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On O-Constructions in Jarawara

Luke James Adamson & Ruth Kramer*

Abstract. The language Jarawara (Arauan, spoken in Brazil) exhibits a puzzling set of passive-like properties in its “O-Construction” (Dixon 2000, 2004). We argue that O-Constructions have a type of passive voice in some person combinations but not in others, and that they are unified in that they always have topic agreement on C with the internal argument. We relate this approach to recent research on Algonquian inverse systems (especially Oxford 2023a,b, 2024) which have also been argued to involve a passive-like voice-based alternation for specific person combinations. Our analysis captures facts about case, word order, divergences between C and T agreement, and the distribution of the passive-like prefix *hi-* (among other properties). Our findings provide support for the approach to person restrictions embodied in Oxford’s work and also demonstrate how topic agreement and the A system can interact. More generally, this work shows how a nuanced approach to passive constructions, and a willingness to separate agreement from voice, can lead to a cross-linguistically grounded analysis of what seems *prima facie* like an “unusual” construction.

Keywords. agreement; syntax; passive; person; topic; Arauan

1. Introduction. The language Jarawara (Arauan, spoken in Brazil) exhibits an alternation between so-called “A-Constructions” and “O-Constructions” among transitive clauses (Dixon 2000, 2004). Some of the main differences can be seen in (1): notably, the declarative marker in the A-Construction (1a) agrees with the external argument, whereas the same marker in the O-Construction (1b) agrees with the internal argument, and the verbal prefix *hi-* (glossed as “Oc” for O-Construction) is absent in the A-Construction, but present in the O-Construction. (We discuss further differences more comprehensively below.)

- (1) a. (Miotó) Watati awa-ka
name(M) name(F) see-DEC.M
‘Miotó saw Watati.’ A-Construction (Dixon 2004: 418)
- b. (Watati) Miotó hi-wa hi-ke
name(F) name(M) Oc-see Oc-DEC.F
‘Miotó saw Watati.’ O-Construction (Dixon 2004: 419)

While A-Constructions appear to be active transitive clauses, the composition of O-Constructions is puzzling for two reasons. First, examples like (1b) display some but not all properties typically associated with passives: the agreement marking on the verb is controlled by the internal argument rather than the external argument, and the verb displays further verbal morphological marking distinct from the active A-Construction, but at the same time, there is no

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“suppression” of the external argument. Second, some properties of O-Constructions in fact vary depending on the combination of persons of the arguments: whereas the combination of two third-person arguments in (1b) takes *hi-* prefixation, other person combinations do not appear with this marking while nevertheless retaining some properties shared across O-Constructions.

In the present work, in line with Marquardt (2020a,b), we show that O-Constructions in Jarawara are unified in the sense that mood (C) agreement is always with an internal argument topic. However, *pace* Marquardt (2020a) (and Dixon 2004), we argue that some O-Constructions are “passive” (in a way to be defined) and that the choice of active or passive voice is dictated by independent grammatical restrictions on arguments with person and topic features. The analysis captures Jarawara facts about case, divergences between C and T agreement, the distribution of the passive-like prefix *hi-*, and other properties. The findings also support the approach to person restrictions developed in recent research on Algonquian inverse systems (especially Oxford 2023a,b, 2024) and demonstrate how topic agreement and the A-system can interact.

The rest of the article is organized as follows. In section 2, we outline general properties of Jarawara’s agreement system, and introduce the distinction between transitive A-Constructions and passive-like O-Constructions. In section 3, we present a *split* analysis of O-Constructions, in which agreement is always with a topic, but some O-Constructions are active while others are passive-like (in that they promote the internal argument to subject position). This account is inspired by work especially on Algonquian inverse constructions (and to some degree on Austronesian object voice as well). We discuss how the O-Construction pattern fits into the broader discussion of these types of alternations in section 4, where we also briefly compare our approach to previous work on Jarawara and offer some concluding remarks.

2. Background. Jarawara is an Arawá language spoken in Brazil, in the state of Amazonas, near the Purús River (Dixon 2004: 1); WALS places it within what it calls Arauan. It has been described as a dialect of Madi (which also includes dialects Jamamadi and Banawá) and is spoken by approximately 220 speakers who reside in the municipality of Lábrea (Vogel 2022: vii). Jarawara is described by Vogel (2022) as having a neutral SOV word order, although there is some flexibility with the ordering of S and O (Dixon 2004: 86). The language has agglutinative morphology (for the most part) with particularly complex verbal inflection and two grammatical genders (feminine/masculine). The current description is based especially on the grammar Dixon (2004) (henceforth abbreviated D2004), which was composed with the aid of Alan Vogel, as well as on Dixon (2000) and related work by Vogel (e.g., Vogel 2015, 2022).

In this background section, we first give a detailed description of clausal agreement in Jarawara (section 2.1) and proceed to identify the key differences between transitive A-Constructions and passive-like O-Constructions, many of which are related to agreement (section 2.2).

2.1. AGREEMENT IN JARAWARA. Clausal agreement in Jarawara is mainly expressed with two types of markers: (i) gender agreement suffixes, including mood suffixes and tense-modal suffixes, and (ii) person-number agreement markers that prefix or procliticize to verbal “words”. We discuss each type of marker in turn.

Mood suffixes and tense-modal suffixes in Jarawara alternate between what Dixon calls “feminine” and “masculine” forms, so-called because (non-plural-marked) third-person nominals take different marking depending on whether they are grammatically feminine or masculine. This contrast can be seen in (2), where the declarative mood suffix shows gender agreement with

suffixes (see (10) below). The interested reader is directed to Chapters 6 and 7 of D2004 for further information on the distribution of these suffixes in Jarawara.

Turning now to person-number prefixes/proclitics, we have already encountered some overt examples in the intransitive clauses in (3) and (4): the first singular *o-* prefix on ‘eat’ in (3b), the first plural *otaa* proclitic in (3a), and the third plural *mee* proclitic in (3a) and (4). For transitive clauses, two person-number combinations are marked, one indexing the features of the object and the other indexing the features of the subject, in that order (descriptively speaking). For example, in (6), there are two person-number markers: the 1SG object proclitic *o-wa*, marked for ACC case (underlined throughout) with *-wa*, and the 3PL subject proclitic *mee*.³

- (6) *o-wa mee haa.haa ka-na-haro-ke*
 1SG.ACC 3PL laugh APPL-AUX-RPe.F-DEC.F
 ‘They (all) laughed at me.’ (D2004: 90)

The paradigm of person-number markers is summarized in Table 1. The subject markers *o-* and *ti-* are verbal prefixes, whereas the other overt forms are proclitics. The subject and object markers are essentially identical (the contrast in vowel length in the plural forms is phonologically driven; D2004: 34), except for the addition of the accusative suffix *-ra* or *-wa* on all overt object markers. The third-person singular is realized as null for both subjects and objects and lacks overt accusative case marking; the same holds for the third person inanimate, which does not exhibit formal variation for number.⁴ Our examples omit these null arguments.

