

## **Unergatives, antipassives, and roots in Chuj**

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*Memorias del VII Congreso de Idiomas Indígenas de Latinoamérica,  
29-31 de octubre de 2013, Universidad de Texas en Austin*

*Disponible en <http://www.ailla.utexas.org/site/events.html>*

# Unergatives, antipassives, and roots in Chuj\*

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**Keywords:** unergatives, antipassives, Chuj, Mayan, voice

## 1. Introduction

The suffix *-w* in Chuj (Mayan) is found in two contexts: (i) attached to transitive roots to form what have been labelled “incorporation antipassives” and (ii) attached to nominal and positional roots to form unergatives. In both contexts, the result is an intransitive verb form with a single, agentive external argument. In this paper I provide an analysis of these constructions in which *-w* is a Voice<sup>0</sup> head that attaches to a category-neutral root, introducing an external argument but not assigning case. This proposal both captures the patterns found in the *-w* stem forms in Chuj, and also provides further support for the under-specification of roots in Mayan languages (Haviland 1994; Lois and Vapnarsky 2006; Lois 2011).

The Chuj construction described as an incorporation antipassive is illustrated in (1). In (1a), *-w* attaches to a transitive root, *xik* ‘chop’; I gloss *-w* as ‘AG’ for ‘agentive’.<sup>1</sup> The resulting stem inflects as other intransitives in the language: the subject is cross-referenced with the Set B (absolutive) marker, and appears with the intransitive “status suffix” *-i*, discussed below. The object *k’atzitz* is incorporated: it appears in a bare form and receives a non-referential interpretation (§3.2). A full transitive is shown in (1b) for contrast. Here the subject triggers Set A/ergative agreement and the object may be a full referential DP, indicated in this example by the presence of the nominal classifier *te’*; third person singular absolutive is null, discussed below.

- (1) TRANSITIVE VERB ~ “INCORPORATION ANTIPASSIVE”
- a. Ix-onh-xik-w-i            k’atzitz.  
   PFV-B 1PL-chop-AG-IV wood  
   ‘We cut wood.’

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\*I am especially grateful to Magdalena Torres for her patience and generosity in sharing her language, as well as to the organizers and participants of CILLA VII. Thanks also to Lizzie Carolan, Lauren Clemens, Robert Henderson, Cora Lesure, Pedro Mateo Pedro, Omer Preminger, and the Ling-Tea group at McGill. This work was supported in part by a SSHRC Connection Grant (Co-PI Pedro Mateo Pedro).

<sup>1</sup>Abbreviations used in glosses are as follows: A – Set A (ergative, possessive); AG – agentive intransitive; AP – antipassive; B – Set B (absolutive); C1 – suffix formed by taking the first consonant of the CVC root; CLF – nominal classifier; DEM – demonstrative; DIR – directional; DIV – derived intransitive verb; DTV – derived transitive verb; IPFV – imperfective; IRR – irrealis; IV – intransitive verb; NML – nominal; PAS – passive; PLUR – plural; PFV – perfective; P – plural; PREP – preposition; PROSP – prospective; RN – relational noun; S – singular; STAT – stative suffix; SUF – unidentified suffix; TV – transitive verb. Glosses from other published works on Chuj have been modified in some cases for consistency.

- b. Ix-ko-xik        te' k'atzitz.  
 PFV-A 1PL-chop CLF wood  
 'We cut the wood.'

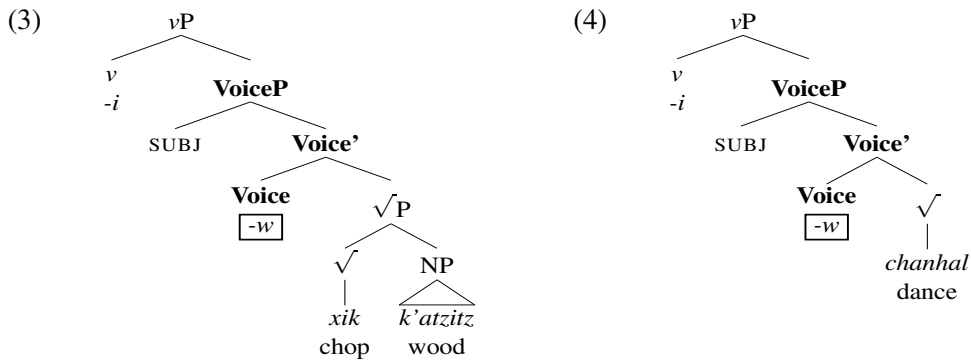
The suffix *-w* may also attach to nominal and positional roots to form agentive intransitive or *unergative* verb stems, as in (2a). Here *-w* appears attached to the nominal root *chanhal* 'dance'. Compare the same root functioning as a noun in (2b).

(2) NOUN ~ UNERGATIVE

- a. Tz-chanhal-w-i    heb' winh.  
 IPFV-dance-AG-IV 3PL CLF.MASC  
 'They dance.' (Buenrostro 2013, 245)
- b. Tz-och    chanhal chi'.  
 IPFV-enter dance    DEM  
 'The dance begins.'

In both of these contexts then, *-w* attaches to a bare root and the resulting stem is an intransitive stem with a single, agentive argument. These different but related uses of the suffix *-w* have been noted in Chuj (Buenrostro 2013), as well as for the cognate form in Popti' (Day 1973; Craig 1979). Day (1973, 42) writes of Popti', for example, that "*-w* derives [intransitive verbs] from virtually all TV and from many N [roots]."

In this paper I argue that all uses of the suffix *-w* can be best unified under an analysis in which: (i) *-w* is the realization of a Voice<sup>0</sup> head, introducing a single external argument, and (ii) this head combines directly with a root. Structures for incorporation antipassive and unergative stems are shown in (3) and (4). In (3), *-w* combines with a transitive root and its bare (pseudo-incorporated) object, while in (4) it combines with the nominal root *chanhal*.

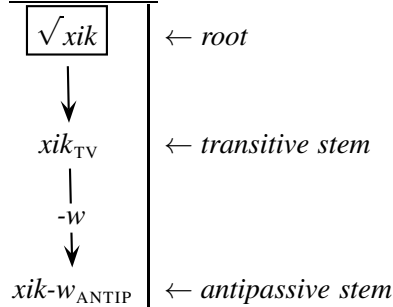


I propose that the most elegant analysis of these facts is one in which lexical roots—like *xik* 'chop' and *chanhal* 'dance'—are not completely specified for lexical category (Halle and Marantz 1993; Arad 2003; Borer 2005; Lois and Vapnarsky 2006; Lois 2011). This is a formalization of an intuitive proposal: Mayan roots have the *semantic capacity* to form certain types of stems, but they require more structure before they are able to inflect. Below

I demonstrate that *-w* belongs to a larger class of stem-forming suffixes in Chuj which have distinct but related functions.

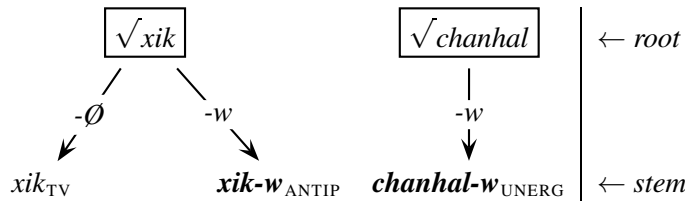
This has important implications for the status of antipassives—or at least certain types of constructions which have been described as antipassives. In Chuj, I argue that the incorporation antipassive formed with *-w* does not convert a transitive verb into an intransitive verb (as antipassives are frequently described; see Polinsky, to appear). That is, the representation in (5), in which a root first becomes a transitive stem and is then detransitized via the addition of the *-w* suffix, is incorrect. (Though, as I will show below, this type of analysis may be appropriate for other types of valence-altering morphology, including the “absolute antipassive,” discussed below.)

(5) INCORRECT DERIVATION FOR CHUJ INCORPORATION ANTIPASSIVE



Instead, both transitive and “antipassive” stems are formed directly from an under-specified root, as represented in (6). This makes *-w* appear less like a traditional antipassive and more like one of several other “stem formation suffixes” described for Chuj in Hopkins 1967, and discussed further below. I suggest that even apparently bare transitive stems must involve additional structure to turn a transitive root into an inflectable transitive stem, represented in (6) as  $-\emptyset$ .

