	<i>tahi</i>	<i>jkwē-CLAS</i>	<i>hibi</i>	<i>kwe</i>	<i>ḥ'k^we</i>
187	white	<i>dea</i>	<i>teuṛa</i>	<i>dewi</i>	<i>kyabo</i>	<i>k'abo</i>		<i>ḡabo</i>
188	who?	<i>ādiha</i>	<i>di</i>	<i>ti</i>	<i>jwḡā/jwaiyul</i>			<i>ḡ'ai-</i>
195	woman	<i>ḡaxu</i>	<i>isahu</i>	<i>itsuhu</i>	<i>jwāidi</i>	<i>ḥ'wēya/ḥ'woiyu</i>	<i>au</i>	<i>āū</i>

Sources: Q = Quatra 2008a, R & R = Rodman and Rodman 2000, GP & C = Guarisma Pinto and Coppens 1978, M-M et al. = Mattēi-Müller et al. (1990)
 1 Zachary O'Hagan (personal communication) suggests that this word may be an Arawak borrowing.

TABLE 3
OTHER SWADESH-LIST VOCABULARY THAT IS COGNATE BETWEEN TWO OR MORE OF THE FOUR LANGUAGES

Meaning	Sálíiba	Piaroa	Mako	Q	R & R	GP & C	M-M et al.	Idealized IPA	Audio
1 all (anim)	<i>tiedí</i>	<i>ʔkʰatwíʔkʰ</i>	<i>okodéni</i>	<i>békya</i>	<i>bwekʰato/ bwekʰati/</i>	<i>tawale</i>		<i>beʃa</i>	
7 bad	<i>baéxodidi</i>	<i>súrxpʰá</i>	<i>tsulí</i>	<i>tiʔja</i>	<i>yá-há/ya-hai</i>			<i>nāhā</i>	
10 belly	<i>tece</i>	<i>ʃukʰwəma</i>	<i>ʃukʰwəwo</i>	<i>ekyo</i>	<i>ikʰo</i>		<i>etcho</i>	<i>effo</i>	10_belly.wav
12 bird	<i>níde</i>	<i>pʰijuwə</i>	<i>pʰidgna</i>	<i>ijte</i>	<i>ijʰte</i>		<i>ihite</i>	<i>ite</i>	15_bird.wav
16 blow (v)	<i>hupe</i>	<i>pʰuʔu</i>	<i>pʰubi</i>	<i>juʔyu</i>	<i>hu</i>	<i>hubute-teta</i>	<i>huiyu</i>	<i>hul/dgu</i>	16_blow.wav
17 bone	<i>pāhiā</i>	<i>ʃiwekʰa</i>	<i>ʃiwəʔo</i>	<i>wəwə</i>	<i>wāwā</i>	<i>wəwə</i>	<i>wawal/ kewane/ tirehku</i>	<i>wāwā</i>	17_bone.wav
19 bum (v)	<i>ia</i>	<i>kuʔu</i>	<i>hawi</i>	<i>jití</i>	<i>ʰtíli/ʰkaʰtíli</i>	<i>mohti bweitata</i>		<i>tíli</i>	
20 child	<i>nē</i>	<i>tʰiʔ</i>	<i>tʰiʔ</i>	<i>ini</i>	<i>ili</i>	<i>ini</i>	<i>ini</i>	<i>iní</i>	20_child.wav
23 come (v)	<i>ome</i>	<i>ijʃ</i>	<i>ijʃ</i>	<i>ji</i>	<i>ʰlu</i>	<i>jwaite</i>		<i>li</i>	
24 cut (v)	<i>naedaegal naipadel hedaga</i>	<i>kʰiʔʔpi</i>	<i>buli</i>	<i>wajitil/ bule/ naíl</i>	<i>ʰkwai/hulei</i>	<i>wohtaita</i>		<i>wʰtai/bule</i>	
26 day	<i>noʔʰidia</i>	<i>mʰyʔ</i>	<i>mélē</i>	<i>jkyado</i>	<i>ʰkʰato</i>	<i>kʰiatə</i>		<i>ʃato</i>	
30 dog	<i>oli</i>	<i>awiri</i>	<i>awiri</i>	<i>yəwi</i>	<i>yewi</i>	<i>yewi</i>	<i>yewiyiwi</i>	<i>jewi</i>	30_dog.wav
35 ear	<i>āxōxō</i>	<i>ʃtēhā</i>	<i>ʰlakiju</i>	<i>oneka</i>	<i>oleka</i>	<i>oleka</i>	<i>oneka</i>	<i>ōnēka</i>	35_ear.wav
43 father	<i>baba</i>	<i>ʃeʔy</i>	<i>ʃabeʔo</i>	<i>ʃlæl/bāba</i>	<i>ʰlai</i>	<i>lai</i>	<i>laj/ bāba</i>	<i>baba</i>	43_father.wav/ 43_father_VOCATIVE.wav
48 fire	<i>osa</i>	<i>ʔkʰurce</i>	<i>ʔkʰila</i>	<i>ʃkulē</i>	<i>ʰkule</i>	<i>kulā</i>	<i>kule</i>	<i>kule</i>	48_fire.wav
54 fly (v)	<i>hīpase</i>	<i>kyʔ</i>	<i>kəʔ</i>	<i>ikebiniē</i>	<i>ʰkeleibitil/bōwe</i>			<i>ikebine</i>	
59 fruit	<i>ipu</i>	<i>oʰbah</i>	<i>opo</i>	<i>juʔitjō</i>	<i>hu</i>	<i>hu/uhťe</i>		<i>hu</i>	
60 give (v)	<i>ico</i>	<i>ij</i>	<i>idgi</i>	<i>ʃkajiri/ʃi</i>	<i>ʰka-ʰi</i>	<i>bomiaitə</i>		<i>kati</i>	
61 good	<i>baéxodi</i>	<i>adwāʔa</i>	<i>otiwí</i>	<i>ʃitjael/ ʃitjaul/ʃitja</i>	<i>būʰkete</i>			<i>tihae/tihau/tihā</i>	
62 grass	<i>oda</i>	<i>māhijētisʰe</i>	<i>meheʔdge</i>	<i>me-ʃeʃte</i>	<i>ʰkyelō</i>	<i>kʰialō</i>		<i>mē-tētē</i>	

64	intestine	itebo	fɪwɔwɔts'ɔ	ɪwɔɪsɔ	ɟani ekyol uli ekyo	ik'o-'kwa	tebo	hamichyol ihlichyɔ	hānī efo/ uli efo	64_intestine_large.wav/ 64_intestine_small.wav
65	hair	hubo	fɪwɔwɔts'e	fɪwɔ'ɔɟe	jeɟkālīō	ɪko	uhnyahka	tuuwē	hekako	65_hair.wav
68	head	ɟu	fɪ	fɪ	ɟu	^h tu	uhtu	tu	tu	68_head.wav
69	hear (v)	ɪse	ɛhūkū	āhāk'ɪ	ɟku	āku		anku	āku	69_hear.wav
73	hit (v)	reipe	k'ɛɛ'ɪ	k'abi	ɟwī	^h wau	hm̩ɪteita		h'ɪ	
76	hunt (v)	ɟapede	p'uɪ'ɔ	p'ubī	ɟulɟiku	hufyewo-fī/	kulungeda		huliku	
						to ^h kwel				
						^h k'ɔyoŋfī/				
						huk'ɛ				
77	husband	xemi	fɪɾek'ɪ	fɪɾek'ɛ	mali	bāli	ho:	mari	māli	77_husband.wav
81	in/inside	hoana	hahkuɔhuh	ok'ɔ	ɟkwa	- ^h kwa			k'wā	
82	kill (v)	ɟahaga	kuɛɾ'ɪ iku	k'abi ik'ɪ	ɟwao/ɟulɟiku	^h k'wā līl			ɪ ^h ao/huliku	
84	lake	opu	dubora	ɔpɛtsobu	mabau	bābo			mabau	
90	live (v)	padi	k'ɪ	hanī	me/hānā jowa	hoa bēi			mē/hānā howa	
91	liver	ododel/	fɪɾ'ɪɟe	ok'ɛheba	odede	oteko	otete	oteto	otete	91_liver.wav
		odede								
92	long	ɟokoe	ɪɾɔɾ'ɔ	ɪɟɔbe	ɟitami	^h tabī	tamī ihyī		tāmī	
98	hill	ɪnak'ɔ	muɛk'ɔ	mɪsɔɾo	ɟnēwa	ilēwā	inawa	inewa	ɪnēwa	98_hill.wav
102	near	ɟenehe	ɾk'ɪ	ɟene	hāɟnenī	habēlī	menalmana		ɟanenī	
103	neck	ɔk'ɔ	fɪɾupɛk'ɔ	fɪlāmēɾō	ɟkwɔ	^h k'wā ^h wi	kwɔ	kwā/hwal/	k'wā	103_neck.wav
								kwalkwā		
109	one	hotobe	ɟātētē	bak'ō	ɟadowɔ	hāɾōhā	yɔɔɔ	ɟadowā	hāɾōwā	109_one.wav
111	person	hoho	ɪ ^h hāɪsā	hoho	ɟo	ho			ho	
112	play (v)	seβa: keleca	hareu	alewī	ɟai ɟkyewayaki	ahweo	nebote			
127	say (v)	ape	pɛɾ'ɪ	ɟɛbawī	ɟɔɟɪɟi	ūɪɪɪɪ'ɪ	takɔɾɔ		ūɪɪɪ	
131	seed (pl)	adeladete	hɛk'ɔwɛ		adē		ate		ate	
132	sew (v)	ɟijina	ɪ ^h ɪ	ɪ ^h bi	dāi	tē	bilelabe		tai	
134	short	sōk'ɪ	beuɔ	pebī	alikwēde	alik'ɛte	kalai		alik'ɛte	
135	sing (v)	koha rɪpe	ɾaɾ'ɪ	lōbī	ɟobel ɟnemɔɟ	hobei	ɟobaleite		ɟobaleite	

TABLE 3—continued

Meaning	Sáliba	Piaroa	Mako	Q	R & R	GP & C	M-M et al.	Idealized IPA	Audio
136 sit (v)	ŋe	pāmadf	bāni	dowaki /jkadaul/ dau/ ijkēli	towā	toq̄inkida		ikeli	
137 skin	ŋp̄x̄x̄	fihēlā	ūsēdō	fedodo	he-toto		hetoto	hetoto	137_skin.wav
147 spit (v)	supe	fūrepu	tsubi	jolibe	hulebe	uĩbeahita	hulepe	hulepe	147_spit.wav
151 stand (v)	tepage	k'āmādf	hāmāti	jkawgli	wā	walātawa	kuwāli	kuwāli	
154 stone	inacu	idyk'i	inawa	inē-jiji	īto	ihī	inēpal/ihē	inē-hiiti /inēpa	154_stone_1.wav/ 154_stone_2.wav/ 154_stone_PL.wav
157 sun	hohote	k'ēwā	hāwō	jīnēwā	h'itēwā	tiñewa	tinawa	tinewā	157_sun.wav
160 tail	inea	īwīr̄p̄ā	īwari'bo	enēna bukē	ilēlā buke	ininabukati	enēna buke	enēna buke	
166 think (v)	onogupegi	amuk'edf	omuk'ani	budeki	ū		budeki	budeki	
169 three	hehebadī	wemetuk'we	wāmeduk'wa	abajlédē ae	h'wek'ato/h'wek'a atei/h'wek'ati		maloteal/ paloteol/ palotea	maloteal/ paloteol/ palotea	169_three.wav
173 tooth	oixu	ifoku	fō'oge	ujku	h'ku	uhku:	uhku	uku	173_tooth_SG.wav/ 173_tooth_PL.wav
174 tree	nūgu	dau	towi	jtauwījtau	h'tawī		tawī/taulaw tawītau	tawī/taulaw tawītau	174_tree_SG.wav/ 174_tree_PL.wav
178 walk (v)	gupe	k'ē'ē'effī	k'ē'ē'effī	u/mana u	b'ke ū		manau	ū	178_walk.wav
181 water	kaito	ahija	oh'ido	au	au	au:	au	au	181_water.wav
185 when?	omahena	tijēni	diani	jibi baede	-tolā		h'ibi baede	h'ibi baede	
186 where?	tēna	ty	dēna	jtebōna	h'tebolā	timye	tebōna	tebōna	
190 wife	ēxāxu	f'irek'wa	f'ilek'wa	au	hayu/h'u	ho:	āu/au	āu	190_wife.wav
192 wing	hariba	uf'abae	ōf'āpa	mēo	bī(w)au/ bēho	ahkudawahwa	mēo	mēo	
196 forest	rāpo	dē'ā	tebo	jtau jkyo	yelito		cho/taukuna tau jfo	cho/taukuna tau jfo	196_forest.wav

Sources: Q = Quatra 2008a, R & R = Rodman and Rodman 2000, GP & C = Guarisma Pinto and Coppens 1978, M-M et al. = Mattéi-Müller et al. (1990)

of 200–300 items are not sufficient (e.g., Kaufman 1990:18), classifications of South American languages based on short lists of basic vocabulary yield results that are fairly consistent with results arrived at by more traditional methods (see Hammarström 2014). In addition, basic vocabulary has been shown to be resistant to borrowing both cross-linguistically (Tadmor et al. 2010) and throughout the Northwest Amazon more specifically (Bowern et al. 2011). I have chosen the Swadesh 200-item list because of its ready availability for all of the languages included in the comparison. I have taken out the eleven elements that are more grammatical in nature (namely, items 2 ‘and’, 5 ‘to’, 67 ‘he’, 72 ‘here’, 78 ‘I’, 162 ‘there’, 167 ‘this’, 168 ‘you (sg)’, 182 ‘we’, 194 ‘with’, and 198 ‘you (pl)’); these will be dealt with in 3.2. In addition, I collapsed items 116 ‘red’ and 200 ‘yellow’. This resulted in a lexical list with 188 items.