	Object Marker	Subject Marker
1SG	<i>o-wa</i>	<i>o-</i>
2SG	<i>ti-wa</i>	<i>ti-</i>
3SG animate	∅	∅
/3(SG/PL) inanimate		
1PL.INCL	<i>e-ra</i>	<i>ee</i>
1PL.EXCL	<i>ota-ra</i>	<i>otaa</i>
2PL	<i>te-ra</i>	<i>tee</i>
3PL animate	<i>mee/me-ra</i>	<i>mee</i>

Table 1. Person-number marker paradigm (adapted from D2004: 77)

So far, we have laid out the basic properties of gender agreement (mood and tense-modal suffixes) with intransitives and of the person-number markers that appear both in intransitives and transitives. In the next subsection, we introduce more complex issues that arise in transitive expressions, namely the dichotomy between A-Constructions vs. O-Constructions.

³ The person-number markers likely agree with (and/or clitic-double) full DPs in argument position. The main evidence for this is that the third-person plural proclitic can co-occur with an overt third-person plural DP; see (12). In the trees below, we avoid taking a stance on how this agreement/doubling occurs, though we occasionally put the person-number markers in argument position for clarity.

⁴ We suggest that the case-marking alternation in the third-plural object marker is due to differential object marking. The distribution of accusative case marking in general shows several of the properties of differential object marking including obligatory overt case marking for first and second person and the availability of contexts where either the unmarked form or the case-marked form are acceptable (see, e.g., Fábregas 2013 for examples of these properties in Spanish). Unusually, in Jarawara, the unmarked form of third plural must be used when the subject is first/second person (Dixon 2004: 95), but we suggest that this is because there is less of a need for the object to be distinguished from the subject in this context (see discussion in Aissen 2003), however that is ultimately encoded formally.

2.2. A-CONSTRUCTIONS AND O-CONSTRUCTIONS. In a transitive clause, there are two options for agreement on the mood suffix, which Dixon refers to as the A-Construction and the O-Construction. In the A-Construction, the mood suffix agrees with the external argument (the A argument) and in the O-Construction, it agrees with the internal argument (the O argument).⁵ A few other properties correlate with this change. In the A-Construction, the external argument typically precedes the internal argument, but in the O-Construction, the internal argument typically precedes the external argument (for lexical nominals). Additionally, in the O-Construction, a marker *hi-* appears when the external argument and the internal argument are both third person (henceforth 3>3 environments). The core pattern can be seen in (7)–(8), repeated from (1).

- (7) (Miot_A) Watati_O awa-ka (8) (Watati_O) Miot_A hi-wa hi-ke
 name(M) name(F) see-DEC.M name(F) name(M) Oc-see Oc-DEC.F
 ‘Miot_A saw Watati.’ ‘Miot_A saw Watati.’

In the A-Construction in (7), the declarative marker agrees with the masculine external argument, and the external argument precedes the internal; in the O-Construction in (8), the declarative marker agrees with the feminine internal argument, the internal argument precedes the external, and *hi-* marking appears because both arguments are third-person. (In fact, two instances of *hi-* appear in (8); we focus mostly on the first instance immediately preceding the verb, but discuss the second instance briefly below.) (7)–(8) also show that a full nominal can be omitted if it is the external argument of an A-Construction or the internal argument of an O-Construction. (For brevity, we refer to external arguments as EAs and internal arguments as IAs.)

According to Dixon, the choice between the A-Construction and the O-Construction is dictated by discourse factors: for the A-Construction, the EA is the “pivot” (a grammaticalized topic; see Dixon 2000), while in the O-Construction, the IA is the pivot. The difference in discourse function is illustrated in (9).

- (9) a. Miot_S ki-joma-ke-ka, Watati_O awa-ka
 name(M) in.motion-THROUGH.GAP-COMING-DEC.M name(F) see-DEC.M
 ‘Miot_S came in and saw Watati.’ (D2004: 419)
 b. Miot_S ki-joma-ke-ka, Watati_A hi-wa hi-ke
 name(M) in.motion-THROUGH.GAP-COMING-DEC.M name(F) Oc-see Oc-DEC.F
 ‘Miot_S came in and saw Watati.’ (D2004: 419)

In (9a), an intransitive clause has an argument that is linked to the EA of the following transitive clause, so an A-Construction is employed; thus the agreement on the declarative suffix is with the EA and the EA is omitted. In (9b), the intransitive’s argument is linked to the IA of the following transitive clause, so an O-Construction is employed; thus mood agreement is with the IA, the IA is omitted, and *hi-* marking appears because both arguments are third person. In short, when an EA is the discourse pivot, an A-Construction is used, but when an IA is the discourse pivot, an O-Construction is used. Henceforth, we use the term “topic” instead of “discourse pivot” for simplicity, leaving for future work the important task of differentiating between the typical linguistic sense of “topic” (e.g., being discourse-old) and the concept of “discourse pivot” (see Dixon 2000; Falk 2000 for discussion).

⁵ We employ the familiar labels S, A, and O for an intransitive thematic subject, a transitive thematic subject, and a transitive thematic object, respectively.

Recall that O-Constructions also differ from A-Constructions in that the former can include the marker *hi-*, as in (9b). All of the examples containing the 3>3 marker *hi-* so far have featured third person singular arguments whose person-number markers are null. However, it is worth noting that *hi-* surfaces in 3>3 configurations regardless of whether the arguments are singular or plural. In (10), both arguments are 3PL, as indexed by the person-number proclitics on the verb, with their third-person values being further reflected in the inclusion of *hi-* marking.

- (10) mee mee hi-wa-wite
 3PL 3PL Oc-see-FROM.PLACE
 ‘They see them from a distance.’ (D2004: 104)

As the restriction of *hi-* marking to 3>3 environments might suggest, O-Constructions are subject to person restrictions. Specifically, it is altogether impossible to form an O-Construction if both arguments are either first or second person (D2004: 436) – thus there is a restriction on Speech Act Participants (henceforth SAPs). A-Constructions are not limited in this way and can feature any combination of persons as arguments (see D2004: 435–437).

However, SAPs are not ruled out completely from the O-Construction: both SAP>3 (where the EA is first or second person and the IA is third person) and 3>SAP environments are licit. For example, (11) shows two versions of a 1>3 clause.