(6) PROPOSED DERIVATION OF TRANSITIVE AND ANTIPASSIVE STEMS

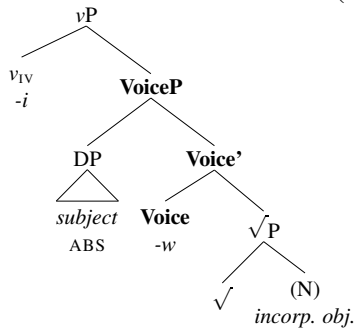


In the final section, I contrast stem-forming morphology like *-w* with other valence-altering morphology in Chuj, arguing for a distinction between (i) morphemes which attach directly to bare roots, and serve to *specify* the argument structure properties of the stem (like *-w* in (6)), and (ii) morphemes which attach to already-formed stems, and may *alter* the argument structure of a stem. Interestingly, the latter type permit the reintroduction of “demoted”

arguments via oblique phrases (i.e. the antipassive patient and the passive agent), while the former do not. I suggest this is a direct consequence of their level of attachment, and return to this in section 4 below.

As noted above, the boldfaced stems *xikw-* ‘chop (something)’ and *channhalw-* ‘dance’ in (6) share a common core structure, schematized in (7). Both constructions have a single (non-incorporated) argument: an agentive subject. Both also combine with the intransitive status suffix, *-i*, and the subject triggers absolutive (Set B) person marking on the predicate. I propose that the *-w* Voice<sup>0</sup> head that does not assign ergative case to its specifier.<sup>2</sup> As a result, the single external argument is licensed by finite Infl<sup>0</sup> (Coon, Mateo Pedro, and Preminger 2014), discussed further below.

(7) AGENTIVE INTRANSITIVE (ANTIPASSIVE OR UNERGATIVE)



The remainder of this paper is organized as follows. First, in section 2, I review basic grammatical properties of Chuj which will be relevant to the remaining discussion. Next, in section 3, I examine the two main types of agentive intransitives: the so-called incorporation antipassives, as well as unergatives formed both from nouns as well as from positional roots. In section 4 I turn to a comparison with other valence-related morphology in Chuj, drawing a distinction between suffixes which attach directly to roots, and those which attach to stems. Section 5 concludes.

## 2. Roots and stems in Chuj

Chuj is a member of the Q’anjob’alan branch of the Mayan language family spoken by approximately 40,000 people in the department of Huehuetenango in Guatemala (Pascual 2007). Data presented here, unless otherwise cited, are from the San Mateo Ixtatán variant. For general Chuj background see also Hopkins 1967; Pascual 2007; Buenrostro 2013.

As in other Mayan languages, roots in Chuj are overwhelmingly CVC in shape (though other forms, especially for nominal and adjectival roots, also exist; see Hopkins 1967, ch. 2). In the remainder of this paper, we will be concerned primarily with four types of roots, distinguishable by their formal inflectional and derivational properties: (i) intransitive roots, (ii) transitive roots, (iii) positional roots, and (iv) nominal roots. The final group, nominal

<sup>2</sup>The exact label of functional projections, e.g. Voice<sup>0</sup> vs. v<sup>0</sup> here is not crucial. I label the *-w* head Voice<sup>0</sup> as it introduces the external argument; the head hosting the status suffix (described below) is labeled v<sup>0</sup>, though at this point I make no claim about its specific function in the Chuj verbal projection.

roots, may typically appear underived directly in nominal contexts (argument position, possessed, with nominal classifiers), and are not discussed in detail here. In the remainder of this section I review some formal diagnostics for distinguishing among the first three categories.

## 2.1. Intransitives

Intransitive roots appear directly in intransitive stem forms, as illustrated in the examples in (8).

(8) INTRANSITIVE ROOTS IN INTRANSITIVE STEMS

- a. Ix-onh-**way**-i.  
PFV-B1P-sleep-IV  
'We slept.'
- b. Tz-ach-**k'ey**-i.  
IPFV-B2S-ascend-IV  
'You go up.'
- c. Ix-**b'ey** ix ix.  
PFV-walk CLF.FEM woman  
'The woman walked.'

Intransitive stems are marked by the intransitive “status suffix” *-i* in perfective and imperfective aspects, as in (8a–b); this status suffix is typically dropped when the stem is not phrase final, as in (8c) (see Henderson 2012), and is replaced by the irrealis *-ok* in irrealis contexts, including what has been called the future or prospective aspect. The single argument of the intransitive stem is cross-referenced with a “Set B” or absolutive morpheme, which cliticizes to the stem-initial aspect marker. As in other Mayan languages, there is no overt third person singular Set B marker, as in (8c).<sup>3</sup>

Other types of roots may also appear in intransitive stem forms, but require the presence of derivational suffixes, to which we return below. A template for an intransitive stem in the perfective or imperfective aspect is given in (9).

- (9) ASP – SET B - **root** – { DERIV } – *-i* *(intransitive)*

## 2.2. Transitives

Transitive roots may appear directly in transitive stem forms, as in (10). The root appears with the transitive status suffix *-V'* in perfective and imperfective aspects; as above, this suffix is dropped when the stem is not phrase-final, or replaced with *-ok* in irrealis forms.<sup>4</sup> Transitive stems appear with two person/number-marking morphemes: objects are

<sup>3</sup>Chuj shows split ergativity in the progressive aspect: here the single argument of an intransitive is marked with Set A morphology. We omit progressive forms here and below for simplicity, as they are not directly relevant to the discussion, but see Coon and Carolan 2015 on the Chuj progressive.

<sup>4</sup>This suffix is *-a'* for roots with non-back vowels [a], [e], and [i], and harmonic with the root vowel for forms with [o] and [u] root vowels.

cross-referenced with Set B markers and transitive subjects are cross-referenced with Set A (ergative) morphemes. Recall that 3rd person Set B is null in (10b–c).

(10) TRANSITIVE ROOTS IN TRANSITIVE STEMS

- a. Ix-ach-ko-**chel**-a'.  
PFV-B2S-A1S-hug-TV  
'We hugged you.'
- b. Ix-ko-**man**-a'.  
PFV-1AP-buy-TV  
'We bought it.'
- c. Tz-in-**jax** ixim ixim.  
IPFV-A1S-grind CLF corn  
'I grind the corn.'

In Mayanist literature a division is drawn between “root transitives”, like the ones in (10), and “derived transitives”. In Chuj, derived transitives appear with the suffix *-ej*. These include both transitives derived by overt morphology, as in (11a), as well as a number of zero-derived forms, often denominals, as with the nominal root *tz'ib'* ‘letters, writing’ in (11b). Since *-ej* attaches to already-derived verbal forms like (11a), I assume the presence of null derivational structure in forms like (11b). The transitive suffix *-V'* does not follow *-ej* and *-ej* is not dropped phrase-finally. The division between derived and root transitives is relevant below.

- (11) a. Ix-a-way-mi-t-**ej** ix nene.  
PFV-A2S-sleep-SUF-CAUS-DTV CLF.FEM baby  
'You put the baby to sleep.'
- b. Tz-ko-tz'ib'-**ej** hu'um.  
IPFV-A1P-write-DTV book  
'We write books.'

Root- and derived-transitive templates are shown in (12) and (13).

- (12) ASP – SET B – SET A – **root** – **-V'** (*root transitive*)
- (13) ASP – SET B – SET A – **root** – DERIV – **-ej** (*derived transitive*)

Aspect markers and stem-final “status suffixes” are summarized in (14). These are listed together here for ease of reference, but note that some differences exist. While *-i* and *-V'* appear only in phrase-final position, and are replaced with *-ok* in the irrealis, *-ej* is never dropped. Furthermore, while *-i* and *-ej* appear on stem forms which have been derived, *-V'* only appears on transitive roots.

## (14) ASPECT MARKERS AND STATUS SUFFIXES

		IV	TV	DTV	
IPFV	(tz)	-i	-V'	-ej	
PFV	(ix/Ø)	-i	-V'	-ej	
PROSP	(ol)	-ok	-ok	-ej	(irrealis)

As Henderson (2012) notes, Mayan status suffixes do not *alter* the transitivity of a stem, but rather “reflect valency information already available from the lexical content of the predicate, or from a combination of lexical information and derivational morphology” (Henderson 2012, 747). That is, while the choice of status suffix depends on properties like transitivity, TAM, and mood, this information is generally also represented elsewhere (cf. Radkevich 2011).