The data used here come from the following sources: Estrada Ramírez (2000) and Estrada Ramírez et al. (2014–2018) for Sáliba, Mosonyi (2000) and in a few instances Krisólogo (1976) and Fedemma (1991b) for Piaroa, Rosés Labrada (2015a, 2015b, 2016) for Mako, and Guarisma Pinto and Copens (1978), Mattéi-Müller et al. (1990), Rodman and Rodman (2000), and Quatra (2008a) for Jodĭ. For the purposes of this article, I count as cognates only those words for which there are at least two or more contiguous cognate segments,⁸ with the exception of two types of correspondence. The first was with cognates that only had one segment (items 68 ‘head’ and 99 ‘mouth’ as well as the roots of the Sáliba verbs 37 ‘eat’ and 139 ‘sleep’). In the second, the two consonants in a CVC sequence are cognate but the vowel is not (e.g., items 35 ‘ear’, 71 ‘heavy’, and 192 ‘wing’).

In table 2, I show that out of 33 lexical items reconstructable for Proto-Sáliban (i.e., lexical items present in all three established Sáliban languages) in the modified 188-word Swadesh list used here, 21 have a Jodĭ cognate. Although this may not seem like a particularly high rate of lexical retention in Jodĭ, notice that 17 of these 33 meanings are in the Leipzig-Jakarta list of meanings resistant to replacement and borrowing (Tadmor et al. 2010), and only 3 of those 17 meanings do not have a cognate in Jodĭ—namely, 31 ‘drink’, 152 ‘star’, and 188 ‘who’. Table 3 shows 25 additional sets (of a total of 62 sets) in which there is some degree of cognacy between Jodĭ and one or two of the three Sáliban languages. However, cognacy in the words for ‘father’ (*baba* in both Sáliba and Jodĭ, item 43) should be ruled out as being the product of common inheritance since it is recognized that these are nursery forms that are common cross-linguistically (see discussion in Campbell 2008:198). In other words, we have 45 Jodĭ-Sáliban cognate sets out of 188 etyma compared. This represents approximately 23.93% of lexical material

⁸ This perhaps resulted in some possible cognates not being counted (e.g., item 31 ‘drink’), where the Jodĭ form could be considered cognate if we think that there has been metathesis of the vowel and semiconsonant (cf. *ōg**e:awu:owi:wai/woi/woite/woi/wayi), but proceeding in this way ensures that the cognates identified are more reliable.

with some degree of cognacy, which is above the 10% threshold of “promising correspondences” postulated by Kaufman (1990:25) as being needed for a long-distance relationship to be considered worthy of further exploration.

Finally, the 16 sets in table 4—sets that I had previously noticed but that are not part of the Swadesh list—and the cognate sets in table 5—sets proposed by Jolkesky that have not been included in the previous three tables—show that expanding the search for cognates beyond the Swadesh list is likely to yield even more cognate sets.⁹

The resemblances between the different cognate sets in the preceding tables are striking; however, although they constitute a first step in proving a genetic relationship (see Greenberg 2005 [1957]), resemblances are usually not considered to be sufficient evidence in and of themselves (see, e.g., Campbell 2008). What is key is that the different cognate sets show regular sound correspondences. These are presented in table 6, in which supporting lexical sets for each of the most robust, regular sound correspondences observed are listed next to the corresponding sounds in each of the languages. The cognate lexical sets, drawn from the modified Swadesh list used in this article (tables 2 and 3) and from the additional sets provided in table 4, are divided depending on whether or not the sets show a cognate in all four languages; those sets that only show partial cognacy are further subdivided into whether or not they include a Jodí cognate. For example, for the m:m:m:m sound correspondence, there are four supporting lexical sets (items 66 ‘hand’, 71 ‘heavy’, 120 ‘path’, and 212 ‘corn’) with a cognate in each of the four languages and an additional 10 sets that show partial cognacy, two of which include a Jodí cognate (62 ‘grass’ and 208 ‘plains’) and eight of which do not (26 ‘day’, 70 ‘heart’, 98 ‘hill’, 138 ‘sky’, 151 ‘stand’, 158 ‘swell (v)’, 166 ‘think (v)’, and 169 ‘three’). Note that certain cognate sets may support a single correspondence more than once; this is indicated in the table with an ‘x’ followed by a number for “number of times” (e.g., the cognate forms of item 102 ‘near’ in both Sáliba and Mako have two /e/ vowels, and therefore this set counts twice for the observed correspondence e:e:e:e and I have added “x2” next to 102 in the final column on the table for said correspondence). Note that there are two bilabial stop series; the first is for word-initial segments, and the second is for intervocalic segments. Notice also that in Jodí there is variation in the production of the bilabial and alveolar stops, which are sometimes realized as voiceless and other times as voiced; this variation is captured in the table with a ~ sign.

The cognate sets and regular sound correspondences presented here provide strong support for a link between Jodí and the Sáliban languages. Further support comes from an evaluation of how many cognate segments there are

⁹ As Jolkesky himself cautions (personal communication, 2015), the sets in table 5 “must be taken only as possible cognates.”

TABLE 4
ADDITIONAL SIMILARITIES IN VOCABULARY BETWEEN SÁLIBAN AND JODÍ

	Meaning	Sáliba	Piaroa	Mako	Quatra (2008a)	Idealized IPA	Audio
201	agouti ¹	<i>uhwi</i>	<i>ækari</i>	<i>oʔori</i>	<i>ajkuli</i>	<i>akuli</i>	
202	jaw	<i>āhsa</i>	<i>a'k'ea</i>	<i>aka</i>	<i>aka</i>	<i>aka</i>	
203	manioc	<i>seña</i>	<i>ire</i>	<i>ile</i>	<i>alē</i>	<i>ale</i>	203_manioc.wav
204	put in	<i>pane</i>	<i>rihtu</i>	<i>ani</i>	<i>ani</i>	<i>ani</i>	
205	plot	<i>huna:</i>	<i>phathah</i>	<i>batʰo</i>	<i>balo</i>	<i>balo</i>	205_plot.wav
206	do (v)	<i>kelega</i>	<i>he'puh</i>	<i>hābī</i>	<i>jaī</i>	<i>hāī</i>	
207	exit	<i>sapee</i>	<i>raocih</i>	<i>laibibi</i>	<i>laibi/laibi</i>	<i>laibi</i>	
208	plains	<i>kāāde</i>	<i>mehokap'anara'</i>	<i>mehe</i>	<i>me</i>	<i>mē</i>	208_plains.wav
209	mud	<i>alutixu/sajixu</i>	<i>re'da'wa</i>	<i>lete'di</i>	<i>lējiteda</i>	<i>leteda</i>	209_mud.wav
210	<i>guama</i> ²	<i>subo</i>	<i>wipo'ruE'</i>	<i>luwa</i>	<i>lawē</i>	<i>lawe</i>	
211	vulture	<i>wadguli</i>	<i>ehohl'eho</i>	<i>bole</i>	<i>molē/mole/bole/bole</i>	<i>bōle</i>	
212	corn	<i>jomo</i>	<i>namita</i>	<i>pōmu</i>	<i>jtāmu</i>	<i>tāmū</i>	212_corn.wav
213	yam	<i>g'ak'a</i>	<i>hua'reh</i>	<i>h'ale</i>	<i>jwape</i>	<i>h'ālē</i>	213_yam.wav
214	plantain	<i>kābule/sōjk'iba</i>	<i>parure</i>	<i>balule</i>	<i>jwalulē</i>	<i>h'ālule</i>	214_plantain.wav
215	pineapple ³	<i>hana:</i>	<i>k'wæ</i>	<i>hana</i>	<i>nana</i>	<i>nānā</i>	215_pineapple.wav
216	language	<i>huto</i>	<i>thiwene</i>	<i>hwene</i>	<i>ine</i>	<i>inē</i>	216_language.wav

¹ An IJAL reviewer suggests that “the word for ‘agouti’ appears to be from Tupi-Guaraní, possibly through the intermediate of a Cariban language; cf. Surinam Carib *akucuri* (Hoff 1968:13–14).”

² A species of plant belonging to the genus *Inga*

³ This may be a Tupi-Guaraní loan (Françoise Rose and Zachary O'Hagan, personal communication 2015).

TABLE 5
SIMILARITIES IN VOCABULARY BETWEEN SÁLIBAN AND JODĪ POINTED OUT BY JOLKESKY (2009) BUT NOT INCLUDED IN THE OTHER TABLES

Meaning	Sáliba	Piaroa	Jodĭ
218 father	<i>ae</i>	<i>æi</i>	<i>ae</i>
219 family	<i>{is}aebadu</i> (relatives)		<i>aebodĭ</i> (fathers and sons)
220 mother	<i>o</i>	<i>hu</i>	<i>u</i>
221 child	<i>{ha}imo</i>	<i>mui{ǎjǎ}</i>	<i>{bad}ibo</i>
222 spirit	<i>kaðhā</i>	<i>āk^wārūwā</i>	<i>^hkahohā</i>
223 fearsome spirit	<i>ðbāi</i>	<i>awe{ta}</i>	<i>awei{radi}</i>
224 face	<i>paha</i>		<i>baha{ja}</i> (head)
225 hair	<i>ūbo</i>	<i>tuwv{c^he}</i>	<i>tuwə</i>
226 liana	<i>poxu</i>	<i>wipyhu</i>	<i>ipuhu</i>
227 palm		<i>tebā{ri}</i> (temari)	<i>^hdeba</i> (pupunha)
228 palm		<i>uru</i> (palmeira real)	<i>uru</i> (Attalea maripa)
229 armadillo	<i>ak^wa</i>	<i>ak^wā</i>	<i>a^hko</i>
230 owl		<i>x^warara</i>	<i>{b}ororo</i>
231 macaw	<i>eba{la}</i>		<i>heba</i>
232 catfish	<i>hibali</i>	<i>{n}i^wa</i>	<i>hiwari</i>
233 scorpion	<i>īdi{saka}</i>	<i>hidi{ju}</i>	<i>i^hti</i>
234 wasp		<i>pāhu</i>	<i>būhā</i>
236 feather	<i>hubo</i> (hair, feather)	<i>{u}x^wabi{jæ}</i>	<i>buwə</i> (hair)
235 beak		<i>aba</i>	<i>abo</i>
236 speak (v)		<i>ukuyku</i>	<i>kuiki</i>
237 kill (v)	<i>da</i>	<i>{k}^wadā</i>	<i>{^h}waudĭ</i>
238 come (v)	<i>omā</i>		<i>^hrubadau</i>
239 go (v)	<i>gu</i>		<i>^hru</i> (come)
240 fly (v)		<i>kvĭ</i>	<i>{da}ike</i>
241 green, blue	<i>noci</i>		<i>du^hti</i>
242 big, long	<i>otoo{na}</i>	<i>ɣtyaa</i>	<i>{b}a^htu</i>
243 wet		<i>ak^waa</i>	<i>^hk^wa{ta}</i>
244 one	<i>tote{sa}</i>	<i>tetæ</i>	<i>^htite{k^wa}</i>
245 two		<i>taire</i>	<i>taari</i> (between)
246 two	<i>tūhū</i>	<i>tāhū</i> (second)	<i>tu^hru</i> (together)
247 three	<i>{heh}ebadi</i>	<i>waby-</i>	<i>ab^arede{?a}</i>
248 night	<i>tādō</i> (dark)	<i>jvdv</i>	<i>idĭ</i>

in the different sets (see Greenberg 2005 [1957]:36; Brown et al. 2014). Table 7 indicates that of the 61 sets with a Jodĭ cognate, 16 show at least three regularly corresponding segments and 7 show four corresponding segments, thus lending support to the idea that the observed lexical similarities are the result of common inheritance.