- (11) a. kanero_O otaa_A kaba-haro otaa-ke
 mutton(M) 1PL.EXCL eat-RPe.F 1PL.EXCL-DEC.F
 ‘We ate some mutton, a fair time ago.’ A-Construction (D2004: 439)
 b. (kanero_O) otaa_A kabe-hiri-ka
 mutton(M) 1PL.EXCL eat-RPe.M-DEC.M
 ‘We ate some mutton, a fair time ago.’ O-Construction (D2004: 439)

In the A-Construction in (11a), agreement on the mood suffix is with the EA; since it is a participant pronoun, the agreement is “feminine”. In the O-Construction in (11b), agreement is instead with the IA, hence “masculine” in agreement with the masculine noun ‘mutton’. (‘Mutton’ is because it was stated in a preceding clause in the text that this example is taken from.) Because the O-Construction is not 3>3, no *hi-* marking surfaces in (11b).

Additional differences between A-Constructions and O-Constructions emerge in terms of case-marking and tense-modal agreement. In A-Constructions, the EA has nominative case, the IA is marked for accusative case (modulo footnote 4), and tense-modal agreement is with the EA. For example, in the A-Construction in (12), the third plural proclitic corresponding to the EA *Sorowaha* has (null) nominative case, whereas the first plural clitic corresponding to the IA ‘us’ has the accusative suffix *-ra*. (The third pronominal position, to be discussed below, is filled in (12) by repeating the third-plural person-number marker.)

- (12) Sorowaha_A ota-ra_O mee haa to-na-ma-iti-haro mee
 tribe 1EXC-ACC 3PL call.to AWAY-AUX-BACK-ALONG.WAY-RPe.F 3PL
 ama-ke
 EXTENT-DEC.F
 ‘They Sorowahá people called out to us all along the path back.’ (D2004: 109)

Recall that both third plural and first plural pronominals give rise to feminine agreement in Jara-wara (see section 2.1), so it is not clear in (12) whether the feminine agreement on the recent-past marker *-haro* tracks the EA or IA. However, in (13), the EA is masculine (‘he’) and the IA

is feminine ('the hat'). The agreement on the immediate-past marker in (13) is masculine, demonstrating agreement with the EA on tense-modal suffixes in A-constructions.

- (13) *sabeo_O kote* *n-isa-hare-ka*
 hat(F) throw.forcibly AUX-DOWN-**IPe.M**-DEC.M
 'He threw the hat forcibly down.' A-Construction (D2004: 428)

The O-Construction largely resembles the A-Construction in terms of case-marking, with nominative case on the EA and accusative on the IA. However, there is one crucial exception. In the A-Construction, a third-person IA can either have overt accusative marking or be unmarked; in footnote 4, we suggested that this is due to differential object marking. However, a third-person IA in an O-Construction **must** be unmarked for case, i.e., nominative (D2004: 420). For example, the initial third-plural clitic in (10) is *mee*, and not *me-ra*. Our analysis below capitalizes on this distinction.

The O-Construction does **not** resemble the A-Construction in terms of tense-modal agreement. In the A-Construction, tense-modal agreement is with the EA. For example, in (13), the immediate-past marker is masculine agreeing with the masculine EA 'he'. However, in the O-Construction, tense-modal agreement is almost always with the IA. For example, in (11b), the remote past marker is masculine agreeing with the masculine IA 'mutton'. The O-Construction displays tense-modal agreement with the EA only in 3>SAP environments, as in (14).

- (14) *inohowe_A o-wa fito ka-ne-hina ama o-ke*
 alligator(M) 1SG-ACC grab APPL-AUX-IRR.M EXTENT 1SG-DEC.F
 'The alligator might have grabbed me (if it had been alive).'
- O-Construction (D2004: 441)

In (14), the irrealis marker is masculine agreeing with the EA 'alligator'. Note that it is clear that (14) is an O-Construction because the declarative marker is feminine, agreeing with the IA.

Lastly, we observe that the A-Construction and O-Construction differ in which argument is indexed by the so-called third pronominal position (see especially D2004: 105–114). This position is filled by a person-number prefix/proclitic in the unmarked case form or by the O-Construction marker *hi-*; it is fairly high in the clause, directly preceding the mood suffix. It can be seen in some of the earlier examples, including (3b), (11a), (12) and (14). Restricting our attention to environments in which tense-modal suffixes are overt, the marker in the third-pronominal position indexes (i) the only argument of an intransitive, (ii) the external argument of an A-Construction, or (iii) the internal argument of an O-Construction (or the marker *hi-*; see, e.g., (8) and (9b)). (15) shows a 3>SAP O-Construction with the third pronominal position filled: its O-Construction status can be diagnosed by the fact that the declarative marker *-ke* has feminine agreement with the IA (despite the masculine tense-modal suffix *-re* agreeing with the EA).

- (15) *owa iti-ma-re o-ke*
 1SG-ACC take-BACK-IPe.M 1SG-DEC.F
 'He took me back.' (D2004: 108)

(15) contains a first person singular accusative-marked person-number proclitic *owa*, indexing the internal argument. However, the internal argument is also indexed by *o-*, a person-number prefix with unmarked case in the third pronominal position, preceding the mood suffix.

To summarize so far, there are differences between A-Constructions and O-Constructions in terms of word order, topicality, agreement, case marking, person restrictions, *hi-* marking, and the third pronominal position. These properties are summarized in Table 2.

A-Constructions	O-Constructions
EA typically precedes IA when both overt	IA typically precedes EA when both overt
EA is a topic	IA is a topic
Mood suffix agrees with EA	Mood suffix agrees with IA
Tense-modal suffix agrees with EA	Tense-modal suffix agrees with IA except in 3>SAP, where it agrees with the EA
EA is unmarked/NOM and IA is ACC (unmarked/ACC if 3rd)	EA is unmarked/NOM and IA is unmarked/NOM if 3rd (ACC otherwise)
No restrictions on person combinations	SAP>SAP unattested
No <i>hi-</i> in 3>3 environments	<i>hi-</i> in 3>3 contexts
Third pronominal position indexes EA when filled and when tense-modal overt	Third pronominal position indexes IA when filled and when tense-modal overt

Table 2. Core properties distinguishing A- from O-Constructions (cf. D2004: 420)

In the next section, we develop an analysis of O-Constructions that captures their complex constellation of properties and their fundamental differences from A-Constructions.

3. A split analysis. At first glance, the contrast between A-Constructions and O-Constructions in Jarawara resembles the contrast between active voice and passive voice in other languages. In an O-Construction, like in a passive clause, the internal argument tends to precede the external argument, it controls agreement on tense-modal suffixes (in most contexts) and on mood suffixes, and it is the topic. Granted, the external argument in an O-Construction does not seem to have been demoted: it does not occur in a PP and it does not seem to be an adjunct or have oblique case.⁶ However, much recent work has developed specific syntactic proposals for so-called non-canonical passive constructions that lack agent demotion (see, e.g., Legate 2014, 2021; Oxford 2023a) and the Jarawara O-Construction resembles this kind of Voice construction in a way that we will make more precise shortly.