## 2.3. Positionals

Finally, we turn to positional roots. Positionals form a distinct class of roots throughout the Mayan family, distinguishable by their derivational possibilities as well as their meaning (see e.g. Haviland 1994; Henderson, to appear-a). Semantically they typically make reference to position, shape, aggregation, or surface quality; for related Tsotsil, Haviland (1994, 733) refers to an apparent “preoccupation with space, shape, and configuration.” For Chuj, Hopkins (1967, 76) notes that positional roots may be “distinguished from other form classes by a number of derivational reduplication processes which occur with no other form class.” One diagnostic is shown in (15): positional roots in Chuj form stative (aspectless or “non-verbal”) predicates through the addition of the suffix *-an*, as in (15).

## (15) POSITIONAL ROOTS IN STATIVE STEMS

- a. **Chot-an**          em          nok' k'ok'on.  
 crouched-STAT DIR.down CLF frog  
 ‘The frog is crouched down/squat.’
- b. **Linh-an**          hach.  
 standing-STAT B2S  
 ‘You’re standing.’

To form eventive transitive or intransitive predicates, the positional root requires one of a number of derivational suffixes, followed by the appropriate status suffix (*-i* or *-ej*), as shown with the intransitive and transitive stems derived from positional roots in (16).<sup>5</sup>

## (16) POSITIONAL ROOTS IN VERBAL STEMS

- a. **Ix-in-chot-n-aj-i.**  
 PFV-B1S-sit-SUF-DIV-IV  
 ‘I sat down.’

<sup>5</sup>Note that the *-w* suffix glossed ‘C1’ in (16c) is a productive process involving suffixing the initial consonant of the CVC positional root; it is not the same as the agentive *-w* discussed here.





an *intransitive stem*. As I have shown in this section, Chuj roots may be classed according to their formal derivational behavior, and, to some extent, their semantics. Nonetheless, Chuj roots do not inflect directly for person/number and temporal information. Rather, additional morphology is required to form stems, and a single root may enter into a variety of different stem forms through the addition of “derivational” and “status” suffixes. Following Lois and Vapnarsky 2006; Lois 2011 on Yucatecan languages, I take roots to be underspecified for category and argument structure. Below we will find distinctions between suffixes which attach directly to an underspecified root, and suffixes which attach to already-derived stems.

### 3. Agentive intransitives

In this section we review what have been identified as two contexts in which the suffix *-w* attaches directly to roots: unergatives (§3.1) and the “incorporation antipassive” (§3.2). I argue that these arise in an identical structural configuration.

First note that even internally to Mayan, it is unsurprising that these two categories should pattern together. In Ch’ol, for example, both unergatives and antipassives are nominal stems which require the presence of a light verb in order to predicate (Gutiérrez Sánchez 2004; Vázquez Álvarez 2011; Coon 2013), as in (19).

(19) CH’OL

- |                  |                           |                          |
|------------------|---------------------------|--------------------------|
| a. Tyi k-cha’l-e | <b>alas.</b>              |                          |
|                  | PFV A1S-do-DTV game       |                          |
|                  | ‘I played.’               | (“ <i>unergative</i> ”)  |
| b. Tyi k-cha’l-e | <b>mähn-oñ-el.</b>        |                          |
|                  | PFV A1S-do-DTV buy-AP-NML |                          |
|                  | ‘I shopped.’              | (“ <i>antipassive</i> ”) |

Unergatives like *alas* in (19a) are simply nominal roots, while antipassives like *mähn-oñel* always appear with the nominalizing suffix *-el*. See also Danziger (1996) on Mopan. In Chuj, unergatives and incorporation antipassives form verbal stems, but as in Ch’ol, the two types of construction share properties in common.

#### 3.1. Unergatives

This section introduces *-w* forms derived from nominal and positional roots.<sup>6</sup> Examples of denominal *-w* forms and their corresponding roots are shown in (20). Note that verbs borrowed from Spanish—for example *karrel* from the Spanish infinitive form *correr*—enter Chuj as nominals, also discussed in Haviland 1994 for Tsotsil and Coon 2013 for Ch’ol.<sup>7</sup>

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<sup>6</sup>I focus on nominal and positional roots in this section, but it seems likely that this process is available for other lexical roots as well (with the exception of unaccusatives, discussed below). The class of adjectival roots in Mayan languages is relatively small (England 2004; Martínez Cruz 2007), and I do not discuss them here.

<sup>7</sup>These borrowed forms suggest that the *-w* process is at least semi-productive, and not restricted to frozen lexical items as suggested for these unergative (non-antipassive) *-w* forms by Buenrostro 2013.

## (20) UNERGATIVES DERIVED FROM NOMINAL ROOTS

NOMINAL ROOT		VERB STEM	
<i>chanhal</i>	'dance'	<i>chanhal-w-i</i>	'dance'
<i>at'is</i>	'sneeze'	<i>at'is-w-i</i>	'sneeze'
<i>patan</i>	'cleared land (for planting)'	<i>patan-w-i</i>	'to clear land'
<i>tz'ib'</i>	'letters, writing'	<i>tz'ib'-w-i</i>	'write'
<i>karrel</i>	SP 'run'	<i>karrel-w-i</i>	'run'
<i>paxeal</i>	SP 'stroll'	<i>paxeal-w-i</i>	'stroll'

As noted in the introduction, the nominal roots on the left also appear in clearly nominal contexts, shown by the examples in (21). Examples of the same roots in *-w* verb stem forms are shown in (22):

- (21) a. Ix-w-ab' jun **at'is**. (22) a. Ix-in-**at'is**-w-i.  
 PRFV-A1S-hear one sneeze PFV-B1S-sneeze-AG-IV  
 'I heard a sneeze.'  
 b. Ix-in-koch t'a **patan**. b. Ol-ach-**patan**-w-ok.  
 PFV-B1S-arrive PREP cleared.land PROSP-B2S-clear.land-AG-IRR  
 'I arrived at the cleared land.' 'You will clear land.'

Agentive intransitive forms are also derived from positional roots, as in (23).

## (23) UNERGATIVES DERIVED FROM POSITIONAL ROOTS

POSITIONAL ROOT		VERB STEM	
<i>chet</i>	'on two legs'	<i>chet-w-i</i>	'jump'
<i>chot</i>	'crouched down'	<i>chot-w-i</i>	'jump (in a crouched position)'
<i>jenh</i>	'with wings outstretched'	<i>jenh-w-i</i>	'fly'
<i>kot</i>	'on four legs'	<i>kot-w-i</i>	'crawl'
<i>tel</i>	'lying down'	<i>tel-w-i</i>	'fall'

Recall from section 2 that positional roots in Chuj may be identified by their ability to form stative predicates with *-an*, as well as by other derivational processes. Stative *-an* stems often appear reduplicated, as shown in (24b) and discussed in Hopkins 1967.

- (24) a. **Kot-an** em ix unin.  
 on.four.legs-STAT down CLF.FEM child  
 'The girl is crouched down.'  
 b. **Chet-an chet-an** nok' chej.  
 on.two.legs-STAT on.two.legs-STAT CLF horse  
 'The horse is reared up on two legs.'

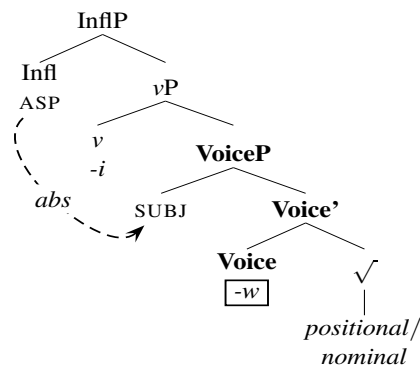
Examples of these roots in intransitive verb stems with *-w* are shown in (25).

- (25) a. Tz-**kot**-w-i                    ix            nene.  
 IPFV-four.legs-AG-IV CLF.FEM baby  
 ‘The baby crawls.’  
 b. Ix-**chot**-w-i                    nok’ k’ok’on.  
 PFV-crouched-AG-IV CLF frog  
 ‘The frog hopped.’

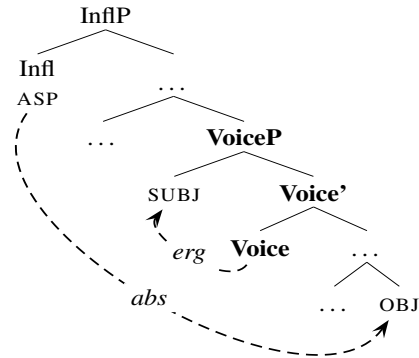
These stems fit the pattern of intransitive stems in Chuj identified in section 2: they have a single argument, marked with Set B/absolutive, and they appear with the intransitive status suffix *-i* in the perfective and imperfective aspects (see (14) above).