In addition to these regular sound correspondences, at least one regular process of sound change is attested in the data: the deletion in Jodĭ of a *-hV*

syllable where the *-V* is identical to the vowel in an adjacent syllable. In other words, a Sáliban *-hV* syllable in these lexical sets corresponds to \emptyset in Jodĭ. This is exemplified by the cognate sets for ‘soil’, ‘grass’ lit. ‘plains hair’, ‘hear (v)’, and ‘person’, presented above and repeated in table 8 for ease of comparison; the corresponding syllable is underlined in the Sáliban cognates.

As shown in table 9, another seemingly regular phonological process is the deletion of word-initial vowels /o/ and /i/ in Jodĭ. For example, in the set for item 119 ‘river’, where Sáliba, Piaroa, and Mako all have an initial V syllable (o:a:o), Jodĭ has a corresponding \emptyset . Further investigation is needed to understand the motivating factors behind this process because it does not seem to be fully regular (for a counterexample, see item 42 ‘fat/oil’ in table 2, where the Jodĭ form still has the initial vowel).¹⁰

The preceding discussion of the lexical data used in this comparison shows that not only are there numerous cognate lexical items but also regular sound correspondences and sound change processes exist. I turn now to the discussion of grammatical data.

3.2. Grammatical correspondences. In this section, I discuss grammatical correspondences between Jodĭ and the Sáliban languages, drawing on published sources: Estrada Ramírez (2000), Estrada Ramírez et al. (2014–2018), and Morse and Frank (1997) for Sáliba; Mosonyi (2000) and in a few instances Krisólogo (1976) and Fedemma (1991a) for Piaroa; Quatra (2008a, 2008b) and Vilera Díaz (1985, 1987) for Jodĭ; and Rosés Labrada (2015a, 2015b, 2016) as well as my own fieldnotes for Mako.

Table 10 shows a comparison of the person pronouns in all four languages. As can be seen, the similarities are rather restricted: they concern the velar consonant of second-person pronouns and parts of the first-person plural and third-person plural pronouns—specifically, the last syllable, which is a plural marker suffix for animates.

It would be easy to discard a proposed relationship between Jodĭ and the Sáliban languages that is only based on these scant similarities. However, there are numerous grammatical correspondences in both the nominal and verbal domains, some of which are idiosyncratic enough, in the sense of Campbell (2008:177), to rule out accident, onomatopoeia, or borrowing. These correspondences are summarized in table 11, which presents Jodĭ corresponding morphemes from the same four sources used for the lexical data above, and discussed in sections 3.2.1 and 3.2.2.

3.2.1. Grammatical correspondences in the nominal domain. The first striking similarity in the nominal domain, defined here as the noun or the noun phrase, concerns the marker *-ni*. In Mako, *-ni* is a non-subject case marker and can occur on the most patient-like argument of a transitive verb,

¹⁰ See also the second-person pronouns, both singular and plural, in table 10.

TABLE 6
REGULAR SOUND CORRESPONDENCES AND SUPPORTING SETS

		Supporting sets with cognates across the four languages		Supporting sets with cognates across three or two languages	
		Include a Jodi cognate		Do not include a Jodi cognate	
Sáiliba	Piaroa	Mako	Jodi		
p	p	b	b	24, 205, 211 (nas) ¹	49, 136, 147
p	ʔ	b	p~b	139, 207	43, 54, 73, 76, 84, 132, 135, 178, 196
d	d	t	d~t	12, 61, 91, 174, 209	22, 92, 151, 166, 188, 196
t	t	d	d~t	12, 91, 109, 137, 200?	41, 169, 176, 185
k ^w	k ^w	k ^w	k ^w	81, 103	10, 73, 77, 166, 169, 178, 190
--	k(u)	k ^w (i)	ku	48, 69	82
k ^w	k	k	k	144	54
g	k	k	k	35, 136	
ɲ	j	ɕ	ɲ		12, 22, 60, 181
m	m	m	m	62, 208	26, 70, 98, 138, 151, 158, 166, 169
n	n	n	n	98 (nas), 154, 160 (nas), 186, 204	102, 185
s	r	l/r	l	24, 35 (nas), 39, 48, 201, 203, 209, 214 (nas), 215 x2	7, 26, 30, 77, 103, 112, 135, 138, 152, 160, 190
--	∅	w	w	174, 210	
x	h	h	∅	69	35, 138
--	t ^h	t ^h	l	205	
h	h	h	h	111	158
h	h	h	∅	62, 111, 208	
a	æ	a	a	38, 99, 120 x2, 139, 215 x2	12, 43, 64, 70, 73, 127, 136, 157, 158, 166, 169 x2, 178, 186, 192

e	e	e	39, 42, 172	91, 131, 136, 137, 203, 208, 209, 214, 216	17, 65, 77, 102 x2, 112, 134, 169, 178, 190, 196
i	i	i		12, 20 x2, 61, 98, 136, 154, 160, 201, 216	12, 17, 22, 23, 49, 77, 152, 160, 181, 185, 188, 190
o	a	o	42	91, 111, 137, 211	17, 64, 70, 84, 103, 135, 157, 160, 181 x2, 190, 196
u	u	u	53, 195, 210	24, 68, 214	7, 10, 12, 16, 76, 84, 103 x2, 147, 166, 169, 176
i	i	i	13	37, 204, 207	23, 54, 73, 90, 132 x2, 135, 151, 166, 178, 185

¹ (nas) next to a number for a set means that the Jodí cognate either has a possibly nasalized consonant or that some of the nasality is missing in Rodman and Rodman (2000); as discussed in the text. x2 means that a given set counts twice for a given correspondence (i.e., the corresponding segments occur twice in the set).

TABLE 7
NUMBER OF SETS WITH A JODI COGNATE ACCORDING TO
NUMBER OF MINIMALLY CORRESPONDING SEGMENTS

Number of corresponding segms	Number of sets
1	4
2	34
3	16
4	7

TABLE 8
COGNATE SETS SUPPORTING *-hV* DELETION PROCESS IN JODI

	Sáliba	Piaroa	Mako	Q	R & R	GP & C	M-M et al.
36 soil	<i>sěxě</i>	<i>rěhě</i>	<i>nihí</i>	<i>ne</i>	<i>^hlěi</i>	<i>ĭe</i>	<i>ne</i>
62 grass	<i>oda</i>	<i>měhijě-ts'e</i>	<i>mehe-²dze</i>	<i>me-jtejte</i>	<i>^hkyělō</i>	<i>k^hialō</i>	
69 hear (v)	<i>ĭse</i>	<i>ěhĭkū</i>	<i>ěhăk^vi</i>	<i>ăku</i>	<i>ăku</i>		<i>anku</i>
111 person	<i>hohō</i>	<i>^hiĭhă ĭsă</i>	<i>hohō</i>	<i>jo</i>	<i>ho</i>		

Sources: Q = Quatra 2008a, R & R = Rodman and Rodman 2000, GP & C = Guarisma Pinto and Coppens 1978, M-M et al. = Mattéi-Müller et al. (1990)

TABLE 9
COGNATE SETS SUPPORTING INITIAL-VOWEL DELETION PROCESS IN JODI

	Sáliba	Piaroa	Mako	Q	R & R	GP & C	M-M et al.
48 fire	<i>osa</i>	<i>ĭkură</i>	<i>ĭk^vila</i>	<i>ĭkulě</i>	<i>^hkule</i>	<i>kuĭ</i>	<i>kule</i>
61 good	<i>baěxodi</i>	<i>adiwaŋa</i>	<i>otiwaŋō</i>	<i>ĭtija</i>	<i>bă^hkete</i>		
71 heavy	<i>umaga</i>	<i>amăkaŋa</i>	<i>imika</i>	<i>mėkido</i>	<i>bėkito</i>		
81 in/inside	<i>hoana</i>	<i>hăhkuóhuh</i>	<i>ok^va</i>	<i>ĭkwa</i>	<i>-^hkwa</i>		
103 neck	<i>ōk^va</i>	<i>ĭurupăk'a</i>	<i>ĭŭlŭměŕō</i>	<i>ĭkwa</i>	<i>^hk^vă ^hwi</i>	<i>kwa</i>	<i>kwă/hwalkwalkwă</i>
119 river	<i>oxe</i>	<i>ăhe</i>	<i>oh^ve</i>	<i>ĭedă</i>	<i>heto</i>		<i>hetal/heto/hEto</i>

Sources: Q = Quatra 2008a, R & R = Rodman and Rodman 2000, GP & C = Guarisma Pinto and Coppens 1978, M-M et al. = Mattéi-Müller et al. (1990)

the most recipient-like argument of a ditransitive verb, a location, a goal, or an instrument (Rosés Labrada 2015a:344–50). The first two uses are exemplified here in (1) and (2), where the patient-like argument of ‘call’ and the recipient-like argument of ‘give’ are both marked with *-ni*.¹¹

¹¹ Abbreviations: 1 = first person, 2 = second person, 3 = third person, ACT = active, ADD = additive, ADV = adverbial suffix, AFF = affirmative, ALL = allative, ANIM = animate, AUX = auxiliary, CL = classifier, CLS2 = marker for verb roots belonging to Class II in their non-finite and imperative forms, CAUS = causative, COMP = complement, CONTR = contrastive, COP = copula, COPRET = copreterite, DISC = discourse, DUM = dummy root, DUR = durative, FEM = feminine, FUT = future, IMP

TABLE 10
COMPARISON OF PERSON PRONOUNS

	Sáliba	Piaroa	Mako	Q	R & R	GP & C	V	M-M et al.	Audio
78 1SG	<i>hísi</i>	<i>hí</i>	<i>ihí</i>	<i>jye</i>	<i>h^hye</i>	<i>ya</i>	<i>h^he</i>	<i>ye</i>	78_1SG.wav
168 2SG	<i>ũku</i>	<i>uku</i>	<i>ik^wĩ</i>	<i>jkë</i>	<i>h^hke</i>	<i>ka</i>	<i>kə</i>	<i>ke/kye</i>	168_2SG.wav
67 3SG:MASC	<i>joho</i>	<i>h^wãũ</i>	<i>ite</i>	<i>bijkye/jkye</i>	<i>h^hk^ee</i>	<i>k^hie</i>	<i>k^ee</i>	<i>kje/che</i>	67_3SF_MASC.wav
3SG:FEM	<i>hixu</i>	<i>johu</i>	<i>ihulĩsu</i>	<i>biyu/kyu</i>			<i>ju</i>		67_3SF_FEM.wav
182 1PL	<i>ãxu</i>	<i>uhutu</i>	<i>ik^widi</i>	<i>jyedi</i>	<i>h^hyeti/h^hye</i>	<i>tuti</i>	<i>h^hedi</i>	<i>yeti/ hati</i>	182_1PL.wav
198 2PL	<i>ũkudu</i>	<i>ukutu</i>	<i>ik^widi</i>	<i>jkedi</i>	<i>h^hketi/h^hke</i>	<i>de</i>	<i>kədi</i>	<i>yeti</i>	198_2PL.wav
163 3PL	<i>hitu</i>	<i>h^wætĩ</i>	<i>idi</i>	<i>bidĩ/didi</i>			<i>bidĩ/didi</i>	<i>didĩ/diti</i>	163_3PL_PROX.wav 163_3PL_DIST.wav
163 3PL:FEM								<i>dyudi</i>	

Sources: Q = Quatra 2008a, R & R = Rodman and Rodman 2000, GP & C = Guarisma Pinto and Coppens 1978, V = Vilera 1985, M-M et al. = Mattéi-Müller et al. (1990)

This same marker can also appear on locative arguments, as in (3), as well as on goal arguments of motion verbs, as in (4).

