

Are verbs ‘verbable’ in Hiaki? The Hiaki ability passive

Noah Nelson, University of Arizona

Heidi Harley, University of Arizona

Maria Florez Leyva

Santos Leyva Álvarez

Abstract: This chapter presents an analysis of the “ability passive” in Hiaki, a Uto-Aztecan language spoken in Sonora, Mexico and Arizona, United States, providing a first account of such a construction in Uto-Aztecan. In this construction, an independent ability modifier co-occurs with a verb that is suffixed with a verbalizer, one that does not attach to verbal stems in other contexts. Crucially, this construction results in passive-like effects on the argument structure of the internal verb. We propose that the ability modal realizes an adjectivizing phrase that intervenes between the verb stem and the verbalizer. This analysis relates the present construction to similar ability adjectives in a number of languages (e.g., English ‘doable’, ‘learnable’) that involve a deverbal adjectival “passive.”

Keywords: Hiaki (Yaqui, Yoeme), deverbal adjectives, passives, ability

Acknowledgments: We would like to thank Alex Trueman and the rest of the Hiaki Working Linguistics Group, who have been sounding boards for many of these ideas. We would also like to thank Andy Wedel, Michael Hammond, Simin Karimi, and a number of reviewers for feedback, questions, comments, and critiques on an earlier version of this chapter. This work was supported by NSF grant BCS-1528295 to Heidi Harley.

1 Introduction

In this paper, we document and provide an analysis of what we refer to as the “ability passive” in Hiaki (alt. Yaqui or Yoeme), a language of the Taracahitic branch of Southern Uto-Aztecan. In this construction, an independent ability modal co-occurs with a verb suffixed with a verbalizer that does not attach to verbal stems in other contexts. Like similar deverbal ability constructions in a number of languages (e.g., English *doable* or *learnable*), this Hiaki construction involves passive-like changes to the argument structure of the base verb, adding to a growing literature on argument structure effects of deverbal constructions of ability or

potentiality cross-linguistically (see, e.g., Aronoff 1976; Kratzer 1981; Kayne 1984; Cinque 1990; Nevins 2002; Artiagoitia 2003; McGinnis 2010; Oltra-Massuet 2010, 2014; Wood & Sigurðsson 2014; Moreira 2015; Anagnostopoulou & Samioti 2014). Unlike in these other languages, however, the final product of the Hiaki construction is verbal rather than adjectival. For this reason, we refer to this construction as the Hiaki “ability passive,” in contrast to such terms as “ability adjectives” or “adjectival passives.”

The construction in question provides *prima facie* evidence of the Hiaki category-changing suffix *-tu* attaching to verbal stems, something that does not occur in other contexts. We present an analysis of this construction that situates it in the larger context of similar constructions cross-linguistically while unifying this occurrence of *-tu* with the typical account of the Hiaki verbalizer as a denominalizing or deadjectivizing suffix.

The Hiaki ability construction involves the ability modal *aa* ‘to be able to’ / ‘to know how to’ and a verb that appears suffixed with the verbalizer *-tu*, as shown in (1)¹:

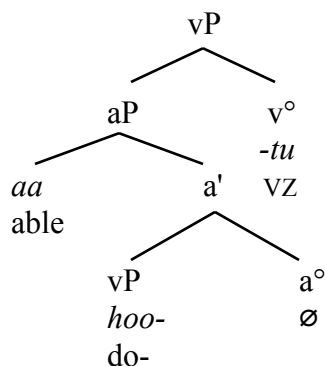
- (1) *Aa hootu.* (Dedrick & Casad 1999: 142 [51])
 aa hoo-tu
 able do-VZ
 ‘It can be done.’

We propose that the ability modal *aa* is located in the specifier of an adjectivizing aP with scope over the verbal stem (which is in fact a potentially internally complex vP)². This aP is subsequently reverbalized by *-tu*. This proposal holds that *-tu* is doing its normal job, in this case as a deadjectivizing verbalizer. The analysis is represented in (2):

¹ Glosses have been added or minimally modified from original sources for clarity and consistency, except where otherwise noted (for a list of abbreviations, see Appendix C). Translations have not been altered.

² We assume a syntactic theory of word formation in which category-determining heads (e.g., little a°, v°, n°, etc.) are employed in the syntax to derive words of particular categories, but we do not wish to suggest that such a position is *a priori* necessary to account for the ability passive. See section 4.1 for more on our theoretical assumptions.

- (2) aa hoo-tu
 able do-vZ



This analysis shares properties with related analyses for a variety of languages (including Germanic, Romance, and Hellenic languages in Indo-European, as well as Japanese and Basque; see Moreira 2015 for a comprehensive list), contributing to a growing literature on passive-like ability adjectivals and providing a first account of such constructions in Uto-Aztecan. In addition, this analysis maintains a unified account of the verbalizer *-tu* as a strictly denominalizing or deadjectivizing suffix by suggesting that the vP stem is first adjectivized by an aP phase prior to subsequent verbalization under *-tu*.

The present paper takes the following course. First, we present some relevant background on the Hiaki language, including the basic facts about the ability modal *aa* and the verbalizer *-tu* (section 2). Next, we present a description of the Hiaki ability passive based on elicitation data provided by the third and fourth authors (section 3). We then provide and justify an analysis of the Hiaki ability passive and situate it within the larger literature on ability adjectivals and morphosyntactic theory (section 4). Finally, we provide some concluding remarks and notes on future directions (section 5).