I propose that ROOT-*w-i* stems have the structure in (26), repeated from (4) above. The intransitive *-w* stem is contrasted with the proposed derivation of a full transitive in (27).<sup>8</sup>

(26) AGENTIVE INTRANSITIVE



(27) TRANSITIVE



The suffix *-w* occupies a “Voice” head, which merges directly with the root and introduces the external argument (along the lines of Kratzer 1996). I propose that the *-w* Voice<sup>0</sup> head contrasts with the Voice<sup>0</sup> that introduces the external argument in full transitive constructions: transitive Voice<sup>0</sup> assigns inherent ergative case to the argument in its specifier, while *-w* Voice<sup>0</sup> does not (see e.g. Woolford 1997; Legate 2008 and works cited there on inherent ergative). The realization of ergative agreement is a result of this relationship (Coon, to appear).

I assume, following Coon, Mateo Pedro, and Preminger 2014 on related Q’anjob’al, that absolutive arguments are licensed by finite Infl<sup>0</sup>, which is occupied by the aspectual particle (see Aissen 1992). In the *-w* stem, Infl<sup>0</sup> licenses the external argument; in a transitive construction like (27), Infl<sup>0</sup> licenses the object. I propose that the root undergoes successive head-movement through Voice<sup>0</sup> to v<sup>0</sup>, a head high in the verbal projection which hosts the status suffix *-i*. The aspect head triggers clitic doubling of an absolutive clitic (Coon et al.

<sup>8</sup>I remain agnostic for now about certain components of the transitive construction; for example, where the object is merged, and whether the *-V* “status suffix” for root transitive occupies the transitive Voice<sup>0</sup> head, or a higher functional projection. See also fn. 2.

2014), and the aspect-absolutive sequene cliticizes to the left of the verb stem, achieving the correct order of ASP-(ABS)-ROOT-W-I.

The proposal here accounts for the fact that both derived and underived intransitives have absolutive subjects. I assume that underived intransitives are unaccusative and merge the subject as an internal argument (see §3.3). In both types of stem, the single argument is licensed by *Infl*<sup>0</sup>.

### 3.2. Incorporation antipassives

As described by Maxwell (1976), Dayley (1981), and Buenrostro (2013), Chuj has two types of antipassive: (i) an absolutive antipassive, discussed further in section 4, and (ii) an incorporation antipassive, *-w*.<sup>9</sup> Here we focus on the latter. A transitive~antipassive pair is provided again in (28).

- (28) a. TRANSITIVE  
 Ix-ko-jax ixim ixim.  
 PFV-A 1P-grind CLF corn  
 ‘We ground the corn.’
- b. INCORPORATION ANTIPASSIVE  
 Ix-onh-jax-w-i ixim.  
 PFV-B 1P-grind-AG-IV corn  
 ‘We ground corn.’ (~ ‘We corn-ground.’)

In the transitive in (28a), the subject is marked with Set A (ergative) and the object is marked with Set B (absolutive; null for third person singular). In the absence of phrasal post-verbal material, we would find the transitive status suffix *-a*. In the form in (28b), on the other hand, there is only a single person/number-marker on the verb: the Set B *-onh* cross-references the subject. An apparent object appears, here *ixim* ‘corn’, but unlike in (28), it does not appear with its classifier.

As others have noted (Maxwell 1976; Dayley 1981; Buenrostro 2013), these intransitive stem forms appear with a non-oblique object, but there are restrictions: the object must be bare and non-referential, and it must appear immediately adjacent to the verb stem. As shown in (29), the “object” in an incorporation antipassive may not appear with numerals (29a), demonstratives (29b), or nominal classifiers (29c). As described for other Q’anjob’alan languages (e.g. Craig 1986 for Popti’ and Zavala 2000 on Akatek), nominal classifiers in Chuj appear either preceding nominals in referential contexts or alone as referential pronouns.

- (29) a. \* Ol-in-man-w-ok jun kaxlan.  
 PROSP-B 1S-buy-AG-IRR one chicken  
 intended: ‘We will buy one chicken.’

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<sup>9</sup>Smith-Stark (1978) reconstructs *\*(V)w* as one of the Proto-Mayan antipassive morphemes.

- b. \* Ix-in-chonh-w-i wakax **tik**.  
 PFV-B 1S-sell-AG-IV cow DEM  
 intended: ‘We sold this cow.’
- c. \* Ix-onh-jax-w-i **ixim** ixim.  
 PFV-B 1P-grind-AG-IV CLF corn  
 intended: ‘We grind the corn.’

The incorporated object may also not be possessed, as shown by the forms in (30).

- (30) a. \* Ix-in-kal-w-i **hin**-kape.  
 PFV-B 1S-stir-AG-IV A 1S-cafe  
 intended: ‘I stirred my coffee.’
- b. \* Ix-onh-pay-w-i **ko**-kaxlan.  
 PFV-B 1P-roast-AG-IV A 1P-chicken  
 intended: ‘We roasted our chickens.’

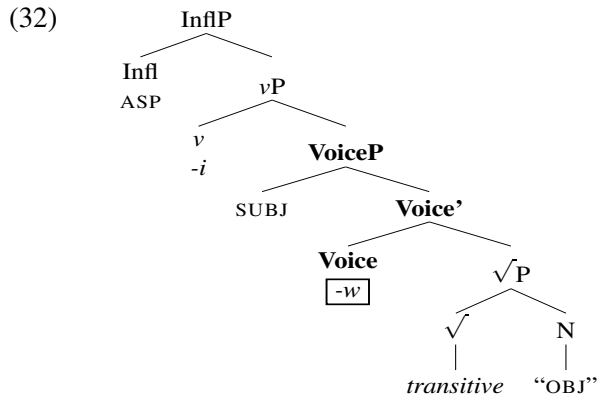
As Maxwell (1976) describes, certain pre-nominal adjectives may appear with antipassive objects, as in (31a), but post-nominal adjectives are impossible (31b).<sup>10</sup> Because only a limited number of adjectives appear in pre-nominal position in Chuj, Maxwell proposes that forms like *niwak kaxlan* ‘fat chicken’ in (31a) are actually compounds.

- (31) a. Ix-in-man-w-i **niwak** kaxlan.  
 PFV-B 1S-buy-AG-IV fat chicken  
 ‘I bought fat chickens.’
- b. \* Ix-in-man-w-i kaxlan **niwak-il**.  
 PFV-B 1S-buy-AG-IV chicken fat-SUF  
 intended: ‘I bought fat chickens.’

Following the analysis of Maxwell (1976), we may conclude that these objects are indeed incorporated, and are not full nominal arguments. Building on Baker 1988, Massam 2001, and others, I assume that the bare incorporated object does not need to be licensed (i.e. receive abstract case). The picture, then, is much the same as for the unergatives in (26) above: the transitive root selects a bare nominal. The Voice head *-w* merges the subject in its specifier, but again does not assign ergative; the single (case-requiring) argument is licensed by  $\text{Infl}^0$ , and realized as absolutive.

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<sup>10</sup>Maxwell (1976) notes some dialectal variation in the types of modifiers allowed. The data here is from the San Mateo Ixtatán dialect.



A question remains about how to derive the correct surface order. While the object must be adjacent to the verb stem, the verb still appears with the suffixes *-w* and *-i*. The puzzle is then as follows: how can we ensure the object remains adjacent to the verb stem, but *outside* of the suffixal morphology? I tentatively suggest here, following the proposal in Clemens 2014 for incorporation structures in Niuean, that the verb undergoes regular head movement to  $v^0$ , to a position above the subject, as in the unergatives above (see also Armstrong 2015 on Yucatec). The incorporated object is reordered at PF, perhaps due to a prosodic requirement that the structurally impoverished object be phrased with the verb. Future empirical work is needed to confirm whether this is tenable for Chuj, but the parallels with Niuean make such an account promising, as well as consistent with the structure for unergatives above.

Finally, note that I have represented the incorporated object as a complement to the root (see Harley, to appear for support and discussion). This receives support from the following two facts. First, an incorporated object is possible only for the *-w* antipassive which attaches directly to roots; we will see in section 4 below that there is a second type of antipassive in Chuj, the “absolute antipassive.” The absolute antipassive attaches to full transitive stems, and does not permit incorporated objects. There thus appears to be a connection between the low attachment of *-w* and the presence of an incorporated object—a connection we may be able to tie to the fact that both occur at the root level.