- (3) *hōba-ma tebo-nī h-ō-∅*
 that.one-TOP woods-NON.SUBJ stand-CL.MASC-3COP
 ‘He lives in the woods.’ (lit. ‘He always stands in the woods.’)

- (4) *ī-hīb-emi-ma tahi-da wāthō-da*
 3SG.MASC-hide-ADV₂-TOP what-CONTR hollow.trunk-CONTR
lahu-nī-ma tsi-b-ib-iki
 hole-NON.SUBJ-TOP go.into-CLS2-?-NEG¹²
 ‘Where it (the agouti) hides is that thing . . . hollow trunks; it does not go into holes.’

(Rosés Labrada 2015a:347)

Finally, *-ni* serves to mark instrument arguments as shown in (5), where it appears on ‘hammer’.

- (5) *martillo-nī ʔdo-b-i ∅-ik^w-in-obe*
 hammer-NON.SUBJ hit-CLS2-NON.FIN 3SG.MASC-AUX-PST-TAM₂
 ‘He was hitting [the carrot] with a hammer.’

(Rosés Labrada 2015a:345)

According to Quatra (2008a:200), Jodī has an enclitic postposition =*nī* with a similar distribution since, as his examples show, it can occur with the direct object of a verb, with an instrument, with locations (where it can variably appear as =*nē* or =*na*),¹³ and with time expressions. (6) shows =*nī* on the direct object of the verb ‘call’, and the two examples in (7) show that it can also appear on an instrument argument.

Jodī

- (6) *ama=nī abe di!*
 mother=POST.POS₁ call ACT:IMP
 ‘Call your mother!’

- (7a) *jkwējae=nī*
 what.thing=POST.POS₁
 ‘With what?’

- (7b) *jela=nī*
 machete=POST.POS₁
 ‘with the machete’

(Quatra 2008a:200)

¹² The function of the morpheme *-ib* remains unclear (see Rosés Labrada 2015a:320–23).

¹³ Note, however, that Quatra (2008a) does not provide any examples of the other two variants in use.

In addition to patient-like arguments of transitive verbs and instrument arguments being marked are examples such as (8) and (9), in which =*nĩ* can appear on a locative argument and on a time expression.

(8) jye nuwe=**nĩ**
 1SG house=POST.POS₁
 ‘in my house’

(9) baede jtuwö=**nĩ**
 before year=POST.POS₁
 ‘many years ago’

(Quatra 2008a:200)

However, according to Quatra (2008a:233), Jodĩ =*nĩ*, unlike Mako -*nĩ*, cannot occur on the indirect object argument of a ditransitive verb, which is marked by a postposition *likë*.

(10) jkë ama likë jkajtĩ di
 2SG.PRO mother INDIR.OBJ give ACT:IMP
 ‘Give (it) to your mother!’

(Quatra 2008a:233)

A cognate marker is attested in Piaroa, albeit with a more restricted distribution. According to Mosonyi (2000), Piaroa patient arguments are marked with a -*ri* suffix (11), but as the example in (12) from Krute (1989) shows, this suffix can also occur in the recipient argument of a ditransitive verb.

Piaroa

(11) uku 't^hi-**ri** 'tv-p-u-hæ
 2SG.PRO 1SG.PRO-OBJ see-CLS2-NON.FIN-2
 ‘You look at me/you see me.’

(Mosonyi 2000:662)

(12) dæhe k^w-ij-æk^w-aʔati t^hi-**ri**-mæ
 WHAT 2SG-give-FUT-PERMANENTLY 1SG.PRO-OBJ-TOP
 ‘What are you going to give me?’

(Krute 1989:147)

Piaroa -*ri* and Mako -*nĩ* are cognate; this is supported by the fact that Mako -*nĩ* is sometimes pronounced [li] by some speakers (see Rosés Labrada 2015a:201) and l:r is a regular correspondence between these two languages, as is i:i (see table 6).

In Sáliba, Morse and Frank (1997:50) argue that the suffix -*ri* is used with both animate direct and indirect objects (called “complements”).¹⁴ This is exemplified here in (13) through (15).

¹⁴ Estrada Ramírez (1996:92–96), who worked with Sáliba speakers from the Colombian department of Meta, gives the form of this suffix as -*di* and glosses it as ‘dative’. Note, however,

Sáliba

- (13) hĩsi da-d-ǎ-ʔri ɕáama-ri hĩdanóhoʔo rāpó-ho
 I kill-1SG-IND-3MASC.COMP deer-COMP there woods-LOC
 ‘I killed the deer there in the woods.’
- (14) hĩsi ʧ-ijf-ǎ-xa k^weluta-ʔa ʧ-ájfu-ri
 I 1SG-give-IND-3FEM.COMP paper-CL 1SG-older.sister-COMP
 ‘I gave the notebook to my older sister.’
- (15) hĩsi ʧ-óxu-ri ʧ-ijf-ǎ-xa óli-ri
 I 1SG-mother-COMP 1SG-give-IND-3FEM.COMP dog-COMP
 ‘I gave the dog to my mother.’

(Morse and Frank 1997:46, 51)

In (13) the noun for ‘deer’, the patient argument of the verb ‘kill’, is marked with *-ri*, whereas in (14) it is the recipient argument of the verb ‘give’ that is case-marked with *-ri*. In (15), on the other hand, both the patient and recipient arguments are marked with *-ri*.

In addition to their formal similarity, one other characteristic this cognate suffix has in common across all four languages is that, when used to mark patient- or recipient-like arguments of a verb, it occurs primarily or exclusively on animate nouns. For Jodĭ =*ni*, Quatra (2008a:200) affirms that, when it occurs on direct objects, it is used when the noun refers to “people or animals.” Rosés Labrada (2015a:344) discusses this for Mako, and although it is not discussed explicitly for Sáliba in the literature, a comparison of (14) and (15) shows that both the patient-like argument and the recipient-like argument are marked in (15) where both nouns are animate, whereas only the animate recipient-like argument is marked in (14) and the inanimate patient-like argument ‘notebook’ is not. Although the available Piaroa examples are limited, it seems that this generalization also applies to Piaroa.

Another grammatical similarity between Piaroa, Mako, and Jodĭ is the presence of a cognate venitive marker. The Mako venitive marker *-k^wi* in (16) is cognate with the Piaroa suffix *-ku* (17).¹⁵ The cognacy between these two suffixes is supported by lexical items such as ‘listen’ (item 69, table 3) and by the second-person (both singular and plural) pronouns in table 10, where the Mako syllable /k^wi/ corresponds to Piaroa /ku/.

that Morse and Frank (1997:1) explain that one of the main dialectal differences is that the Meta speakers use an alveolar stop in this suffix whereas those from the Casanare region use the alveolar tap.

¹⁵ Although motion toward the speaker (hence the venitive label) is the most common function for this suffix, it can also indicate motion away from the speaker in certain constructions (Rosés Labrada 2015a:353).

Mako

- (16) *ijf-i* *b-ai-kʷi*
 come-IMP PROX-ADV₃-VEN
 ‘Come here!’

(Rosés Labrada 2015a:353)

Piaroa

- (17) *isode-ku* *č-i-sã*
 house-VEN go-NON.FIN-1SG
 ‘I am going toward the house.’

(Krote 1989:72)

In Jodí, there is also a marker that could be termed a venitive. Quatra (2008b:200) mentions an enclitic postposition with the form *-kĩ*, exemplified here in (18).

Jodí

- (18) *jk̄yo=k̄i* *w̄ai* *di!*
 outside=POST.POS₂ go ACT:IMP
 ‘Go outside!’

(Quatra 2008a:172)

Given the sound correspondences between the Piaroa and Mako labialized voiceless velar and the Jodí /k/, and between the high central vowels in all three languages (see table 6), it is possible to posit that this venitive marker is cognate in all three languages.

Another grammatical correspondence among the four languages relates to the proximate deictic roots, which are not only cognate but also behave similarly in terms of function and combinatorial possibilities. In Mako, the proximate deictic root *b-* is used to form both demonstrative pronouns (table 12) and demonstrative adverbs (table 13). With demonstrative pronouns, the proximate deictic root is combined with one of the many classifiers in the language; in demonstrative adverbs, it is combined with one of four possible adverbial suffixes (namely, *-ena*, *-emi*, *-ai*, and *-el̄i*). Both Piaroa and Sáliba share this system with Mako: as I have shown, the *pi-* of proximate demonstrative pronouns in both languages is related to the *p-* in the words for ‘here’ (see Rosés Labrada 2015b).

As shown in table 14 and example (19), Jodí shares the combinatorial possibilities of the Sáliban proximate deictic root.

Jodí

- (19) *b̄öni/b̄öna* ‘here’ vs. *jt̄öni/jt̄öna* ‘there’

(Quatra 2008a:240, 238)

TABLE 12
PROXIMATE DEMONSTRATIVES IN MAKO

CLASSIFIER→	-owi 'CL.TREE'	-po 'CL.ROUND'	-te 'CL.MASC'	-hu/-tsu 'CL.FEM'	-dī 'CL.PL'
ROOT ↓					
<i>b-</i> 'PROX'	<i>b-owi</i>	<i>b-ipo</i>	<i>b-ite</i>	<i>b-ihul/b-itsu</i>	<i>b-idī</i>

TABLE 13
PROXIMATE ADVERBS OF PLACE IN MAKO

ENDING→	-ena 'ADV ₁ '	-emi 'ADV ₂ '	-ai 'ADV ₃ '	-elī 'ADV ₄ '
ROOT ↓				
<i>b-</i> 'PROX'	<i>b-ena</i>	<i>b-emi</i>	<i>b-ai</i>	<i>b-elī</i>

TABLE 14
PROXIMATE DEMONSTRATIVES IN JODĪ (QUATRA 2008A:32–39)

CLASSIFIER→	<i>bu</i> 'CL.FLOWER'	<i>bo</i> 'CL.HOLLOW'	<i>jā</i> 'CL.MASC'	<i>jau</i> 'CL.FEM'	<i>jadī</i> 'CL.PL'
ROOT ↓					
<i>bi-</i> 'PROX'	<i>bi-bu</i>	<i>bi-bo</i>	<i>bi-jkye</i>	<i>bi-yu</i>	<i>bi-dī</i>

Proximate demonstrative pronouns are formed in Jodī by attaching a classifier to the root *bi-*, and the Jodī proximate demonstrative adverb 'here' is formed by adding a suffix (either *-ōnī* or *ōna*) to a *b-* root (cf. with the distal demonstrative also in 19). Notice that the p:p:b:b correspondence in word-initial position is supported by several lexical items (see table 6), making this set of cognates regular in both form and meaning as well as in its combinatorial possibilities. The comparison of the Jodī proximate vs. distal adverbs in (19) also allows us to posit an adverbial suffix *-ōnī/-ōna* that attaches to a deictic root. This suffix is cognate across the four languages, as shown in table 11, with the cognacy between the different segments being supported by correspondences in table 6.

The last two similarities in the nominal domain to be discussed here concern the marking of plural animate nouns. Most animate nouns in all three Sáliban languages form their plural with an animate plural suffix that is also used in forming plural pronouns (e.g., the second-person-plural pronouns in table 10). The form of this cognate suffix is *-dī* in Mako (20), *-tī* in Piaroa (21), and *-tu* in Sáliba (22).

Mako

- (20) *wawari* 'monkey (a type of)' vs. *wāwārī-dī* 'monkeys'
(Rosés Labrada field notes)

Piaroa

(21) *yàho* ‘toucan’ vs. *yàho-tu* ‘toucans’

(Fedemma 1991a:5)

Sáliba

(22) *né* ‘child’ vs. *né-tu* ‘children’

(Morse and Frank 1997:100, 112)

Based on the examples of animate nouns in Quatra (2008a), Jodí has an animate plural suffix *-dĩ*, which is also used to form plural pronouns (see table 10) and exemplified here in (23) for the noun ‘dog’.

Jodí

(23) *yëwi* ‘dog’ vs. *yëwi-dĩ* ‘dogs’

(Quatra 2008a:229)

Given the similarity in functions across the four languages and the fact that the consonant sound correspondence is amply supported by the lexical data (see table 6),¹⁶ it is possible to affirm that this animate plural marker is cognate in all four languages.

Further, a handful of nouns use a different animate plural suffix with the form *-mu* in Sáliba, Piaroa, and Mako and *-mo* in Jodí. One such noun is ‘child’, which, as the examples below show, takes this less-frequent plural marker in all four languages.