However, there are some complications for an approach that treats all O-Constructions as noncanonical passives. First, this approach leaves the person restrictions on O-Constructions unexplained without further assumptions. Second, O-Constructions have the case and agreement patterns of active clauses in certain contexts: tense-modal agreement is with the EA (not the IA) in 3>SAP contexts; and the IA has accusative case if it is first/second person, which seems at best highly unusual for a passive-voice construction.

In this section, we develop an analysis of the O-Construction that reconciles its conflicting properties. Specifically, we claim the O-Construction as described in Dixon is a conflation of two phenomena: (i) noncanonical passive Voice and (ii) topic agreement with the internal argument. All O-Constructions involve topic agreement with the internal argument, but noncanonical passive Voice is only present in O-Constructions that have 3>3 or SAP>3 configurations due to strict licensing conditions on SAPs. This split approach to the O-Construction is able to capture all of the properties described above and differentiate the O-Construction from the A-Construction (which has active Voice and topic agreement with the external argument).

⁶ Dixon (2004) argues that O-Constructions are not passives for this reason.

In the remainder of this section, we disentangle topic agreement (section 3.1) and voice (section 3.2) and then show how they work together to generate the complex O-Construction (section 3.3). We discuss how our analysis compares to related previous research in section 4.

3.1. TOPIC AGREEMENT. We propose that ϕ -agreement on the mood suffix is the result of a C probe searching for a goal bearing [TOPIC] (cf. Marquardt 2020a,b, discussed in section 4). This probe is merged into the structure irrespective of argument structure; the same probe is found in intransitives, A-Constructions, and O-Constructions. By hypothesis, only one argument per domain bears the feature [TOPIC]. (See section 2.2 for discussion of the use of the term “topic”.) We follow Ostrove’s (2018) specific formalization of topic agreement, which is built on the classic Agree relation from Chomsky (2000, 2001). The C probe bears unvalued ϕ -features as well as a valued topic feature. The nominal goal bears valued ϕ -features and an unvalued topic feature. C probes downwards and enters into an Agree relation with the nominal that bears [TOPIC], valuing C’s ϕ -features with the ϕ -features of the nominal and valuing the nominal’s topic feature using the value from C.⁷ We also assume that goal selection is determined in part by which goal most closely matches the features of the probe (“maximize matching”; Chomsky 2001: 15), as formulated by Ostrove (2018: 267) in (16):

- (16) A probe P shares feature-values with the most prominent syntactic object whose label maximally matches the features of P.

Under this view, which argument the mood marker agrees with is determined by the placement of the feature [TOPIC] (which has discourse-related consequences, as described in section 2). For intransitives, only one argument is present (which bears [TOPIC]), and therefore C agreement is with this argument. C values its ϕ -features from this argument, and they are realized with either “feminine” or “masculine” forms depending on the content of the ϕ -features on the goal.

For transitive A-Constructions, the [TOPIC] feature is borne by the external argument, as schematized in (17). C probes and has its ϕ -features valued by this argument. Consequently, there is no interaction with the object in an A-Construction.

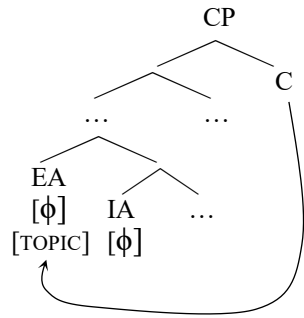
As we detail below, O-Constructions vary in their argument structure; presently we address *active* O-constructions. For this configuration, the object bears the [TOPIC] feature, as schematized in (18). The probe searches its c-command domain, but does not identify the EA as a potential goal because it lacks [TOPIC] and thus matching is not maximized. The search thus continues and identifies [ϕ ,TOPIC] on the internal argument and values the ϕ -features on the probe.⁸

The C[TOPIC] probe analysis can capture two key generalizations, and also makes an interesting prediction. First, the realization of the mood suffix reflects the ϕ -features of the topic. Second, the analysis can capture which argument is indexed in the third pronominal position, with the assumption that the Agree relation can trigger pronominal cliticization (see Béjar & Rezac 2003; Rezac 2008; Kramer 2014; Preminger 2014; among others).

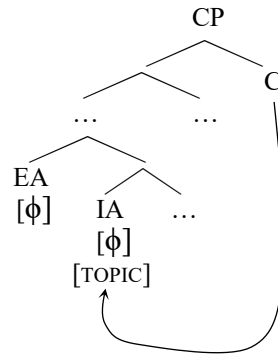
⁷ This renders topic features analogous to Case features in Chomsky (2000, 2001). For detailed discussion of the possible distribution of ϕ and discourse features on C and T, see Miyagawa (2009, 2017).

⁸ In Marquardt (2020a), the IA and EA match the C probe equally because the SAP IA lacks gender, by assumption: the EA has person, number, and gender and the IA has topic, person, and number. However, the IA has moved above the EA, so C agrees with the IA (see section 4). We maintain that “maximize matching” is simpler and more direct (it is the topic feature that makes the difference) and does not require extra assumptions about ϕ -features.

(17) A-Construction



(18) Active O-Construction



The third pronominal position is filled by the EA of an A-Construction and the IA of an O-Construction (when the tense-modal element is overt); this falls out from our analysis if C probes for [TOPIC], and “doubles” whichever argument it identifies in its search via pronominal cliticization.⁹

In order to identify the interesting prediction, it is necessary to return to tense-modal suffixes, which exhibit a F/M alternation like the mood suffixes. The tense-modal markers reflect more than what would conventionally be called “tense” information, including aspect and evidentiality; for simplicity we identify these markers as realizations of T. Following Marquardt (2020a), we assume T bears a ϕ -probe, thereby inducing the F/M alternation, and an EPP feature. However, whereas the C probe has both a topic feature and ϕ -features, the T probe lacks any \bar{A} -features and is searching primarily for ϕ -bearing nominals. The DP that T agrees with moves to SpecTP and becomes the grammatical subject (McCloskey 1997).¹⁰ We assume that finite T always probes, even when tense-modal markers are not overt (see Vogel 2009).

The analysis thus has the unexceptional properties (i) that T agrees and “promotes” a nominal to subject position and (ii) that C is associated with \bar{A} -properties such as a [TOPIC] probe. That being said, because C also agrees for ϕ and ignores nominals that lack [TOPIC] if at all possible, the interesting prediction is generated: when the IA bears [TOPIC], T will agree with the EA, while C will agree with the IA. This prediction is borne out for O-Constructions with SAP>3, as in (14). In (14), the tense-modal irrealis suffix is masculine, agreeing with the EA ‘alligator’, but the declarative mood suffix is feminine, agreeing with the IA ‘me’.