Second, Buenrostro (2013) notes that some incorporation antipassive constructions receive special meanings, consistent with being merged internal to the first phase (see e.g. Arad 2003). Buenrostro gives the example in (33), where the combination of *il* ‘see’ and the bare object *ak’wal* ‘night’ results in an idiomatic reading ‘to keep vigil’ (i.e. after someone dies, or is very ill).

- (33) jun ak’wal b’ajtil tz-onh-il-w-i ak’wal  
 one night when IPFV-B 1P-see-AG-IV night  
 ‘a night when we kept vigil’ (Buenrostro 2013, 245)

### 3.3. Unaccusatives

To this point, we have seen the suffix *-w* appear on three of the four types of roots identified above:

	NOMINAL		POSITIONAL		TRANSITIVE	
(34)	<i>chanhal-w</i>	‘dance’	<i>kot-w</i>	‘crawl’	<i>man-w</i>	‘buy’
	<i>paxéal-w</i>	‘stroll’	<i>tel-w</i>	‘fall’	<i>xik-w</i>	‘chop’
	<i>at’is-w</i>	‘sneeze’	<i>jenh-w</i>	‘fly’	<i>jax-w</i>	‘grind’
	...		...		...	

We turn now to the fourth type of root discussed in section 2: intransitives. Here we are specifically concerned with what appear to be *unaccusative* intransitives. Though further work is needed in this area, Chuj verbs which correspond to unergatives in languages for which such diagnostics exist, are overwhelmingly derived by some sort of suffix or series of suffixes: either the *-w* described here, or one of several other consonantal suffixes (see appendix A). For example, cross-linguistically, unergatives often include manner-of-motion verbs as well as verbs of bodily function (e.g. Perlmutter 1978). Some examples of these verbs in Chuj are in (35). While not all roots are independently identifiable, the stem form is clearly complex.

(35) PUTATIVE UNERGATIVES		
VERB STEM		ROOT
<i>tz’it-w-i</i>	‘to jump’	<i>tz’it</i> (POS) ‘jumping’
<i>nox-w-i</i>	‘to swim’	<i>nox</i> (TV) ‘swim’
<i>taj-n-i</i>	‘to play’	
<i>mun-laj-i</i>	‘to work’	
<i>tz’oj-b’-an-i</i>	‘to cough’	<i>tz’oj</i> (N) ‘cough’
<i>tza-j-i</i>	‘to defecate’	<i>tza</i> (N) ‘excrement’
<i>chul-aj-i</i>	‘to urinate’	<i>chul</i> (N) ‘urine’

Chuj verbs which would be expected to pattern with unaccusatives—for example verbs of motion—are of the form CVC, do not involve additional derivational suffixes, and are impossible with *-w*:

- (36) a. Ix-b’at winh unin.  
 PFV-go CLF child  
 ‘The boy left.’
- b. \*Ix-b’at-w-i winh unin.  
 PFV-go-AG-IV CLF child  
 intended: ‘The boy left.’

Note that under the analysis presented here, this is exactly what we predict: *-w* is a Voice<sup>0</sup> head that attaches to a root and introduces an *external* argument; the internal argument is either absent entirely, or incorporated. Unaccusative intransitive roots, on the other hand, select an *internal* argument. In addition to semantic considerations, these conflicting requirements create a licensing problem. The *-w* Voice<sup>0</sup> head introduces an external argument but does not assign inherent ergative case. The introduced argument must then be licensed by finite Infl<sup>0</sup>. Intransitivity is ensured in *-w* forms because Infl<sup>0</sup> can



license only a single argument, ruling out the presence of a full internal argument like in (??).

### 3.4. The status suffix *-i*

Despite the formal similarities noted above (i.e. the appearance of Set B subject marking and the *-i* intransitive status suffix), it is important to note one apparent difference between intransitive stems derived in *-w* and intransitive stems formed directly from intransitive roots, like *way* ‘sleep’. Recall from above that transitive and intransitive status suffixes disappear when not phrase-final. This can be seen by the contrast in (37).

- (37) a. Ix-ach-way-i.  
 PFV-B2S-sleep-IV  
 ‘You slept.’  
 b. Ix-way winh unin.  
 PFV-sleep CLF.MASC child  
 ‘The boy slept.’

However, in *-w* stem forms like those illustrated in (38), the *-i* never disappears; compare (38b) with (37b). It could be for this reason that many authors have treated the sequence *-w-i* as a single morpheme: *-wi*. Nonetheless, stems with *-w* may also appear in other forms, for example with the irrealis suffix *-ok*, as in (39).<sup>11</sup>

- (38) a. Ix-ach-chanhal-w-i.  
 PFV-B2S-dance-AG-IV  
 ‘You danced.’  
 b. Ix-chanhal-w-i winh unin.  
 PFV-dance-AG-IV CLF.MASC child  
 ‘The child danced.’  
 (39) Ol-chanhal-w-ok winh unin.  
 PROSP-dance-AG-IRR CLF.MASC child  
 ‘The child will dance.’

Following Mateo Pedro (2011) on Q’anjob’al, I propose that this difference can be seen as a phonological restriction: the omission of the final vowel in the *-w* stems would result in a word-final consonant cluster, impossible in Chuj: *\*chanhalw*, *\*jenhw*, *\*at’isw*, *\*kotw*, *\*karrelw*.

## 4. Voice and valence adjusting

In the preceding sections, we have seen that the suffix *-w* attaches to roots whose meanings are compatible with a single external argument. Since the *-w* head does not

<sup>11</sup>Writing of the cognate form in Popti’, Craig (1979, 145) notes “The compound suffix *-wi* of the incorporative voice is entirely intransitive: *-w* is the same intransitivizing suffix found in the absolutive antipassive, and *-i* is the stem-final vowel of intransitive verbs.”

assign ergative case, and only a single absolutive is possible (via licensing by finite Infl<sup>0</sup>), we predict the fact that if an internal argument appears, it must be incorporated. In this section I provide additional evidence that the *-w* suffix we have seen to this point attaches directly to a root, not to a precategorized stem, through comparison with other voice and valence morphology in Chuj.

Building on work in Hopkins 1967, I suggest that the morphemes identified as “voice” morphology in Chuj, for example in Domingo Pascual 2007 and Buenrostro 2013, in fact fall into two classes: (i) suffixes which attach directly to underspecified roots, and (ii) suffixes which attach to stems. The former class includes the *-w* suffix, the focus until now, as well as “passives” *-x* and *-j*, discussed briefly below. Rather than altering the valence of an already-categorized stem, I argue that these attach lower in the structure: not to a transitive form, but to an underspecified root.

#### 4.1. Derived transitives

In section 2 we saw two types of transitive stems in Chuj: root transitives, and derived transitives, repeated in (40) and (41).

(40) ASP – SET B – SET A – **root** – *-V'* (*root transitive*)

(41) ASP – SET B – SET A – **root** – DERIV – *-ej* (*derived transitive*)

Recall that root transitives are formed directly from CVC transitive roots, as in (42). Derived transitives either involve overt derivational morphology, discussed below, or the suffix *-ej* appears directly on a non-verbal root like the nominal root *tz'ib'* ‘letters, writing’ in (43).

(42) Tas ix-he-man-**a'**?  
 what PFV-A2P-buy-TV  
 ‘What did you buy?’

(43) Tas ix-he-tz'ib'-**ej'**?  
 what PFV-A2P-write-DTV  
 ‘What did you write?’

When *-w* appears on zero-derived transitives, the *-w* applies directly to the root (44a), not to the *-ej* stem (44b). Again, this follows the pattern we have seen above. The root *tz'ib'* is a nominal root and has two options: (i) it combines with *-ej* and forms a transitive verb, as in (43) above, or (ii) it combines with *-w*, like the nominals in section 3.1, resulting in an intransitive stem like (44a).

(44) a. Tz-onh-tz'ib'-**w-i** hu'um.  
 IPFV-B 1P-write-AG-IV book  
 ‘We write books.’  
 b. \* Tz-onh-tz'ib'-**ej-w-i** hu'um.  
 IPFV-B 1P-write-DTV-AG-IV book  
 intended: ‘We write books.’