Mako

(24) *ĩhĩ* ‘child, son’ vs. *ĩhĩmu* ‘children, sons’

(Rosés Labrada field notes)

Piaroa

(25) *chitti* ‘my son’ vs. *chittimu* ‘my children’

(Overing 1974:361–62)

Sáliba (eighteenth century)¹⁷

(26) *juí* ‘son’ vs. *juimu* ‘sons’

(Anonymous 1790:156)

¹⁶ Note that although Mako, Piaroa, and Jodí /i/ generally corresponds to Sáliba /i/ (see table 6), the pronouns in table 10 show that the correspondence for this suffix is u:i:i.i.

¹⁷ Although in present-day Sáliba the word for ‘child’ does not take this suffix, but rather the more generalized plural animate marker *-tu* as shown above, the suffix is present in the language:

- (i) a: *cĩsamu* ‘my grandsons’
- b: *cĩsomu* ‘my granddaughters’
- c: *ϕĩmu* ‘puppies’ (generic)

(Estrada Ramírez 1996:64)

Jodĭ

(27) *ini* ‘child’ vs. *inimo* ‘children’

(Quatra 2008a:318)

The m:m:m:m correspondence is well-supported by the lexical data (see table 6), and although comparison of the lexical data seems to favor a u:u:u:u correspondence (see table 6), at least two other lexical sets support a correspondence between Piaroa /u/, Mako /u/, and Jodĭ /o/ (namely, 66 ‘hand’ and 106 ‘nose’, both in table 2) and in both these sets, the correspondence u:u:o occurs in word-final position and as part of the corresponding classifier for Piaroa and Mako. Additionally, the combinatorial restrictions on the animate plural marker *-mu* in Sáliba, Piaroa, and Mako and *-mo* in Jodĭ are a strong indicator of a genetic relationship (see Greenberg 2005 [1957]:37 on the value of rules of combinability as evidence of cognacy).

3.2.1. Grammatical correspondences in the verbal domain. There are also several similarities in the verbal domain. The first of these to be discussed here lies in the use of an *-i* suffix for the affirmative imperative. This suffix is present in both Piaroa and Mako, as shown in (28), and although it is not present in today’s Sáliba,¹⁸ it was present in eighteenth-century Sáliba as examples from the 1790 manuscript grammar published in Suárez (1977) indicate.

(28)	Piaroa	GLOSS	Mako
	<i>hárew-i</i>	‘play!’	<i>alew-i</i>
	<i>ijch-i</i>	‘come!’	<i>if-i</i>
	<i>adit-i</i>	‘work!’	<i>otid-i</i>
	<i>em-i</i>	‘take [it]!’	<i>em-i</i>
	<i>iy-i</i>	‘give [it]!’	<i>id̥-i</i>
	<i>aw-i</i>	‘drink!’	<i>ow-i</i>

(Fedemma 1991a:11; Rosés Labrada field notes)

Sáliba (eighteenth century)

	PRESENT		IMPERATIVE
(29)	<i>querecua</i>	‘you do’ (2SG)	vs. <i>querepi</i>
	<i>querecuado</i>	‘you do’ (2PL)	vs. <i>querepido</i>
			‘do!’ (2SG)
			‘do!’ (2PL)

(Suárez 1977:27, 30)

In Jodĭ, a similar suffix seems to be present in imperative forms of both active and non-active verbs. Quatra (2008b) argues that active-aspect verbs form their imperative with *di* (30), whereas non-active aspect verbs form it

¹⁸ Estrada Ramírez (personal communication, 2014)

with *mai* (31). A comparison of these forms with other auxiliaries in Quatra (2008b) allows us to isolate *-i* as the marker for the imperative.

Jodi

- (30) jkë jawa jkwaī dī
 2SG food eat ACT:IMP
 ‘Eat food!’

- (31) jkë abu maī
 2SG sleep NON.ACT:IMP
 ‘Sleep!’

(Quatra 2008b:41, 57)

This analysis is also supported by Vilera Díaz (1985:126–29), who proposes isolating *-i* from *d-* in the form of the imperative.¹⁹ Additionally, note that *i:i:i* is a regular sound correspondence as shown in table 6.

There are also a number of corresponding forms for both past and future tense. The marker *-in* in Mako is used to mark a past (32) (possibly a progressive past). This suffix is cognate with the Piaroa and Sáliba suffixes *-in* shown in (33) and (34), respectively.

Mako

- (32) santaine-t^{hi} i-wawatf-in-a papa-ma
 Santa.Inés-EMPH 3SG.MASC-be.born-PST-TAM₁ dad-TOP
 ‘My dad was born in Santa Inés.’

(Rosés Labrada 2015a:339)

Piaroa

- (33a) iy-à-in-u-tsa
 give-?-COPRET-NON.FIN-1SG
 ‘he used to give’²⁰

- (33b) ijch-in-u-tsa
 come-COPRET-NON.FIN-1SG
 ‘he used to come’

(Fedemma 1991a:4)

¹⁹ Note, however, that she does not provide any examples with the auxiliary *mai* (and, in fact, has an example with *abu* ‘sleep’ with *di*).

²⁰ In this form, Feddema adds an <à> between the root *iy-* and the suffix *-in*; it is unclear what the function of this suffix would be.

Sáliba

- (34) *pókob-e úb-e ik^w-in-ǎ*
 tall-MASC man-MASC eat-PROG-IND
 ‘The tall man is eating.’

(Morse and Frank 1997:31)

The examples in (35) and (36) show that *-in* is also part of the marking of what Quatra (2008b) calls a proximate past on the Jodī verb complex. In (35) is an example with the active verb ‘eat’; in (36) is an example with the non-active verb ‘sleep’.

Jodī

- (35) *jkë jwalulë jkwǎi jkīdīnë*
 2SG plantain eat ACT:2SG:PST
 ‘You ate plantain.’
- (36) *jkë abu jkīminë*
 2SG sleep NON.ACT:2SG:PST
 ‘You slept.’

(Quatra 2008b:29, 48)

Quatra (2008b) also describes two futures for Jodī. According to him, the first one is marked with the suffix *-ke* and the second with the suffix *-oba*. A comparison across the different forms given by Quatra (2008b), both negative and affirmative, for active and non-active verbs suggests that the form of the *-ke* suffix might in fact be *-ëkel-ke*. (37) shows the use of the *-ëke* allomorph with an active-aspect verb.

Jodī

- (37) *jye jwane jkwǎi jtëke*
 1SG yam eat ACT:1SG:FUT
 ‘I will eat yams.’

(Quatra 2008b:33)

This suffix, which according to Quatra (2008b:33) seems to be a non-volitional future, corresponds in both form and function to the Mako future marker *-ak^w* (38), which is cognate with Piaroa’s *-æk^w* (39) and Sáliba’s *-(a)ʔg/-(a)g* (40).²¹

²¹ Although Morse and Frank (1997) give the form of the future suffix as *-ʔg*, a comparison with other forms of the verb ‘buy’ (e.g., *t-emat-ǎ* 1PL-BUY-IND ‘we buy’) suggests that the suffix is *-aʔg*. Estrada Ramírez (1996) alternatively gives *-ga*, which she glosses as ‘virtual’. Her examples also suggest that this suffix is better analyzed as *-ag*.

As shown in table 6, multiple lexical cognate sets support the regularity of correspondence between a:æ:a and between g:k^w:k^w:k.

Mako

- (38) k^wĩ-ʔɕ-**ak**^w-obe ɕ-ai
 2SG-go-FUT-TAM₂ DIST1-ADV₃
 ‘You are going there.’

(Rosés Labrada 2015a:305)

Piaroa

- (39a) ʃ-ãdĩt-**æ**^w-ã-sã
 1SG-work-FUT-CL.MASC-1
 ‘I (male) will work’
- (39b) pæ-d-**æ**^w-ã-sã
 say-1SG-FUT-CL.MASC-1
 ‘I (male) will say’

(Mosonyi 2000:662–63)

Sáliba

- (40) híxuʔu hí-ʔmo-te hǒhĩ-ʔmo h-emata-ʔg-ǎ
 she one:INAN-CL-one:INAN pot-CL 3FEM-buy-FUT-IND
 ‘She will buy a pot.’

(Morse and Frank 1997:42)

The second future, which Quatra (2008b) describes as being more volitional, is marked by *-oba* (41). This morpheme closely resembles the Mako purposive marker *-ob* (42), the correspondences o:o and b:b being amply supported as shown in table 6. Although they do not have the same function in the two languages, purpose markers and futures often share a common source (e.g., see Heine and Kuteva 2002:161–65).

Jodi

- (41) jye jwane jkwai j**toba**
 1SG yam eat ACT:1SG:FUT
 ‘I am going to eat yams.’

(Quatra 2008b:33)

Mako

- (42) ɕ-ena foto Piari-ni em-**ob**-i
 DIST1-ADV₁ picture Piari-NON.SUBJ grab-PURP-NON.FIN
 ʃũ-hũn-ɔʃ-a
 1SG-put-VOL-TAM₁

‘I am going to put [him/it?] over there so he takes a picture of Piari.’

(Rosés Labrada 2015a:405)

Finally, Vilerá Díaz (1985) presents two allomorphs, namely *-'aki* and *-ki*, for the Jodĭ reflexive, exemplified here in (43) and (44), respectively. This suffix may also have a reciprocal meaning, as a comparison of the forms *wēli* ‘look’ and *wējlaḱi* ‘look at each other’ (in Quatra 2008b:226) suggests.

Jodĭ

- (43) wel-'**aki**^h-t-e
 see-REFL-1SG:AFF-PRES
 ‘I am seeing myself.’
- (44) di-**ki**^h-t-e
 touch-REFL-1SG:AFF-PRES
 ‘I am touching myself.’

(Vilerá Díaz 1985:103)

This marker is reminiscent of the Sáliba reflexive/reciprocal *-ag* (45, 46),²² especially if we take into account the correspondence discussed above for the future markers (Jodĭ *-(ē)ke* and Sáliba *-(a)ʔg/-(a)g*, Mako *-ak^w* and Piaroa *-æk^w*).

Sáliba

- (45) híxuʔu si-xa-**g**-á
 she comb-3SG:FEM-REFL-IND
 ‘She combed herself’

(Morse and Frank 1997:48)

- (46) Chĭbai tuxūdu paĭgu oto-da jĭ-j-āg-a
 1SG.POSS two.ANIM acquaintances far-ALL look-3PL-RECIP-REAL
 ‘My two acquaintances look at each other from afar.’

(Estrada Ramírez et al. 2014–2018)

Further, this same marker could be argued to be cognate with one of the two Piaroa reflexives described by Krute (1989) and with the Mako reciprocal *-ak^wa*. Krute (1989:318–19) argues that there are two reflexives in Piaroa, namely *-æk^wa* and *-æu*, but that the second one is more common. The first Piaroa reflexive, and the one that can be argued to be cognate with Jodĭ marker *-'aki* and *-ki*, is exemplified here in (47b) and the second one is exemplified in (48b).²³

²² As with the future marker, Morse and Frank segment the reflexive as only *-g*; however, the fact that the third-person feminine subject marker is *-x* (1997:45) suggests that this suffix could be better analyzed as *-ag*.

²³ Note that the form of this marker is likely *-aw* since there is a regular phonological process in Piaroa whereby */w/ + /i/* results in a */u/*. This is also the case with verb roots such as ‘play’.

Piaroa

- (47a) *wep-i-sã*
 fan-NON.FIN-1
 ‘I am fanning (e.g., a fire)’
- (47b) *wep-æk^wæ-u-sã*
 fan-REFL1-NON.FIN-1
 ‘I am fanning myself.’
- (48a) *kir-i-sã*
 scratch-NON.FIN-1
 ‘I am scratching.’
- (48b) *kir-æu-sã*
 scratch-REFL2:NON.FIN-1
 ‘I am scratching myself.’

(Krute 1989:318, 319)

A cognate of the more common of the two Piaroa reflexives, *-aw*, is used to form reflexive verbs in Mako (49), while a cognate of the less-common Piaroa reflexive, whose form is *-ak^wa* in Mako (50), is used to form reciprocal verb forms.

Mako

- (49) *dif-aw-i*
 wash-MID-IMP
 ‘Wash yourself!’
- (50) *tais tais tais* [?]do~[?]do-t^h-**ak^wa**-obe
 bam bam bam ITER~hit-3PL-RECIP-TAM₂
 ‘They are hitting each other bam bam bam.’