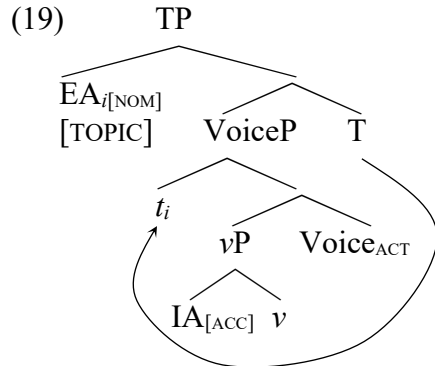
However, this prediction is not borne out in other configurations, like SAP>3, an example of which was shown above in (11b). In (11b), both the tense-modal suffix and the declarative marker are masculine, agreeing with the IA ‘mutton’. In order to see why the prediction is only partially borne out, it is necessary to have a better understanding of the syntax of voice in Jara-wara, an issue to which we now turn.

3.2. VOICE ALTERNATIONS. In this section, we propose that alternations in Voice explain some of the key differences between A-Constructions and O-Constructions.

⁹ This analysis is tentative since there are two important exceptions: the first is when *hi-* is in the third pronominal position and the second comes from looking outside of contexts where the tense-modal marker is overt. In particular, for an O-Construction in which the external argument is an SAP but the topic internal argument is third person, and there is no tense-modal marker, the external argument is referenced in third pronominal position (D2004: 437).

¹⁰ This violates the Activity Condition in that both T and C agree with the EA in ϕ -features when the EA is a topic. See Deal (to appear) on why the Activity Condition is worth overhauling/eliminating in general.

3.2.1. ACTIVE CONSTRUCTIONS. We propose that A-Constructions are canonical active structures where the external argument undergoes A-movement to SpecTP and becomes the grammatical subject. The external argument and T agree in ϕ and correspondingly the external argument is assigned nominative case by T, as per standard assumptions about the Agree relation (cf. Chomsky 2000, 2001). In contrast, the internal argument in an A-construction does not undergo A-movement to a subject position and it is assigned accusative case, likely from active Voice. This is schematized in (19).¹¹ We assume the EA bears the [TOPIC] feature in an A-Construction.



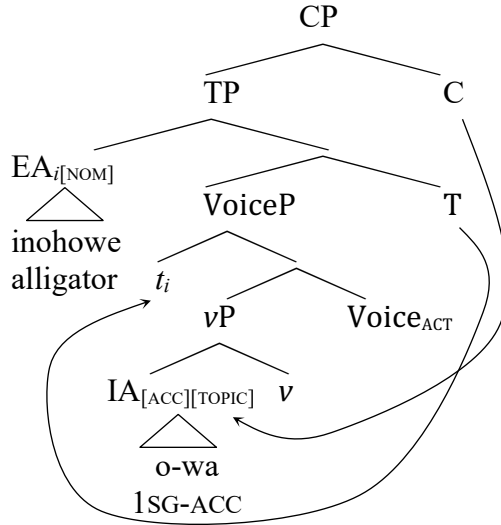
This explains many properties of the A-Construction observed in section 2.1, including word order (subjects precede objects for lexical nominals), subject agreement with T, and case-marking.

Recall from section 3.1 that some O-Constructions display similar properties to A-Constructions. Specifically, in O-Constructions with a 3>SAP configuration, the third person external argument agrees with T and the SAP internal argument is marked for accusative case. This was seen in (14), where the third person external argument ‘alligator’ triggers masculine agreement on the irrealis tense-modal suffix and the person-number clitic referencing the first-person internal argument has accusative case. However, it is clear that (14) is an O-Construction because the declarative marker agrees with the IA topic, and the third pronominal position indexes the IA topic, as well.

We propose that O-Constructions like (14) include an active Voice projection and thus operate in terms of case and T agreement the same way as an A-Construction. A simplified tree drawing attention to the argument structure and agreement of (14) is shown in (20).

¹¹ We assume Voice and *v* are distinct; see Alexiadou et al. (2015) and references therein. Also, the distinction between *v* and *V* is immaterial for our present purposes, and the two are therefore conflated in our trees.

(20)



Thus, this data shows that the O-Construction and nonactive Voice are separable: (14) has active voice, but there is topic agreement with the IA and hence it is an O-Construction.¹²

This kind of structure raises two important questions. First, why are active voice O-Constructions limited to 3>SAP contexts? Second, what happens in other configurations? We answer the second question immediately below, and table the first until section 3.3.

3.2.2. NONCANONICAL PASSIVE CONSTRUCTIONS. O-Constructions that are not 3>SAP have markedly different properties from A-Constructions: T agreement is with the IA; the IA is nominative; and *hi-* appears in 3>3 environments. For example, in (21), the far-past T agrees with ‘many fish’, the person-number clitic *mee* that indexes ‘many fish’ is nominative, and *hi-* is prefixed to the verb.

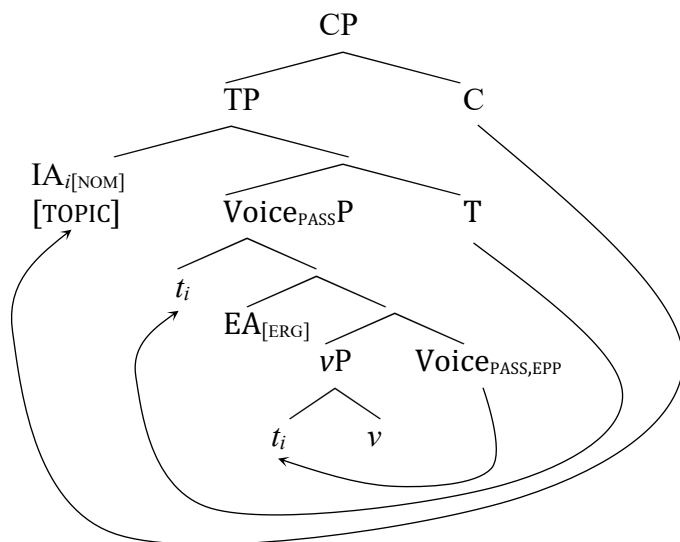
- (21) okiti_A mee hi-kahati-hemete-mone mee ama-ke
 my.grandfather(M) 3PL Oc-kill.fish-FP.n.F-REP.F 3PL EXTENT-DEC.F
 ‘My grandfather was killing many fish.’ O-Construction (D2004: 109)

We argue that this kind of O-Construction has a non-canonical kind of passive Voice, and lay out the mechanics of the analysis in this section.

Specifically, following a suggestion in Farrell (2005) (see section 4), we propose that Jarawara has, in addition to Voice_{ACT}, an additional head Voice_{PASS}. Following Oxford’s (2023a,b, 2024) account of (a subset of) Algonquian inverse expressions, we propose that this Voice_{PASS} head syntactically differs from Voice_{ACT} in Jarawara in that (i) it assigns inherent ergative case to the external argument in its specifier, (ii) it does not assign the IA accusative case (like passive voice heads generally); and (iii) it has an EPP feature that triggers raising of the internal argument (see relatedly Aldridge 2012; Legate 2014, among others, on Austronesian object voice). As a consequence of (i)–(iii), T assigns nominative case to and agrees with the raised internal argument. The syntactic mechanics of this proposal are schematized in (22).