Derived transitives can also be derived from intransitive and transitive roots. The transitive root *way* ‘sleep’ can appear in an intransitive stem in (45a), or with the sequence *-m-it* in (45b) to form a causative.<sup>12</sup> The resulting transitive appears with the derived status suffix *-ej*. As expected, this form may not antipassivize with *-w*; the antipassive for derived transitives is discussed in the following section.

- (45) a. Ix-way ix nene.  
 PFV-sleep CLF.FEM baby  
 ‘The baby slept.’  
 b. Ix-a-way-m-it-ej ix nene.  
 PFV-A2S-sleep-SUF-CAUS-DTV CLF.FEM baby  
 ‘You put the baby to sleep.’

Even root transitives can be further derived into derived transitive stems. The root *tzil* ‘tear’ in (46a) appears in a root transitive stem form in (46a), and with pluractional morphology in (46b). The pluractional stem requires the derived transitive suffix *-ej*.<sup>13</sup>

- (46) a. Ix-ko-tzil k-hu’um.  
 PFV-A 1P-tear A 1P-paper  
 ‘We tore up our papers.’  
 b. Ix-ko-tzil-**ch-it**-ej k-hu’um.  
 PFV-B 1P-tear-SUF-PLUR-DTV A 1P-paper  
 ‘We tore and tore up our papers.’

However, while the *-w* suffix may appear directly on the root, as in (47a), it is impossible after the pluractional morphology in (47b). The presence or absence of *-ej* (in any order) has no effect on this ungrammaticality.

- (47) a. Ix-onh-tzil-w-i hu’um.  
 PFV-B 1P-tear-AG-IV paper  
 ‘We tore up papers.’  
 b. \*Ix-onh-tzil-**ch-it**-(ej)-w-i hu’um.  
 PFV-B 1P-tear-SUF-PLUR-(DTV)-AG-IV paper  
 intended: ‘We tore up and tore up papers.’

To summarize what we have seen to this point: *-w* can combine with transitive, positional, and nominal roots. The fact that it combines with transitive roots and returns

<sup>12</sup>Hopkins (1967, 82) lists *-m* as one of several suffixes which derive “verb stems of undetermined class,” and *-it* as a transitive derivational suffix with a causative meaning, though in some contexts *-it* appears to contribute a pluractional reading. Future work is needed on Chuj causatives, which do not appear to be entirely productive.

<sup>13</sup>Evidence that the sequence *-ch-it* may be further decomposable into *-ch* and *-it* comes from positional roots, which appear to form pluractionals with *-tz-it*. Further work is needed here, and both *-ch* and *-tz* also fall into Hopkins’ “verb stems of undetermined class” category (see footnote 12); see Henderson, to appear-b on pluractionals in Mayan languages.

an intransitive stem makes it tempting to call it an “antipassive”. However, this misses part of the picture. As demonstrated in this section, *-w* is incompatible with derived transitives. This is expected under the view in which *-w* combines with an underspecified root and returns an agentive intransitive stem, but difficult to understand if the function of *-w* is to suppress an internal argument.

#### 4.2. Towards a typology of Chuj voices

In her detailed study of Chuj voice morphology, Buenrostro (2013) identifies several passive and antipassive morphemes (also discussed in Hopkins 1967; Domingo Pascual 2007), with some interesting differences in behavior. Though a full study of this morphology is beyond the scope of the present work, I identify some apparent patterns here. I focus on the form of these constructions; for more on when antipassives are used and their discursive function, see Buenrostro 2013 for Chuj and Polinsky, to appear for a cross-linguistic overview. In (48) I summarize six of the morphemes discussed in Buenrostro 2013, including the “incorporation antipassive” *-w*, grouped according to their distribution.

(48) CHUJ “VOICE” MORPHOLOGY

	Antipassives		Passives		<i>attaches to...</i>
a.	<i>-w</i>	“incorporation antipassive”	<i>-j/-x</i>	“impersonal passive”	root
b.	<i>-waj</i>	“absolute antipassive”	<i>-chaj</i>	“passive”	transitive stem
c.	<i>-an</i>	“absolute antipassive”	<i>-aj</i>	“passive”	derived transitive

I discuss the antipassives in section 4.2.1 and the passives in 4.2.2, where we will see that two generalizations emerge: (i) the root-attaching morphemes in the first row attach to various categories of roots while the forms in rows b–c are more selective; (ii) demoted arguments may be reintroduced via oblique phrases in absolute antipassives and passives (rows b–c), but not in the root-attaching forms (row a). I suggest that these properties are connected, and offer a sketch of an analysis in section 4.2.3.

##### 4.2.1. Antipassives

Recall from above that the “incorporation antipassive” *-w* attaches to nominal, positional, and transitive roots, resulting in an intransitive stem. As seen above and in (49a), bare non-referential “objects” may appear adjacent to the stem; the notional patient may not be a full DP (§3.2) and may also not be reintroduced as an oblique, as in (49b) (also discussed in Dayley 1981).

- (49) a. Ix-in-jaw-**w**-i           ixim.  
           PFV-B1S-grind-AG-IV corn  
           ‘I ground corn.’
- b. \*Ix-in-jax-w-i           t’a ixim.  
           PFV-B1S-grind-AG-IV PREP corn  
           inteded: ‘I ground corn.’

The forms in (49) contrast with what has been called the “absolute antipassive.” In the absolute antipassive, exemplified in (50), the suffix *-waj* attaches to a transitive root (I return below to the possibility that it is not an accident that *-waj* includes *-w*). The resulting stem is intransitive: the subject is marked with Set B morphology and appears with the status suffix *-i* when it is placed stem-finally. The patient or theme of the action is either omitted entirely, or expressed as an oblique phrase introduced by the preposition *t’a*. Unlike the *-w* discussed above, *-waj* attaches only to transitive roots.

- (50) a. Tz-tum-**waj** ix s-nun winh chi’ t’a hin.  
 IPFV-scold-AP CLF.FEM A3S-mother CLF DEM PREP B 1S  
 ‘His mother scolds me.’ (Buenrostro 2013, 239)
- b. Ix-mak’-**waj** ix Malin t’a waj Xun.  
 PFV-hit-AP CLF.FEM Maria PREP CLF.MASC Juan  
 ‘Maria did some hitting to John.’ (Dayley 1981, 36)

The suffix *-an* appears on derived transitives (with overt and null derivational morphology), with similar properties to the antipassives with *-waj*.<sup>14</sup>

- (51) a. Tz-in-el-k’-**an**-i.  
 IPFV-B 1S-steal-SUF-AP-I  
 ‘I steal.’
- b. Ix-onh-tz’ib-**an** t’a jun hu’um.  
 PFV-B 1P-write-AP PREP one paper  
 ‘We wrote on a paper.’

#### 4.2.2. Passives

Several morphemes have been identified as “passives” in Chuj.<sup>15</sup> The passive *-chaj* attaches to transitive roots and derives an intransitive stem. The single argument is the patient or theme, and the agent may be optionally expressed using a relational noun (here *-uj*), a common strategy in Mayan to introduce oblique arguments, as in (52b).

- (52) a. Jun winh unin chi’ ix-yam-**chaj**-i.  
 un CLF child DEM PFV-catch-PASS-IV  
 ‘The child was caught.’ (Buenrostro 2013, 113)
- b. Tz-b’o-**chaj** s-wa’el winh nhulej tik y-uj heb’ ix.  
 IPFV-make-PASS A3S-food CLF brother DEM A3S-RN.by PL CLF.FEM  
 ‘The brother’s food is made by them.’ (Buenrostro 2013, 202)

<sup>14</sup>A homophonous suffix also appears in Agent Focus constructions, as well as in embedded transitives (Coon and Carolan 2015); *-Vn* has been reconstructed as the Proto-Mayan Agent Focus marker (Smith-Stark 1978). I set aside any possible connections here, but see also Stiebels 2006 for formal similarities between antipassive and Agent Focus forms in other Mayan languages.

<sup>15</sup>I set aside here the *-b’il* identified as forming stative participles by Dayley 1981 and Buenrostro 2013.

Derived transitives form passives with the suffix *-aj*, as in (53). As with the *-chaj* passives, the resulting stems are intransitive and the agentive by-phrase may be introduced with a relational noun.

- (53) a. Ix-el-k'-**aj**                      santo y-uj                      waj Xun.  
 PFV-steal-SUF-PASS *santo* A3S-RN.by CLF Juan  
 'The *santo* was stolen by Juan.' (Buenrostro 2013, 204)
- b. Ix-way-m-it-**aj**                      ix                      nene.  
 PFV-sleep-SUF-CAUS-DIV CLF.FEM baby  
 'The baby was caused to sleep.'