(Rosés Labrada 2015a:318, 319)

Given that reciprocals often come from reflexives (see Heine and Kuteva 2002:254), the use of this set of suffixes (namely, Jodí *-aki/-ki* ‘REFL/RECIP’, Sáliba *-ag* ‘REFL/RECIP’, Piaroa *-æk^wæ* ‘REFL’, and Mako *-ak^wa* ‘RECIP’) with reciprocal and/or reflexive meanings in all four languages is not surprising and their cognacy is reinforced by the fact that in all four languages, their form is almost homophonous with the future marker discussed above.

which end in /w/ (see 28) and which, when occurring with the non-finite suffix /i/, end in a /u/ (see /hãreu/ ‘to play’ in Krute 1989:320).

4. Discussion and conclusions. In previous work, Jodĭ has been grouped together with one or another of four different language families spoken in (relative) close proximity to the present-day location of its speakers: Cariban, Yanomaman, a putative Makú family, and Sáliban. In this article, I have focused on the proposal linking Jodĭ with the Sáliban languages Sáliba, Piaroa, and Mako, a proposal relying primarily on reports with no data and on one comparison that only noted lexical resemblances but did not propose regular sound correspondences (see Jolkesky 2009). This paper has shown that there are numerous cognate lexical items that cannot be said to be the product of onomatopoeia, borrowing, or chance, as well as abundant cognate morphology. Further, I have demonstrated that numerous regular sound correspondences and regular process(es) of sound change exist. This allows us to establish the validity of a grouping that would include these four languages (i.e., Sáliba, Piaroa, Mako, and Jodĭ) in a Jodĭ-Sáliban language family. Nevertheless, additional research remains to be done. The logical next steps would include extending the comparison to lexical items beyond the Swadesh list (especially local flora and fauna terms and kinship terminology) and examining other areas of the grammar (e.g., the classifier systems). Such comparisons are likely to yield additional cognate sets and grammatical similarities, thereby further supporting the relationship established here. Both of these goals would profit from further documentation of—and better description for—Jodĭ as well as Piaroa.

Further documentation and description would also allow us to investigate the internal classification of the Jodĭ-Sáliban language family. If we accept that Jodĭ is related to the Sáliban languages, then the next question to investigate is how it is related to the three Sáliban languages. I hypothesize that Jodĭ must have split from the common ancestor of Jodĭ-Sáliban before the diversification of the Sáliban branch since the verb classes and person subject markers, which are the product of a series of shared innovations in Sáliba, Piaroa, and Mako (see Rosés Labrada 2016), make these three languages a coherent subgroup. As figure 1 shows, this seems to be supported by an analysis of lexical material carried out using the Automated Similarity Judgement Program (ASJP), which calculates distances between pairs of languages based on a 40-item wordlist (see Brown et al. 2008 for a description of ASJP and Wichmann et al. 2010 for a description of how the linguistic distances are calculated). The wordlists used by ASJP for Sáliba, Piaroa, and Jodĭ come from Mosonyi (2000), Huber and Reed (1992), and Rodman and Rodman (2000) for Yuwana and Guarisma Pinto and Coppens (1978) for Yuwana 2; the Mako data was provided by me.²⁴

²⁴ In the ASJP database, Jodĭ appears as *Yuwana*. I thank Søren Wichmann for kindly including Mako in the ASJP database and sending me the updated version of the ASJP tree (February 2016) for South America from which this fragment was taken.

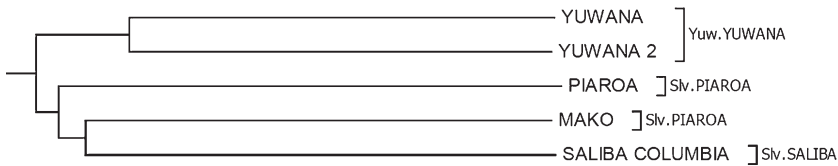


FIG. 1—Fragment of the tree produced by the ASJP program

Summing up, the evidence advanced here supports an affiliation of Jodí with the Sáliban languages, especially if we take into account some of the grammatical similarities, particularly the secondary animate plural marking strategy as well as the combinatorial possibilities of the cognate proximate deictic root described in 3.2.1. These two similarities constitute examples of what has been variably termed “submerged features” (see Sapir 1925) or “shared aberrancies” (see Meillet 1966), defined by Campbell (2008:177) as “idiosyncratic, peculiar, arbitrary morphological correspondences . . . , instances so distinctive that they could not be easily explained by borrowing or accident.” Such correspondences are seen as having the greatest value in the demonstration of genetic relationships (Kaufman 1990; Greenberg 2005 [1957]; Campbell 2008) and, thus, provide the Jodí–Sáliban language family argued for in this paper with strong support.

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Online Supplemental Material for

JODÍ-SÁLIBAN: A LINGUISTIC FAMILY OF THE NORTHWEST AMAZON

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Appendix A: Classification Proposals for Jodí

In this appendix, I discuss the treatment that the Jodí language has received in the language classification literature on South American languages as well as the history of the three different classification proposals that are not the focus of this article (namely, Jodí-Cariban, Jodí-Yanomaman, and Jodí-Makú). My goal in doing this is to offer the reader a complete picture of prior attempts to classify the language.

Even though the Jodí and their language were first mentioned in the ethnographic literature in the early twentieth century (see Koch-Grünberg 1913:468), the early phylogenetic classification literature does not include the language (see, e.g., Swadesh 1959, Loukotka 1935, 1942). As table S1 shows, it is not until the 1980s that the language starts to regularly appear in proposed classifications of South American languages. In this literature, the treatment of the language varies; some authors calling it an isolate while others prefer to leave it unclassified.

As indicated by the asterisks in table S1, a number of classifications mention possible affiliations for Jodí based on other work. These link Jodí variously to the Cariban (more specifically to Yabarana), the Yanomaman (more specifically to Yanomami), and the Sáliban (more specifically to Piaroa and Mako) language families, as well as to the putative Makú languages (the Nadahup languages, Kakua-Nukak, and Puinave). In the sections that follow, I retrace the history of the three proposals that are not the focus of this article (i.e., Jodí-Cariban, Jodí-Yanomaman, and Jodí-Makú).

Jodí-Yabarana (and therefore Cariban)

Wilbert (1963:125–26) postulates a relationship between Jodí (which Wilbert calls Chicano) and Yabarana—a Cariban language, thereby linking Jodí to that family—when he argues that the Jodí are but a subgroup of the Yabarana that went into hiding during the rubber boom between 1880 and 1915 and settled in the mountains. He does so in the absence of any linguistic data, as he had not been in contact with any members of the group himself and had only heard about them through his Panare informants. Instead, his assessment is based on (1) the name of an existing Yabarana subgroup being Orechicano and (2) the fact that the Yabarana, who had settled along the Parucito and Manapiare rivers, had come down from the same area where the Jodí were reported to be.

TABLE S1
 TREATMENT OF JODĪ IN THE LANGUAGE CLASSIFICATION LITERATURE

CLASSIFICATION OF SOUTH AMERICAN LANGUAGES	Jodĭ not mentioned	Listed under	Treats Jodĭ as	
			Isolate	Unclassified
Nimuendajú 1944 [map]		Waruwádu		+
Loukotka 1968 (p. 230)		Waruwádu		+ ¹
Zisa 1970	+			
Suárez 1974	+			
Voegelin and Voegelin 1977	+			
Landar 1977 (p. 520)		Waruwádu		+
Key 1979 (p. 126-127)		Jotí		+
Tovar and Larrucea de Tovar 1984 (p. 161)		Yuhuana? (Carib)		
Kaufman 1986 [ms.] (p. 44)		Xoti		+
Greenberg 1987	+			
Kaufman 1990 (p. 50)		Hotí		+
Kaufman 1994 (pp. 51, 75)		Hotí		+
Kaufman 2007 (p. 77)		Hotí		+
Lizarralde 1988 (p. 49)		Hoti		+*
Migliazza and Campbell 1988 (p. 312)		Hoti		+*
Campbell 1997 (p. 205)		Jotí		+
Fabre 1998 (p. 40)		Hoti	+	
Campbell 2012 (p. 93)		Jotí, Hodĭ	+*	

* The author(s) mention(s) the existence of proposals linking Jodĭ to other languages of the area.

¹ The mention of Jodĭ in the Loukotka (1968) classification went unnoticed by some of the other classifiers that would come after (see Kaufman 1990:50, 1994:51, 75 and Campbell 1997:205 for comments regarding the noninclusion of Jodĭ in pre-1990 major classifications).

Based on data collected in the field during their visits to the Jodī, Coppens and Mitrani (1974:133) argue against a Cariban affiliation for Jodī when they say that the language does not resemble Yabarana, as postulated by Wilbert, but instead resembles Piaroa, which, they state, is considered an independent language. The Cariban affiliation of Jodī is further disputed by Coppens (1983), who argues that the analysis of two vocabularies collected during fieldwork does not support Wilbert's proposal of linking Jodī with Orechicano-Yabarana since the latter is a Cariban language and the former seems to be independent. He further explains that:

a vocabulary of more than 500 words and a short list of phrases (Guarisma and Coppens 1978) suggest now the possibility that Hoti be related with De'áruwa [i.e., Piaroa] and Sáliva (Marshall Durbin, personal communication). The same materials make E. E. Mosonyi (personal communication) suggest that [Jodī] could have some formal similarities with Yanomami taking into account the near identity of the vowel and nasalization systems (Coppens 1983:252–53).²

As this quote suggests, the examination of the data, once it became available, served to not only refute the proposal linking Jodī and Yabarana, a proposal that was primarily based on the similarity between the Jodī exonym *Chicano* and the name of a Yabarana subgroup, namely the Orechicano, but also to posit other possible connections, namely with the Sáliban language family and with Yanomami, a member of the Yanomaman language family.

Jodī-Yanomami (and therefore Yanomaman)

Coppens (1983), reporting on personal communication with Esteban Emilio Mosonyi (see the citation from Coppens above), is the first mention in the published literature of a putative link between Jodī and Yanomami, based on similarities in the vowel system and nasalization. However, as is widely known, resemblances in sound alone without taking into account meaning, are of little consequence in establishing a genetic relationship (e.g., Greenberg 2005 [1963]:65 calls such resemblances “irrelevant”; see also Campbell 2008:205). This is easily illustrated by a phoneme search in the South American Phonological Inventory Database (Michael et al. 2015). A search for the inventory of 7 oral and 7 nasal vowels described for Jodī by Guarisma Pinto (1974) and Guarisma Pinto and Coppens (1978) yields three other languages with the same inventory: the Eastern dialect of Bakairí (Cariban), Emerillon (Tupi-Guarani),³ and Rikbaktsa (Macro-Jê). If we do not take into account the nasal vowels, then the list of languages with the same inventory of 7 oral vowels includes eight languages—five Cariban languages (Carijona, Mapoyo, Panare, Pémono and Yabarana), one Tupian (Tembé) and two Yanomaman (Yanomámi and Yanomamö).

Two years later, Migliazza (1985:47) reports that “Migliazza (1975), in a preliminary comparison of 200 Hoti words collected by Coppens, found about 20% presumed cognates and some regular sound correspondence with Yanomama.” This information is also repeated in Migliazza and Campbell (1988). However, the data are unavailable: Migliazza (1975) is a manuscript that was never published and remains inaccessible to this day (Raoul Zamponi,

² My translation.

³ Françoise Rose (personal communication) points out that the /ə/ does not have a nasal counterpart in Emerillon.

personal communication).⁴

A comparison of the Jodí Swadesh 200-item list gathered for the study presented in this article with the Yanomaman vocabulary provided in Migliazza (1972) shows that the similarities are relatively few and that they are most likely the result of non-genetic factors such as chance and onomatopoeia.⁵ These similarities are only restricted to a few sets of words, all shown in table S2.

The first thing that one notices about all of these correspondences is that only in one instance do they involve more than a CV sequence (i.e., /tɪh/ in ‘good’). In some cases, the sequence that yields the similarity is not even aligned with its “cognate” CV sequence—for example, /tɪh/ in ‘good’ and /ta/ in ‘old₁’ as either word-initial or word-internal sequences. While the other sequences fare better in terms of alignment (i.e., last syllable *ka* in ‘ear’, the first syllable of ‘float’, the second syllable *te* in ‘old₂’, the second syllable *ta* in ‘river’; the first syllable of the second person singular pronoun and in ‘with’), they involve sequences of a frequent consonant (i.e., /k/ and /t/) with a frequent vowel (/a/ in all cases except for ‘old₂’). Finally, the only set in which an etymon coincides fully (i.e., *hu* in ‘hunt’) is for a meaning that has been argued to be onomatopoeic (see Dixon and Aikhenvald 1999:11).⁶ Therefore, the resemblances between Jodí and Yanomaman languages can be said to be the product of chance rather than genetic inheritance.