¹² We assume for (20) that the internal argument is assigned accusative case from Voice but has an unvalued topic feature until it agrees with C; see section 3.1 and footnote 10.

(22) Passive O-Constructions



We take the presence of $\text{Voice}_{\text{PASS}}$ to imply the presence of [TOPIC] on the IA, for reasons explicated in section 3.3.

This analysis captures several syntactic and morphological properties of non-3>SAP O-Constructions. First, the account captures that both EA and IA are still projected as arguments, with the topic IA appearing before the EA in an O-Construction where the IA is a lexical DP. This is because $\text{Voice}_{\text{PASS}}$ triggers movement of the IA to the specifier of VoiceP ; since the IA has not yet been assigned case and is local to T, the IA will agree with T and move to the specifier of TP to become the subject.¹³

Second, both tense-modal (T) and mood (C) agreement are with the IA in the passive O-Construction. Following the internal argument’s movement to SpecVoiceP , the T probe will identify the IA as the closest accessible goal bearing ϕ -features, and will therefore agree with the IA rather than the EA. If the EA and IA specifiers of VoiceP are treated as being equidistant to T, we may assume that the probe is case-discriminating in the sense of Preminger (2014), such that ergative nominals are not eligible for agreement with T. Recall that C has a [TOPIC] feature, which in O-Constructions is matched by the IA; mood marking will therefore reflect ϕ -features of the IA.

Third, the case marking for third-person plural IAs is obligatorily nominative rather than accusative, unlike in A-Constructions (see (10)). This follows from how case assignment proceeds in the context of $\text{Voice}_{\text{PASS}}$. The passive Voice head does not assign accusative case to the IA, which raises to SpecVoiceP ; T then agrees with the IA and assigns it nominative case. (Note under this analysis that ergative case is fully syncretic in the language with nominative case; see Legate 2008 on ergative/nominative syncretism.)

Fourth, the marker *hi-* appears in all O-Constructions that are 3>3, and we analyze it as a realization of $\text{Voice}_{\text{PASS}}$ (cf. Farrell 2005 on Jarawara, Oxford (2023a,b, 2024) on the inverse marker in Algonquian). Our tentative proposal is that *hi-* restricts the specifier position of VoiceP such that it must have third person features. This is inspired by Legate’s (2014: Ch. 2) analysis of voice heads in Acehnese, Chamorro and Balinese, which, according to Legate, introduce the initiator theta role and restrict the ϕ -features of the individual(s) associated with this role (the

¹³ This is what Legate (2014: 55) refers to as a “leapfrogging” derivation (following Bobaljik’s 1995 terminology).

restriction is accomplished semantically as in Chung & Ladusaw 2003). In Chamorro, the restriction is specifically to third person DPs, just like in Jarawara. While we do not have space to discuss this aspect of our proposal in more detail, it makes the right cut empirically: *hi-* is absent from O-Constructions with SAP subjects (which are passive in our analysis), and 3>SAP O-Constructions lack Voice_{PASS} (see section 3.3), so they are correctly predicted to lack *hi-*.

Before proceeding, we would like to suggest that there is independent evidence in the language that *hi-* does indeed reflect a type of third person morphology, in line with our proposal. Specifically, we suggest that the same exponent *hi-* appears in other third-person environments; it is employed for third-person reflexives and alienable possessors, as well as with *wh*-elements. We address each briefly in turn. First, reflexive meanings are often conveyed in Jarawara through the use of inalienably possessed body parts in object position (see D2004: 328–330 for discussion and examples). However, another strategy used with third-person arguments expresses reflexivity with the forms *hiwa* (M) or *hine* (F), as in (23), which share a common base *hi-*.¹⁴

- (23) Kamo_A hiwa_O ka.katoma-ka
 name(M) 3SG.M.REFL stare.at-DEC.M
 ‘Kamo is staring at himself.’ (in a mirror) (D2004: 331)

Second, consider alienable possession in the language, which is expressed using *kaa* between the possessor and the possessum (D2004: 90). This form combines with first and second person to become *o-ko* and *ti-ka*, respectively (D2004: 296). While third-person singular pronouns are generally null in the language, 3SG alienable possession is expressed with *hina-ka* (D2004: 296–297), which may be further segmented with *hi-* and the possessive form *ka*. Dixon does not decompose *hina* further; we would suggest that it is not a coincidence that it starts with *hi-*.¹⁵ Lastly, many (third-person) *wh*-elements in Jarawara begin the same way, including *himata* ‘what’, *hibaka* ‘who.M’, *hibaka/hibake/hike* ‘what.F’, and *hibaka/hika* ‘where’ (see D2004: 403–406).

We view the preceding evidence as supportive of the conclusion that *hi-* reflects a type of third-person morphology; under our analysis, it realizes (among other things) the passive voice head that restricts the external argument to the third person.

While the Voice_{PASS} analysis captures various properties of O-Constructions, it raises the question of what governs the use of active vs. passive voice. We argue that independent constraints on the distribution of the [TOPIC] feature and on SAPs determine when each voice head is licit, and elucidate this view in the following subsection.

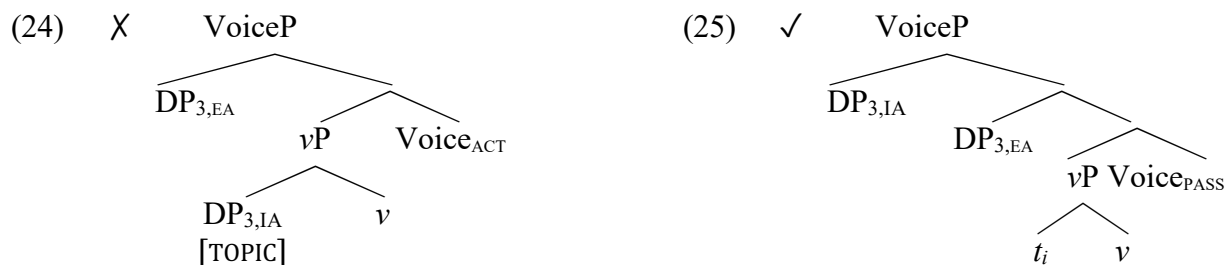
3.3. SYNTHESIZING TOPIC AGREEMENT AND VOICE ALTERNATIONS. According to the present proposal, O-Constructions that occur with particular combinations of arguments take Voice_{PASS}. A key question that arises is thus why Voice_{PASS} is not available for all combinations. Moreover, recall from section 2.2 that O-Constructions are entirely ruled out in SAP>SAP configurations, a fact that the analysis so far does not address. To answer these questions, we draw on insights from the Algonquian literature, especially from Oxford (2023a,b, 2024). In essence, we suggest

¹⁴ We follow Vogel’s (2022) usual practice of glossing *hiwa* as a reflexive form rather than Dixon’s choice of JUST; see, e.g., Vogel (2022: 48). We are not sure about the identity of the suffixes, though we note that the alternation for the verb *awa* (M) ~ *awine* (F) ‘seem’ is parallel (see D2004: 232–233). One further possibility is that *hiwa* bears the accusative suffix *-wa*, though that would still leave the feminine counterpart *hine* unexplained.