Buenrostro (2013) describes *-ji* as an “impersonal passive”, listed by Domingo Pascual (2007, 181) as being in variation with *-xi*. I assume that these suffixes are morphologically complex, involving the status suffix *-i* (as with *-w-i*, the *-i* may not drop here due to phonological restrictions; §3.4). Buenrostro finds the impersonal passive attached to transitive roots and I have found at least one instance of *-x* attached to a positional root: *num* in (54b).

- (54) a. S-k'apak-il                      chi' tz-man-**j-i**.  
 A3S-cloth-NML DEM IPFV-buy-SUF-IV  
 'It's his cloth that is bought.' (Buenrostro 2013, 206)
- b. Ix-num-**x-i**                      ko-munlajel.  
 IPFV-stop-SUF-IV A1P-work  
 'Our work stopped.'

Buenrostro notes that these forms never occurred with agentive by-phrases in her corpus of naturally-occurring Chuj. In elicitation, she notes that an oblique phrase is possible, as in (55), but here the introduced argument is interpreted as a cause, rather than strictly as an agent.

- (55) Ix-in-b'o-**j-i**                      h-u'uj.  
 PFV-B1S-cure-SUF-IV A2S-RN.by  
 'I was cured by you.' (i.e. caused by you, as a result of you) (Buenrostro 2013, 207)

Though further work is needed here, the *-x/-j* “passive” shares parallels with the agentive *-w*: both attach to more than one type of root, and neither permit the “demoted” argument to be reintroduced with an oblique phrase.

On the other hand, the other four morphemes from frow b–c of (48) above, repeated in (56), attach only to transitives (root or derived), and permit the reintroduction of the oblique argument.

(56) CHUJ “VOICE” MORPHOLOGY

	Antipassives		Passives		attaches to...
a.	<i>-w</i>	“incorporation antipassive”	<i>-j/-x</i>	“impersonal passive”	root
b.	<i>-waj</i>	“absolute antipassive”	<i>-chaj</i>	“passive”	transitive stem
c.	<i>-an</i>	“absolute antipassive”	<i>-aj</i>	“passive”	derived transitive

Of course, the recurrent appearance of *-aj* in these forms—described in 2.3 as a suffix for derived intransitives—is noteworthy. In fact, in his detailed catalogue of stem-forming suffixes in Chuj, Hopkins 1967 lists neither a “passive” *-chaj* nor an “antipassive” *-waj*. Rather, *-ch* and *-w* receive their own (broad) entries, while the entry for *-aj* states: “derives intransitive verb stems from verb stems already derived in *-t, -ch, -k', -m, -n, -w* and *-l'*” (Hopkins 1967, 88; see also appendix A).

#### 4.2.3. Towards an analysis

I suggest that the root-attaching suffixes affect the valence and argument structural properties of the stem low in the structure. In the case of the root-attaching *-w*, I argued that this suffix introduces an agent but does not *demote* an internal argument. Incorporated objects are sisters to the root and do not require case; I suggest that they do not occupy the same position as full case-requiring objects. An analogous story might be told for the impersonal passives, which could be said to combine with a root and prevent an external argument from ever being introduced. Since no agent theta-role is assigned, an introduced oblique as in (55) may be interpreted as having any contextually plausible relation to the event derivable from the meaning of the relational noun, but is not restricted to an agentive interpretation.

Though I do not offer a full analysis of the forms in (56) rows b–c, one plausible analysis would be one in which the suffix *-aj* reflects the *existential binding* of the external or internal argument in passives and antipassives respectively. This could account for the fact that these morphemes attach only to transitives (in which both arguments are, in some sense, present in the derivation), as well as for the fact that the demoted arguments may be reintroduced via an oblique.

### 5. Summary and future work

In this paper I argued that not all apparent valence-altering morphology fits into a single category. While the description “antipassive” is in keeping with the fact that the suffix *-w* attaches to transitive roots and derives an intransitive stem, this label misses the bigger picture: *-w* attaches to a variety of semantically compatible roots (also nominal, positional, and at least one adjectival root). The resulting stem forms are all agentive intransitives with a single, absolutive-marked external argument. Rather than *altering* the valence of a root, we might then say that *-w* *specifies* the valence of a root. It does this in two ways: (i) it introduces the external argument (as in Kratzer 1996), and (ii) it does not assign inherent ergative case to the external argument. Since there is only a single licensing mechanism in these clauses (finite  $\text{Infl}^0$ ), the fact that *-w* doesn’t assign inherent case guarantees that a full (non-incorporated, case-requiring) internal argument is impossible.

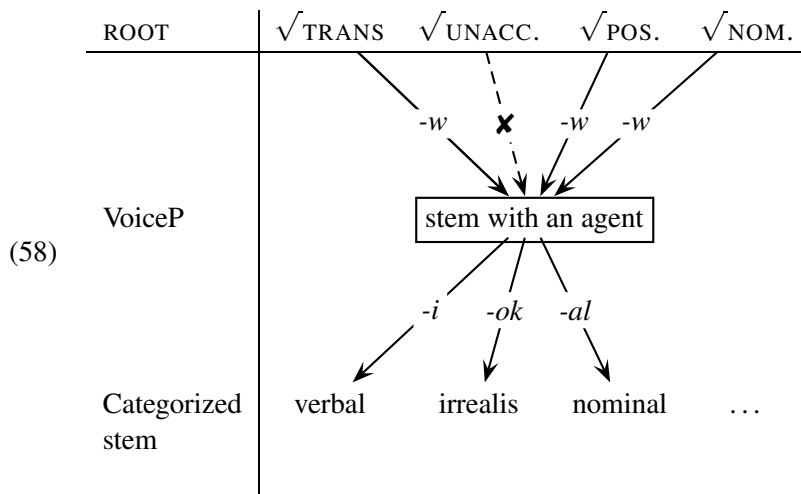
This work fits in line with a larger body of literature which takes roots to be not completely specified for their structural properties—rather, this is determined during the syntactic derivation (see e.g. Halle and Marantz 1993; Arad 2003; Borer 2005; Lois and Vapnarsky 2006; Lois 2011; Harley to appear, among many others). The ability for the transitive root to appear with an incorporated object lends support to proposals in which roots may combine with arguments, prior to categorization or further derivation (Harley

to appear). In these constructions the transitive root selects its complement; the fact that *-w* stems have reduced licensing possibilities ensures that the complement must be a bare nominal.

Note that once the ROOT-*w* stem is formed, there are still several options available. The derivation we concentrated above was the formation of intransitive verbal stems with the intransitive “status suffix” *-i* (represented above as occupying a  $v^0$  head). However, other options are possible. With the prospective aspect marker *ol* the stem appears instead with the irrealis *-ok*. Nominalizations may also be formed with the nominal suffix *-al*. Compare the forms in (57) with the transitive root *puk* ‘distribute’.<sup>16</sup>

- (57) a. Ix-in-**puk-w-i** tumin.  
 IPFV-B1S-distribute-SUF-IV money  
 ‘I distributed money.’
- b. Ol-ach-**puk-w-ok** tumin.  
 PROSP-B2S-distribute-SUF-IRR money  
 ‘You will distribute money.’
- c. Ol-och-ok **puk-w-al**.  
 PROSP-enter-IRR distribute-SUF-NML  
 ‘There will be a distribution.’

We are then left with the picture in (58). The suffix *-w* attaches to a variety of roots (but predictably, not to unaccusative roots; §3.3). The resulting stem may then combine with at least three different possible suffixes, as seen in (57).



This paper has focused on *-w*, though a number of other Chuj suffixes have been found along the way. In addition to providing evidence for the nature of roots, a moral

<sup>16</sup>Further work is needed to understand nominalizations like the one in (57), including whether an agent is introduced. There are other ways of forming nominalizations from transitive roots in Chuj, for example *puk-ol* ‘distribute-NML’ is also listed as ‘distribution.’ See also Coon and Carolan 2015 on Chuj nominalizations.