Jodí-Makú (Nadehup, Kakua-Nukak, and Puinave)

Henley et al. (1994–1996) propose a link between Jodí and a putative Makú language family, which according to these authors consists of the languages now grouped into the Nadehup family (Hup, Yuhup, Dâw, and Nadëb), the Kakua and Nukak languages, and Puinave. Their claims are primarily based on shared sociocultural traits rather than on linguistic evidence,⁷ but the authors also compared a short wordlist of basic vocabulary (Henley et al. 1994–1996). In 2000, they published another article (Mattéi-Müller et al. 2000) elaborating on the comparison of vocabulary for these languages and conclude that:

⁴ The manuscript, titled “Yanomama-Hoti genetic relationship,” is listed by Migliazza (1985) in the reference section.

⁵ Although it is unclear whether Migliazza (1975) was using the 200-item Swadesh list, I think this conclusion still holds: if Migliazza used a list other than Swadesh but that included cultural items and animal and plant names, it is likely that some of the similarities noted were due to contact/borrowing. As Epps (2014) shows, there is a large number of Amazonian Wanderwörter.

⁶ Amazonian hunting was often performed with blowguns, hence the ‘hunt’ here could be in fact ‘blow’.

⁷ As Greenberg (2005 [1963]:65) notes, “only linguistic evidence is relevant in drawing conclusions about classification”. Therefore, I do not discuss the sociocultural similarities observed by Henley et al. (1994–1996) and Mattéi-Müller et al. (2000).

TABLE S2
SIMILARITIES BETWEEN JODĪ AND THE YANOMAMAN LANGUAGES IN THE SWADESH LIST

	Q	R & R	G & C	M-M et al.	Yanam	Yanomam	Yanomami	Sanima
35 ear	<i>oneka</i>	<i>oleka</i>	<i>oleka</i>	<i>oneka</i>	<i>yĩmə</i>	<i>yəməka</i>	<i>yĩməkə</i>	<i>tsĩmika</i>
51 float (v.)	<i>jkajwakə</i>	<i>^hka-wālā</i>			<i>kari</i>	<i>kari</i>		<i>kale</i>
						<i>pokatu*</i>	<i>pokapro</i>	
61 good	<i>jtija</i>				<i>totihi</i>	<i>totihi</i>	<i>totihi</i>	<i>tote</i>
								<i>toita</i>
63 green	<i>nujtibo</i>	<i>lũ^htibo</i>			<i>rĩwə</i>	<i>rua</i>	<i>ruwə</i>	<i>lu</i>
76 hunt (v.)	<i>ju</i>	<i>hu</i>			<i>ram hi</i>	<i>ramə fu</i>	<i>rami hu</i>	<i>nama hu</i>
108 old ₁	<i>jtajwä</i>	<i>^htawo</i>	<i>tawo</i>		<i>pata</i>	<i>pata</i>	<i>pata</i>	<i>pata tə</i>
old ₂	<i>baede</i>				<i>repi</i>	<i>repu</i>	<i>repisi</i>	--
					<i>hote</i>	<i>hote</i>	<i>hote</i>	<i>ole</i>
119 river	<i>jedü</i>			<i>heta</i>	<i>māi</i>	<i>maup</i>	<i>mau</i>	<i>maa tu</i>
					<i>patai</i>	<i>patau</i>	<i>patau</i>	<i>pata tu</i>
168 you (sg.)	<i>jkē</i>	<i>^hke</i>	<i>ka</i>	<i>ke</i>	<i>kaho</i>	<i>kafīwa</i>	<i>kahə</i>	<i>kawa</i>
194 with	<i>ka</i>		<i>kəma</i>		<i>kāi</i>	<i>kāi/kāio</i>	<i>kāi</i>	<i>kāi</i>

Sources: Q = Quatra 2008a, R & R = Rodman and Rodman 2000, GP & C = Guarisma Pinto and Coppens 1978, M-M et al. = Mattéi-Müller et al. 1990

* In instances where Migliazza (1972) provided two distinct sets for a given meaning, both sets were included in the comparison.

in this list [of 60 words with some similarities], there are only 15 words that can be unequivocally considered as full correspondences (phonetic identity and semantic identity). . . . According to the list, the Hodí language seems to be more closely related to the nearest Makú groups (Nukak and Kakua) than to the Hupdë, who were the starting point of the investigation. However, as already pointed out, this material is still too fragmentary and heterogeneous to allow us to place the Hodí language within the Makú language family (Mattéi-Müller et al. 2000:77).⁸

Put simply, the authors identify 15 potential cognates but do not postulate regular sound correspondences. It is important to note that in many cases these presumed cognates were with only one or two of the individual Makú languages.

Martins (2005) studies the internal composition of the Makú language family, which for him also consists of the Nadehup languages plus Kakua, Nukak and Puinave. In relationship to the Jodí-Makú link postulated by Henley et al. (1994–1996), he argues that “even when the data presented are insufficient to establish a genetic relationship, it can be said that there is evidence that these authors were right regarding the link between Hodí and Maku. The data point to similarities between Hodí with Nukak and Kakua” (Martins 2005:341–42).⁹ It is unclear, however, what the nature of these alleged similarities is since Jodí is not included in the comparisons carried out by Martins.

Three years later, Epps claims that

[t]he further addition of the Hodí language of Venezuela to the Nadahup family was proposed by Henley et al. (1994–1996), but primarily on the basis of ethnographic similarities; the linguistic resemblances that are suggested are impressionistic, and examination of additional data (kindly provided by Marie-Claude Mattéi-Müller) has to date yielded no evidence of clear cognates or regular sound correspondences. Moreover, most of the similarities that were identified by Henley et al. are between Hodí and Kakua-Nukak, whose relationship with the other Nadehup languages is itself in question (Epps 2008:5).

That same year, Girón (2008:428) suggests that “[w]ith the Hodí language, the relationship [of Puinave] is minimal, and its relationship with [this language] would be mediated by the relationships with the Nadahup languages with which said language shares some remote similarities in some words”,¹⁰ thus casting further doubt on this proposed affiliation.

Finally, Epps and Bolaños (2017) examine the relationship of the Nadehup languages, Kakua-Nukak and Puinave to each other and conclude that there is no link between these languages. With respect to Jodí, they confirm a “lack of any substantial similarity between Hodí and any of the ‘Makú’ languages” (2017:496).

Thus, the proposals linking Jodí to Cariban, Yanomaman, Nadehup, Kakua-Nukak or Puinave are not supported by an examination of the data. This, in addition to the strong support in favour of a Jodí-Saliban genetic relationship provided in this article, should serve to unequivocally place Jodí in a Jodí-Saliban family.

⁸ My translation.

⁹ My translation.

¹⁰ My translation.

Appendix B: Prior Research on Jodī

This appendix provides an in-depth discussion of extant linguistic research on Jodī, with a special emphasis on the proposed sound inventories for the language, and its main goal is to help the reader better understand the decisions I made with respect to the IPA idealized transcriptions of Jodī data provided in 3.1 and, thus, be in a position to better judge the cognacy of the lexical sets in tables 2, 3, and 4 in the main text.

There has been a substantial amount of ethnographic work, which started shortly after initial sustained contacts were made with the Jodī in the early 1960s and 1970s (see E. Zent 1999:30–35 for an overview), carried out with the Jodī—for example, see the work of Walter Coppens (1983), Frederick Karl Keogh (1995), Stanford Zent and Eglée Mariana Zent (E. Zent 1999; E. Zent and S. Zent 2002; S. Zent and E. Zent 2008), and Robert Storrie (1999), among others. Descriptive linguistic work, however, is to this day very limited. Guarisma Pinto (1974) and Guarisma Pinto and Coppens (1978), Vilera Díaz (1985, 1987), and Quatra (2008a, 2008b) constitute the primary descriptive works available for Jodī; less accessible is the work of the New Tribes (NTM) missionaries and a short manuscript on nominal classifiers and verbal morphology by Robert Storrie.¹¹ In what follows, I discuss the work of Guarisma Pinto and Coppens, Vilera Díaz, and Quatra with special attention to the differing descriptions of the phonology of the language since, as will be shown, there are some discrepancies among the various descriptions. While the work of Rodman and Rodman (2000) is not directly discussed here as it is only a word list with no description of the phonology of the language, a brief comparison of the NTM orthography employed in Rodman and Rodman (2000) with the Quatra (2008a) orthography is offered at the end of this appendix.

The first linguistic work done on Jodī was never published in its totality. It is an undergraduate thesis from the Universidad Central de Venezuela by Virginia Guarisma Pinto (1974) based on fieldwork that the author had carried out with Walter Coppens in the early 1970s. The thesis is divided into two parts: the first is ethnographic and the second includes a brief phonology section (pp. 48–51) and an extensive list of words grouped by semantic fields. In the phonology section, the author provides a consonant chart and a vowel chart, as well as some brief comments on the phonemic/phonetic character of the different sounds.¹² With respect to the consonants (see table S3), Guarisma Pinto mentions that /p/, /t/ and /k/ tend to be pre-aspirated but does not represent it in her inventory because, she argues, pre-aspiration “seems to occur automatically in pre-stressed positions” (1974:49).

¹¹ I would like to thank Marie-Claude Mattéi-Müller for sharing this manuscript with me.

¹² I have converted the symbols used in the original to IPA based on the author’s description of the sounds: kw = k^w; č = tʃ; ŷ = dʒ; hw = h^w; y = j; hy = h^j. It is unclear what an *l* with a caron on top (here rendered by apostrophe) would translate to in the IPA so I have left it as it is. Voiceless sounds appear on the left side of a column while voiced ones are on the right.

TABLE S3
JODĪ CONSONANTS ACCORDING TO GUARISMA PINTO (1974:50)

	Bilabial		Dental		Alveolar	Pre-palatal	Palatal	Velar	Labiovelar	Glottal
Plosives aspirated	p	b	t	d				k g k ^w k ^h 13		ʔ
Affricates						tʃ	ɟʒ			
Fricatives										h
Nasals		m			n		ɲ ¹⁴			
Liquids					l l' [ɾ] ¹⁵					
Semivowels		w					j			
Semi-aspirated		h ^w					h ⁱ			

As for the vowels, Guarisma Pinto (1974:49) postulates the existence of seven oral vowels and seven nasal vowels. The vowels /o/ and /e/ each have a closed and an open allophone: [e] and [ɛ], and [o] and [ɔ] respectively.¹⁶ She adds [æ] and [ɑ] to her vowel chart but makes no specific claim as to their phonemic/allophonic nature. Table S4 details the phonemic vowels included in Guarisma Pinto (1974):¹⁷

TABLE S4
JODĪ VOWELS (GUARISMA PINTO 1974:48–52)

	front	central	back
high	i ĩ	ɨ ĥ	u ũ
mid	e ě [ɛ]	ə ẽ	o õ [ɔ]
low		a ã (æ ɑ)	

In 1978, Guarisma Pinto published her vocabulary in *Antropológica* with Walter Coppens (Guarisma Pinto and Coppens 1978). In the article, they reproduce the data in Guarisma Pinto (1974) but make a few changes to the tables and specify that said tables are based on a *cartilla*

¹³ Although Guarisma Pinto (1974:49) explains that [k^h] is an allophone of /k/ in the context *'k^hia*, the charts in Guarisma Pinto (1974:50) and Guarisma Pinto and Coppens (1978:5) present this segment as a phonemic segment.

¹⁴ Guarisma Pinto (1974:49) clarifies that the palatal nasal “seems to be an allophone of /ɟʒ/ in nasal-vowel environments” [my translation].

¹⁵ Guarisma Pinto (1974:50) gives only an *l* symbol with a caron on top (here rendered by apostrophe) and the [ɾ] allophone (in the chart, transcribed as the IPA tap /ɾ/); however, Guarisma Pinto and Coppens (1978:5) give both an /l/ and an /l'/.

¹⁶ It is unclear from Guarisma Pinto’s description whether the open allophones also have nasal counterparts.

¹⁷ The *æ* and *ɑ* are in parentheses here because it is not entirely clear from the notation in Guarisma Pinto (1974) or Guarisma Pinto and Coppens (1978) that they are allophones of /a/.