¹⁵ The affix *-na-* may either be related to the auxiliary *na* (D2004: 114–118) or to the verb *na* ‘exist’ (D2004: 387–388); we do not take a position on this.

that the choice between active and passive Voice in the O-Construction is reducible to constraints on the distribution of the [TOPIC] feature and a restriction on SAP licensing.

3.3.1. THE C-COMMAND CONDITIONS FOR [TOPIC]. We propose that there are two constraints on the distribution of [TOPIC] in Jarawara. First, a third person [TOPIC] cannot be c-commanded by another (non-topic) nominal. This is highly reminiscent of the requirement in Algonquian that proximates cannot be c-commanded by obviates (Bruening 2005: 21; Oxford 2024: 11). To illustrate how this constraint plays out in Jarawara, first consider a 3>3[TOPIC] clause where Voice_{ACT} is employed, as in (24). This would violate our constraint, as it would leave the internal argument DP bearing [TOPIC] in its low first-merged position, where it would be c-commanded by the non-topic EA. In contrast, the use of Voice_{PASS} with 3>3[TOPIC] remedies the issue, as in (25): the EPP feature of Voice_{PASS} triggers movement of the IA bearing [TOPIC] to a specifier position above the EA, such that the IA topic ultimately comes to c-command the EA by moving to SpecTP.



This is in line with the generalizations (i) that 3>3 O-Constructions always appear with *hi-* (a realization of Voice_{PASS}) and (ii) that they cannot have accusative case marking on the IA.

The second [TOPIC]-related constraint concerns SAPs. Specifically, if an SAP does not bear [TOPIC], it must be c-commanded by a DP bearing [TOPIC]. The key idea here is that SAPs are so inherently discourse-prominent that they must be made structurally secondary when they are not in fact the topic (see Givón 1976: 186 on SAP topicality).¹⁶ In an O-Construction with an SAP EA, the SAP is not the topic. Therefore, this kind of O-Construction must have Voice_{PASS} so that the third-person IA topic will become more structurally prominent than the SAP EA.

This constraint on the distribution of SAPs therefore correctly captures that SAP>3 O-Constructions must be passive. It also correctly rules out SAP>SAP O-Constructions with active voice, as the SAP EA would again not bear a [TOPIC] feature. However, what is it that rules out SAP>SAPO-Constructions with passive voice? And what ensures that 3>SAP O-Constructions have active voice? We address both questions immediately below with the same constraint.

3.3.2. THE LICENSING CONSTRAINT ON SAPS. The final restriction we propose is a licensing constraint on SAPs. Specifically, we suggest that Voice_{PASS} cannot license an SAP internal argument. This licensing restriction is highly reminiscent of the “deep” inverse in Algonquian being incompatible with SAP internal arguments (Oxford 2023a,b, 2024).¹⁷ We submit that the person restrictions on the use of Voice_{PASS} will be explained ultimately in a similar fashion to

¹⁶ See related discussion of person-hierarchy effects in Pancheva & Zubizarreta (2018), who suggest that participant arguments are inherently “proximate”, being suitable perspectival centers.

¹⁷ Oxford’s explanation for this incompatibility is that SAP arguments lack the D structure present with third person nominals (in line with Bartos 1999; van Gelderen 2011; Bjorkman et al. 2019). Consequently, the SAP nominal cannot be moved by means of the EPP feature on Voice_{PASS}. However, in our approach, this would render SAPs unable to be subjects at all (i.e., satisfy EPP on T).

PCC effects observed cross-linguistically in ditransitive expressions (on which, see Anagnostopoulou 2017 and references therein; many thanks to Philipp Weisser and Paula Fenger for making this connection). For the so-called Strong PCC in other languages, combinations of indirect objects with direct objects are licit for 3>3 and SAP>3, but not for SAP>SAP or 3>SAP, and this is parallel to what we observe for the distribution of the passive voice head in Jarawara. While accounts of PCC effects vary, recent morphosyntactic proposals often share the perspective that such effects arise as a result of restrictions on one head agreeing with two arguments at the same time (e.g., Anagnostopoulou 2003; Coon & Keine 2021; Deal 2024, among many others). One possible implementation for Jarawara may involve such agreement with Voice_{PASS}, though we leave the assessment of this type of proposal to future research.

To be clear, our analysis does not rule out O-Constructions with SAP internal arguments altogether; as we saw above, this is indeed possible. But in such cases, Voice_{ACT} is selected with the SAP bearing [TOPIC]. There, the SAP necessarily appears with accusative case; T agreement is with the external argument, mood (C) agreement is with the internal argument, and the third pronominal position is occupied by a pronoun that indexes the SAP internal argument (e.g., 15).

Considering the environments where the feature [TOPIC] is on the IA, Table 3 summarizes possible and impossible person combinations. The two conditions on the distribution of [TOPIC] and the licensing condition on SAPs work together to successfully generate the attested person restrictions in O-Constructions.¹⁸

EA	IA _[TOPIC]	O-Construction	Voice _{ACT/PASS}	Use of this Voice?
3	3	✓	Voice _{PASS}	Satisfied c-command condition on [TOPIC]
		✗	Voice _{ACT}	Violates c-command condition on [TOPIC]
SAP	3	✓	Voice _{PASS}	Satisfies “low prominence” condition on non-topic SAP
		✗	Voice _{ACT}	Violates “low prominence” condition on non-topic SAP
3	SAP	✓	Voice _{ACT}	Satisfies all constraints and SAP is licensed
		✗	Voice _{PASS}	Licensing constraint on SAP violated
SAP	SAP	✗	Voice _{PASS}	Licensing constraint on SAP violated
		✗	Voice _{ACT}	Violates “low prominence” condition on non-topic SAP

Table 3. Summary table of person combinations in O-Constructions

4. Conclusion. Our proposal treats Jarawara O-Constructions as being unified by the presence of [TOPIC] on the IA of a transitive, which induces agreement with C; at the same time, O-Constructions vary in whether they are active or “passive” voice depending on the combinations of person for the arguments. Our account captures patterns of word order, agreement with T and C, case marking, restrictions on person combinations, the distribution of the passive-like marker *hi-*, and the identity of the person-number marker in the so-called third pronominal position. In this section, we briefly compare our analysis to previous accounts, contextualize our analysis in light of other work on non-canonical passives, and identify open questions for future research.