- Coon, J. and E. Carolan (2015). Nominalization and the structure of progressives in Chuj Mayan. Ms. McGill University.
- Coon, J., P. Mateo Pedro, and O. Preminger (2014). The role of case in A-bar extraction asymmetries: Evidence from Mayan. *Linguistic Variation* 14(2), 179–242.
- Coon, J. and O. Preminger (2009). Positional Roots and Case Absorption. In H. Avelino, J. Coon, and E. Norcliffe (Eds.), *New Perspectives in Mayan Linguistics: Proceedings of SSILA 2008 (The Society for the Study of Indigenous Languages of the Americas)*, pp. 35–58. Cambridge, MA: MIT Working Papers in Linguistics.
- Craig, C. G. (1979). The antipassive and Jacaltec. In L. Martin (Ed.), *Papers in Mayan Linguistics*, Volume 1, pp. 139–164. Lucas Brothers.
- Craig, C. G. (1986). Jacaltec noun classifiers. *Lingua* 70, 241–284.
- Danziger, E. (1996). Split intransitivity and active-inactive patterning in Mopan Mayan. *International Journal of American Linguistics* 62(4), 379–414.
- Day, C. (1973). *The Jacaltec Language*, Volume 12 of *Language Science Monographs*. Indiana University.
- Dayley, J. (1981). Voice and ergativity in Mayan languages. *Journal of Mayan Linguistics* 2, 3–82.
- Domingo Pascual, P. M. (2007). *Stz'olalil Stz'ib'chaj ti' Chuj / Gramática Normativa Chuj*. Academia de Lenguas Mayas de Guatemala.
- England, N. C. (2004). Adjectives in Mam. In R. Dixon and A. Y. Aikhenvald (Eds.), *Adjective classes: A cross-linguistic typology*, pp. 125–146. Oxford: Oxford University Press.
- Gutiérrez Sánchez, P. (2004). Las clases de verbos intransitivos y el alineamiento agentivo en el chol de Tila, Chiapas. M.A. thesis, CIESAS, México.
- Halle, M. and A. Marantz (1993). Distributed Morphology and the Pieces of Inflection. In K. Hale and S. J. Keyser (Eds.), *The View from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, pp. 111–176. Cambridge, MA: MIT Press.
- Harley, H. (to appear). On the identity of roots. *Theoretical Linguistics*.
- Haviland, J. B. (1994). “Te xa setel xulem” [The buzzards were circling] – Categories of verbal roots in (Zinacantec) Tzotzil. *Linguistics* 32(4–5), 691–741.
- Henderson, R. (2012). Morphological alternations at the intonational phrase edge: The case of K'ichee'. *Natural Language and Linguistic Theory* 30(3), 741–787.
- Henderson, R. (to appear-a). Mayan semantics. *Language and Linguistic Compass*.
- Henderson, R. (to appear-b). Pluractionality in Mayan. In J. Aissen, N. England, and R. Zavala (Eds.), *The Mayan Languages*. London: Routledge.
- Hopkins, N. (1967). *The Chuj Language*. Ph. D. thesis, University of Chicago, Chicago, IL.
- Hopkins, N. (2012). *A Dictionary of the Chuj Mayan Language*. Tallahassee, FL: Jaguar Tours.
- Kratzer, A. (1996). Severing the external argument from its verb. In J. Rooryck and L. Zaring (Eds.), *Phrase Structure and the Lexicon*, pp. 109–137. Dordrecht: Kluwer Academic Publishers.

- Legate, J. A. (2008). Morphological and Abstract Case. *Linguistic Inquiry* 39(1), 55–101.
- Lois, X. (2011). Roots and patterns in Yucatecan languages. In K. Shklovsky, P. Mateo Pedro, and J. Coon (Eds.), *Proceedings of FAMLi: Formal Approaches to Mayan Linguistics*. Cambridge, MA: MIT Working Papers in Linguistics.
- Lois, X. and V. Vapnarsky (2006). Root indeterminacy and polyvalence in Yucatecan Mayan languages. In X. Lois and V. Vapnarsky (Eds.), *Lexical Categories and root classes in Amerindian languages*, pp. 69–115. Bern: Peter Lang.
- Martínez Cruz, V. (2007). Los adjetivos y conceptos de propiedad en chol. Master's thesis, CIESAS, México.
- Massam, D. (2001). Pseudo Noun Incorporation in Niuean. *Natural Language and Linguistic Theory* 19(1), 153–197.
- Mateo Pedro, P. (2011). The acquisition of unaccusativity in Q'anjob'al Maya. Ms. Harvard University.
- Maxwell, J. M. (1976). Chuj intransitives: Or when can an intransitive verb take an object? *Journal of Mayan Linguistics* 1, 128–140.
- Pascual, A. F. (2007). Transitividad y dependencia sintáctica y discursiva en Q'anjob'al. Master's thesis, CIESAS, México.
- Perlmutter, D. M. (1978). Impersonal passives and the Unaccusative Hypothesis. In *Proceedings of the 4<sup>th</sup> Annual Meeting of the Berkeley Linguistics Society (BLS 4)*, Berkeley, CA, pp. 157–189. University of California at Berkeley.
- Polinsky, M. (to appear). Antipassives. In J. Coon, D. Massam, and L. Travis (Eds.), *The Oxford Handbook of Ergativity*. Oxford University Press.
- Radkevich, N. (2011). On locality in contextual allomorphy: Evidence from Mayan. *NELS* 42.
- Smith-Stark, T. (1978). The mayan antipassive: Some facts and fictions. In N. England (Ed.), *Papers in Mayan Linguistics*, pp. 169–187. The Curators of the University of Missouri.
- Stiebels, B. (2006). Agent focus in Mayan languages. *Natural Language and Linguistic Theory* 24(2), 501–570.
- Vázquez Álvarez, J. J. (2011). *A Grammar of Chol, a Mayan Language*. Ph. D. thesis, University of Texas Austin, Austin, TX.
- Woolford, E. (1997). Four-Way Case Systems: Ergative, Nominative, Objective and Accusative. *Natural Language and Linguistic Theory* 15(1), 181–227.
- Zavala, R. (2000). Multiple classifier systems in Akatek (Mayan). In G. Senft (Ed.), *Systems of Nominal Classification*, pp. 114–146. Cambridge, UK: Cambridge University Press.

## A. Root consonants

### (60) CVC-C

-C	attaches to	forms	further possibilities
-w	TV, POS, N	intransitive stem (unerg)	-i
-x	TV, POS	intransitive stem (pass)	-i
-j	TV	intransitive stem (pass)	-i
-k'	POS, ADJ	stem	-aj-i
-n	TV, POS	stem	-aj-i, -ax-i
-ch	TV	stem	-it-ej; -aj-i
-m	TV	stem	-it-ej; -aj-i
-l	TV	stem	-it-ej; -aj-i
-tz	IV, POS	stem	-it-ej; -aj-i

- (61) a. Ix-ach-tel-w-i.  
PFV-B2S-lying-SUF-IV  
'You fell.'
- b. PASSIVE  
Ix-in-jal-x-i.  
PFV-B1S-tie-SUF-IV  
'I was tied up.' (Domingo Pascual 2007, 181)
- c. "IMPERSONAL PASSIVE"  
S-k'apak-il chi' tz-man-j-i.  
A3S-cloth-NML DEM IPFV-buy-SUF-IV  
'It's his cloth that one buys.' (Buenrostro 2013, 206)
- d. Tz-onh-lach'-k'-aj-i.  
IPFV-B1P-flat-SUF-DIV-IV  
'We are flattened out.' (Hopkins 2012, 172)
- e. Tz-in-nup-n-aj-i.  
IPFV-B1S-marry-SUF-DIV-I  
'I get married.' (Hopkins 2012, 214)
- f. Ix-in-nhik'-ch-it-ej hu'um.  
PFV-A1S-tear-SUF-PLUR-DTV paper  
'I tore up paper by successively ripping it.' (Hopkins 2012, 220)
- g. "PASSIVE"  
Niwan ixim wa'il tz-mol-ch-aj-i.  
many CLF tortilla IPFV-gather-SUF-DIV-IV  
'Many tortillas are gathered.' (Buenrostro 2013, 202)
- h. Ix-k'ex-m-aj-i.  
PFV-change-SUF-DIV-IV  
'It's been changed.' (Hopkins 2012, 155)

- i. S-tz'ey-l-aj-i                      hin-k'ab'.  
IPFV-turn.on.side-SUF-DIV-IV A1S-hand  
'My hand turns sideways.'                      (Hopkins 2012, 363)
- j. Tz-in-mel-tz-it-ej.  
IPFV-B1S-small.round-SUF-PLUR-DTV  
'I turn it around.'                      (Hopkins 2012, 197)

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