(i.e., a reading primer) prepared by New Tribes Mission (1972).¹⁸ They add an /l/ to the consonant chart and remove the [r̄] allophone of Guarisma Pinto (1974:50). The vowel chart remains the same and there is no explanation of the status of [æ] and [ɑ], which are both represented the same as the other phonemic vowels. Vowel length and stress are all marked on the transcriptions in both sources but Guarisma Pinto (1974) says that preliminary analysis suggests that neither of these suprasegmental features is contrastive.

The next available work on Jodí is the undergraduate thesis of Diana Vilera Díaz (1985), a study of Jodí morphology that also includes a (short) section on the phonology of the language; the chapter on nominal morphology was published in the *Boletín de Lingüística* two years later (Vilera Díaz 1987). Vilera Díaz maintains the seven-vowel chart proposed earlier by Guarisma Pinto (1974) and Guarisma Pinto and Coppens (1978). She offers minimal pairs for the following combinations of vocalic sounds: /a/ vs. /e/, /a/ vs. /i/, /a/ vs. /o/, /a/ vs. /ə/, /e/ vs. /i/, /i/ vs. /i/, /o/ vs. /ə/, and /u/ vs. /i/ (pp. 12–13), thus corroborating their phonemic status. There is, however, no minimal pair for /o/ vs. /u/. She argues that the vowel /a/ is realized as [æ], [a] and [ɑ], thus clarifying the status [æ] and [ɑ] as allophones of /a/. The other difference between this analysis of the Jodí vowels and Guarisma Pinto and Coppens's is that Vilera Díaz says that the phoneme /ə/ is realized as both [ə] and [ʌ]. Table S5 presents the Jodí vowel phonemes and their allophones proposed by Vilera Díaz.

TABLE S5
JODÍ VOWELS (VILERA DÍAZ 1985:18)

	front	central	back
high	i	i	u
mid	e [ɛ]	ə [ʌ]	o [ɔ]
low		a [æ ɑ ¹⁹]	

According to Vilera Díaz (1985:14), vowel length seems not to be phonemic but only used for emphasis: a lengthened vowel can mean increased intensity or size. She also mentions the presence of nasal or nasalized vowels but makes no claims as to their phonemic/phonetic nature.

As for the consonants, Vilera Díaz's proposal differs considerably from the consonant inventory posited by Guarisma Pinto (1974) and Guarisma Pinto and Coppens (1978). Table S6 summarizes the Jodí consonants in Vilera Díaz (1985:40).²⁰

¹⁸ It is unclear whether the phonology section of Guarisma Pinto's undergraduate thesis is also based on said *cartilla*.

¹⁹ [ɑ] is not included in the table in Vilera Díaz (1985:18) but she does list it as an allophone of /a/ (see Vilera Díaz 1985:8).

²⁰ As with the inventory in Table S3, I have converted the symbols in Vilera Díaz (1985) to the IPA: c = tʃ; cy = tʃ̃; j = dʒ; ky = kʲ; gy = gʲ; ñ = ɲ; hy = hʲ; q = j.

TABLE S6
 JODI CONSONANTS ACCORDING TO VILERA DÍAZ (1985:40)

	Bilabial	Dental	Alveolar	Alveo- palatal	Palatal	Post- palatal	Velar	Labio- velar	Glottal
Plosives	p	b	t	d			k	[g]	k ^w
Affricates				tʃ	[tʃ]	ɟʒ			
Fricatives		(β)				k ⁱ	[g ⁱ]		h
Labialized fricatives									h ^w
Nasals	m		n		[ɲ]		[ŋ]		
Liquids				l					
Semivowels	w				h ⁱ	j			
Velarized implosive	[b ^w]								

Vilera Díaz (1985:22–30) offers minimal pairs for the following consonantal contrasts: /l/ vs. /d/, /m/ vs. /n/ vs. /t/, /l/ vs. /h/, intervocalic /l/ (i.e. [l]) vs. /d/, /tʃ/ vs. /ɲ/, /k/ vs. /kⁱ/, /t/ vs. /h/, /b/ vs. /k/, /t/ vs. /d/, /k/ vs. /n/ vs. /l/, /ɟʒ/ vs. /hⁱ/, /w/ vs. /h^w/, /k^w/ vs. /h^w/, and /h^w/ vs. /ɟʒ/. There are however no minimal pairs offered for /b/ vs. /β/, which implies that this may be a phonetic distinction rather than a phonemic one, but this is not explicitly stated as it is for [ŋ], [b^w], [g], [gⁱ], [tʃ], and [ɲ], which are all clearly listed as allophones of other consonants.²¹ The table given by Vilera Díaz does not include /h/ but, as discussed above, /h/ is contrastive with two consonants, namely /l/ and /t/. Additionally, in her table, /tʃ/ is listed as a plosive and [tʃ] and /ɟʒ/ as fricatives; however, in her description they are all called affricates (pp. 19–20). The other thing to note is that it is possible that the /b/ and /d/ are implosives: Vilera Díaz (1985:19–20) notes that [b^w] is a “voiced bilabial velarized implosive” and this is an allophone of her /b/; the voiced dental stop is initially represented as [d] (p. 19) and it is later explained that the use of [d] as a symbol instead of [d] is due to the lack of the latter in a typewriter (p. 41); however, both /b/ and /d/ are described as “voiced [bilabial or dental respectively] plosives” (pp. 19–20).

More recently, a Jodi dictionary and a workbook to practice the structure of verbs were published by the *Instituto Venezolano de Investigaciones Científicas* (see Quatra 2008a, 2008b). In the introduction to the dictionary (Quatra 2008a:24–25), the author explains the chosen orthography and the number of vowels and consonants the language has.²² He affirms that there are nine oral vowels: <a>, <ä> (i.e. /a/), <e>, <ë> (i.e. /ɛ/), <i>, <î> (i.e. /i/), <o>, <ö> (i.e. /ɔ/), and <u>. He also affirms that there are seven nasal vowels: the only vowels without nasal

²¹ According to Vilera Díaz (1985), they are allophones of /n/ in front of a velar consonant; /b/ when followed by [e], [i] and [o]; /k/ when preceded by a nasal consonant and occasionally intervocalically; /kⁱ/ when preceded by a nasal consonant; /kⁱ/ in any context; and /ɟʒ/ in any context, respectively.

²² The orthography used by Quatra (2008a, 2008b) is the orthography that has been accepted in San José de Kayamá (see below).

counterparts are <ä> and <ö> but they are nasalized in the environment Č ____.²³ All vowels are presented here in table S7. However, no minimal pairs are provided for these contrasts, which makes it unclear whether the choice to represent /a/ as <ä> and /ε/ as <ë> is a decision that reflects phonetic contrasts rather than phonemic ones (notice that both vowel qualities were considered as allophones of other vowels in previous descriptions of the language; see above).

TABLE S8
JODĪ VOWELS (QUATRA 2008A:22–25)

	front	central	back
high	i ĩ	ɨ ĥ	u ũ
mid	e ě	ə	o õ
	ε ẽ		ɑ
low		a ã	

As for the consonants and semivowels, Quatra (2008a:23) lists: , <d>, <j>, <jk>, <jky>, <jl>, <jn>, <jñ>, <jt>, <k>, <ky>, <l>, <m>, <n>, and <ñ>; and <jw>, <jy>, <w>, and <y>, respectively (see table S9). He divides these sounds into aspirated (<jk>, <jky>, <jl>, <jn>, <jñ>, <jt>, <jw>, <jy>)²⁴ and non-aspirated (the rest). The orthographic choice for these “aspirated” consonants seems to suggest that they are pre-aspirated rather than aspirated. It is unclear whether this aspiration contrast reflects a phonemic distinction between the different pairs, e.g., <jk> vs. <k> or <jl> vs. <l>, or simply a phonetic one; remember that Guarisma Pinto says that pre-aspiration is predictable and Vilera Díaz (1985:33) mentions that aspiration is a phonological process that occurs at boundaries often before voiceless consonants and always before the /l/.

TABLE S9
JODĪ CONSONANTS ACCORDING TO QUATRA (2008A)

		Bilabial	Alveo- dental	Alveo- palatal	Palatal	Velar
Plosives	unaspirated	b	d	k ^j		k
	aspirated		^h t	^h k ^j		^h k
Fricatives						h
Nasals	unaspirated	m	n		ɲ	
	aspirated		^h n		^h ɲ	
Liquids	unaspirated		l			
	aspirated		^h l			
Semivowels	unaspirated	w			j	
	aspirated	^h w			^h j	

²³ Presumably, this means that the vowels have a phonetic nasal counterpart but not a phonemic one. However, note that an earlier version of the orthography included 18 vowels: 9 oral and 9 nasal (see S. Zent and E. Zent 2008:503).

²⁴ The grapheme <j> here represents the aspiration and is based on (Latin American) Spanish spelling conventions where a <j> represents a glottal fricative /h/.

In addition to the aspirated/pre-aspirated contrast discussed above, there are a number of other discrepancies between the system presented by Quatra (2008a) and previous descriptions of the language (Vilera Díaz 1985; Guarisma Pinto 1974; and Guarisma Pinto and Coppens 1978). First of all, in the system adopted by Quatra (2008a, 2008b), there is no <p> or <t>. There is, however, reason to believe that here the orthographic choice made is one of representing only phonemic values: data from Mátti-Müller et al. (1990) suggest that there is variation word-internally between [p] and [b] and [t] and [d].²⁵ This is shown here by the examples in (1):

- | | | | |
|-----|------------------------------|---------------------|--------------------|
| (1) | hobae ~ hopae
didī ~ ditī | ‘(I) die’
‘they’ | p~b.wav
d~t.wav |
|-----|------------------------------|---------------------|--------------------|
- (Mátti-Müller et al. 1990, YAU001R001|001.mp3; start time/end time for p~b fragment is 12:25–12:36 and for t~d fragment, 20:20–20:28)

Another discrepancy involves the labiovelar /k^w/, which is described by Guarisma Pinto (1974), Guarisma Pinto and Coppens (1978), and Vilera Díaz (1985). In this case, it seems like the orthography in Quatra (2008a) has opted to treat this as a sequence of segments <jk> + <w>. And finally, Quatra (2008a, 2008b) seems to consider the palatal nasal (both as unaspirated and pre-aspirated) as phonemic while Guarisma Pinto (1974), Guarisma Pinto and Coppens (1978), and Vilera Díaz (1985) argue that the palatal nasal is an allophone of the affricate /dʒ/.

The orthography used by Quatra (2008a, 2008b) is the orthography that has been accepted in San José de Kayamá and it is the product of several workshops led by Stanford Zent between April 2002 and October 2005 (S. Zent and E. Zent 2008:502; Quatra 2011:142). This orthography differs from the one in use in Caño Iguana, which was devised by the New Tribes missionaries.²⁶ According to S. Zent and E. Zent (2008:503), the NTM orthography includes 16 vowels²⁷—<i>, <ī>, <e>, <ē>, <a>, <ā>, <á>, <ḁ>, <ä>, <Ḃ>, <o>, <ō>, <ö>, <u>, <ṁ>—and 14 consonants—, <j>, <jk>, <jky>, <jl>, <jt>, <jw>, <jy>, <k>, <ky>, <l>, <t>, <w>, <y>. It is unclear what vowels the symbols <á> and <ḁ> represent. <ö> possibly represents a high central vowel /i/. However, the main difference between this inventory and the ones discussed above lies in the consonant inventory: the NTM orthography has no nasals (cf. Kayamá orthography where there is <m>, <n>, <ñ>, <jn>, <jñ>). A smaller difference is that in the NTM orthography the *t*~*d* allophony is represented as a <t>.

Summing up, Jodī is a language for which description is still in its early stages and which could benefit from additional linguistic work. The main discrepancies concern both the number of vowels and the number of consonants. Note, however, that these differences may stem from phonological processes such as nasalization and sandhi-related pre-aspiration that require further research and analysis. These discrepancies between the different phonological inventories in the literature motivated the choice of lexical items from different sources being presented side by

²⁵ This variation is also visible in the different names used for the language in the literature: Jodī, Hoti, Hodī, Jotí, etc.

²⁶ Although there is no available phonological analysis for this orthography, it is important to discuss it here given that it is the basis for the transcription system used by Rodman and Rodman (2000), one of the sources of lexical items for the comparison in 3 of the main text. The lack of nasals in the data in E. Zent (1999) suggests that she might also have used this orthography.

²⁷ Underlined vowels are nasal.

side in **3** of the main text. This appendix can be used for interpreting said data and the idealized IPA transcriptions I offer there.

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