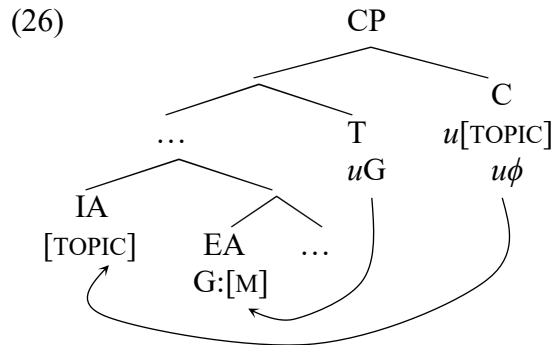
¹⁸ Regarding the issue of why Voice_{PASS} does not appear if the EA bears the topic feature, we assume that this is dispreferred for information structure reasons, as it “promotes” the non-topic IA over the topicalized EA. See, e.g., Givón (1982) for discussion of discourse status and passivization.

4.1. PREVIOUS FORMAL LITERATURE ON THE O-CONSTRUCTION. Previous formal work on the O-Construction in Jarawara is scant; we know of only Farrell (2005) and Marquardt (2020a,b). Both are important predecessors to the current work but do not have as much empirical coverage. Farrell (2005) presents a small case study of the A-Construction vs. the O-Construction and sketches a syntactic analysis. Like in our analysis, he proposes a special Voice head in O-Constructions that assigns ergative to its specifier and claims that *hi-* realizes this Voice head. However, he does not treat the 3>SAP O-Constructions that behave like A-Constructions, the ban on SAP>SAP O-Constructions, or T and C agreement.

As for Marquardt (2020a,b), her work is a major precedent in that she develops an analysis of mood suffixes as topic agreement on C in Jarawara. However, the analysis makes an incorrect prediction and does not extend to all the phenomena discussed here. The focus of the analysis is the agreement mismatch in 3>SAP O-Constructions, where C agrees with the IA and T with the EA, as in (14) (not repeated for reasons of space).

In a nutshell, her analysis is as follows. First, gender features are privative: nominals either have [MASC] or no gender feature. Second, T only has a gender probe and thus can only Agree with a nominal that has a gender feature; in general, probes with unvalued gender receive default FEM agreement. Third, the IA in examples like (14) raises above the EA. Thus, in examples like (14), T agrees with the masculine third person EA since the SAP IA lacks gender features; however, C agrees with the IA SAP topic since it is closer and C thus receives default FEM gender.

Although this gender-focused approach generates examples like (14), it makes an incorrect prediction. Specifically, 3[MASC]>3[FEM] O-Constructions should also show the agreement mismatch: T would not Agree with 3[FEM] IA since 3[FEM] IA lacks a gender feature, so T is predicted to agree with 3[MASC] EA. This configuration is shown schematically in (26).



The prediction of agreement mismatch, however, is not borne out, as seen in (27), where both C and T agree with the feminine IA ‘water’.

(27) Okomobi_A faha_O hi-fa-hani ama-ke
 name(M) water(F) Oc-drink-**IPn.F** EXTENT-**DEC.F**
 ‘Okomobi (to his surprise) drank water.’ O-Construction (D2004: 207)

Moreover, Marquardt (2020a,b) does not present an analysis of case assignment, the ban on SAP>SAP, or the marker *hi-*. Overall, then, Farrell (2005) and Marquardt (2020a,b) introduced some of the components to the present work, but they have more restricted empirical coverage and, for Marquardt, the analysis makes an incorrect prediction.

4.2. JARAWARA IN A CROSS-LINGUISTIC CONTEXT. Generally speaking, our analysis of Jarawara contributes to the growing body of work on non-canonical passives (e.g., Legate 2021).

Specifically, it supports the perspective according to which the internal arguments of transitives have more than one means of being “promoted” (in a broad sense). This has interesting implications for locality in that the Theme can be promoted despite the Agent still being “in the way” (in the present analysis, the Agent is inaccessible because of inherent/ergative case). It also supports Legate’s (2021) view of Voice as highly underspecified at the level of Universal Grammar in that passive constructions vary in whether they demote the agent (Jarawara: no), promote the theme (Jarawara: yes), and have morphological marking (Jarawara: yes, the *hi-* marker).

An important area for future research is how Jarawara O-Constructions compare to other “noncanonical” passives that do not demote the agent. Another likely example of this type of noncanonical passive is non-actor voice in Tagalog. In particular, Aldridge (2012) proposes that Tagalog has a Voice_{PASS} that assigns ergative and raises up the IA, like in Jarawara. Another likely example is inverse constructions in Algonquian, as discussed above. Haude & Zúñiga (2016) in fact suggest that Jarawara O-Constructions are typologically “in-between” Austronesian voice and the Algonquian inverse.

To take a closer look at Algonquian, our analysis was inspired by the split treatment of the Algonquian inverse offered by Oxford (2023a,b, 2024), with a number of details from our passive analysis hewing closely to his formulation of what he refers to as the “deep inverse”, which differs from the “shallow inverse” pattern. Under his analysis, a 3>3 inverse construction contains a passive-like (or “ergative”) voice head, which assigns ergative case to the projected external argument and triggers movement of the internal argument to a higher specifier position.¹⁹

In addition to this component of the analysis, our account resembles his in the motivations for the distribution of active and passive voice, in accordance with constraints on SAP arguments and on topicality. The main differences between Algonquian and Jarawara then emerge due to the specifications of the probes (as well as how they interact with each other): namely, Jarawara has a C probe that searches for [TOPIC] and Algonquian has a T (or Infl) probe that can search for [PARTICIPANT]. Hopefully future work will explore the implications of this difference.

4.3. OPEN QUESTIONS. One open question concerns the distribution of *hi-* outside of transparently transitive contexts. According to Vogel (2015: 46–48), it is possible for intransitives to appear with *hi-*, specifically when there is an adjunct that behaves like an argument for agreement. (The pertinent adjuncts involve nouns whose inalienable possessors determine their agreement properties; see Adamson 2024; D2004 for discussion.) We believe these may be amenable to a pseudo-passive analysis in which the adjunct does appear in subject position, as corroborated not only by the agreement pattern, where the finite verb agrees with a topicalized adjunct, but also the fixed position of this constituent, which must appear preverbally, unlike other adjuncts in the language (see especially Vogel 2015: (118) and his discussion on p. 48). For reasons of space, we leave a fuller discussion of this pattern to future research. A final promising area for future research, as pointed out to us by Adam Singerman (p.c.), is whether our account extends to comparable constructions in the related Arawá language Kulina (on which, see Dienst 2014).

¹⁹ A key diagnostic that indicates that the IA c-commands the EA in 3>3 inverse Algonquian constructions comes from binding; because the IA c-commands the EA, it is able to bind into it (see especially Bruening 2001). We were unfortunately unable to identify any relevant examples from the available Jarawara data.

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