2 Background

Hiaki is a Southern Uto-Aztecan language of the Taracahitic branch spoken in Sonora, Mexico and Arizona, United States (see Appendices A and B for diagrams of the language family). Hiaki is an agglutinating head-final language. It has SOV word order, postpositions, and an abundance of derivational, inflectional, and relativizing suffixes. This agglutinating suffix structure is particularly rich in derivation, where forms can be subjected to multiple rounds of

category-changing suffixes, as seen in (3), where the stem *ro'i* ‘cripple’ is verbalized, participialized, and then verbalized again before being relativized:

- (3) *ro'itulaatuka'u* (Dedrick & Casad 1999: 141 [44])
 ro'i-tu-laa-tu-ka-'u
 cripple-VZ-PPL-VZ-PFV-O.REL
 ‘One who had been crippled.’

Exceptions to this agglutinating, generally head-final pattern are limited, including reduplication³, which is prefixal, and determiners, which occur at the left edge of a DP.

It should also be briefly noted that Hiaki words often have separate stem forms that appear in compounding and inside derivational and some other ‘low’ suffixation (Harley and Tubino Blanco 2013). Examples of Hiaki stem forms are found in (4). Corresponding free forms and their translations appear to the right; both stem form and free form are bolded for ease of reference:

- (4) a. **taa**-tachiria cf. **taa'a** *n.* ‘sun’ (Molina et al. 1999)
 sun-firelight
 ‘sunlight’
- b. va-**hi'i**-tua cf. **he'e** *tv.* ‘drink’
 water-drink.TR-CAUS
 ‘give (someone) a drink of water.’
- c. **uva'a**-la cf. **uva** *iv.* ‘bathe’
 bathe.INTR-PPL
 ‘bathed.’

These stem forms are often shorter than their free-form counterparts (4a), but need not be so, sometimes involving changes to vowel or consonant quality instead (4b), or including an extra ‘echo vowel,’⁴ which includes a glottal stop and a copy of the preceding vowel (4c).

We now turn to a brief description of the ability modal *aa* in section 2.1, and the verbalizer *-tu* in section 2.2, which, together with a transitive verbal predicate, comprise the Hiaki ability construction.

³ Reduplication in Hiaki is used to mark habitual, progressive, or iterative aspect on verbs (among other things; see Harley & Leyva 2009) and plural number on some adjectives and nouns (ibid, footnote 6). Other aspects (e.g, perfective), as well as number marking on many adjectives and nouns, are realized as suffixes, not prefixes. This suggests that prefixation is a property of the reduplication process, not of particular heads in Hiaki more generally.

⁴ Dedrick and Casad (1999: 28) attribute the term ‘echo vowel’ to Maurice Swadesh.

2.1 The ability modal *aa*

Dedrick and Casad (1999: 365) describe the Hiaki ability modal *aa* as a “phonologically reduced form of the main verb [*aawe*].” This main verb has a meaning approximating ‘to be able to’ or ‘to know how to,’ and occurs at the end of a basic Hiaki clause, like other main verbs in the language, as illustrated in (5):

- (5) *Nehpo aawe.* (Dedrick & Casad 1999: 365 [2])
 nehpo aawe
 1.SG.NOM know_how
 ‘I know how to do it.’

Aawe often involves a semantically implied complement, as in (5) above, or an explicit indirect object as complement, as in (6):

- (6) *Inepo au aawe...* (Dedrick & Casad 1999: 365 [3])
 inepo a-u aawe
 1.SG.NOM 3.SG.ACC-to know_how
 ‘I can do that...’

The main verb *aawe* can also take various verbal suffixes, like other verbs of Hiaki. This is illustrated in example (7) with the verbal suffix *-le* (which is subsequently inflected for irrealis) and with the participial suffix *-kai*:

- (7) *...senu ket au aawelene, kaa huni'i aawekai.* (Dedrick & Casad 1999: 365 [3])
 senu ket a-u aawe-le-ne, kaa huni'i aawe-kai
 one also 3.SG.ACC-to know_how-think-IRR NEG even know_how-PPL
 ‘...A person might think that he could do it when he really could not do it at all.’

In contrast to the main verb *aawe*, the modal *aa* does not behave like a verb in Hiaki. The position of the ability modal *aa* in the syntax is typically toward the leftward edge of the vP, interspersed with direct objects, adverbial PPs and other adverbials, illustrated in (8a-e). This position is typical of adverbials, PPs, or NPs in Hiaki syntax, rather than VPs. This adverbial syntactic position may be due to the etymology of *aa*, which Dedrick and Casad (1999: 365) note may have originated as “an adverbial meaning ‘well’ in a typological parallel to Cora,” and possibly Tohono O’odham as well (citing Eloise Jelenik, p.c.).⁵ For these reasons, we treat *aa* as an adverbial modifier.

⁵ As both Cora and Tohono O’odham are Southern Uto-Aztecan languages like Hiaki, this seems a plausible hypothesis. Indeed, Álvarez and Muchembled (2015) take this etymology as a given for the full Hiaki verb *aawe*, from which the modal *aa* is allegedly derived.

- (8) a. *...ta am tu'isi aa kakava'e.* (Dedrick & Casad 1999: 366 [10])
 ta=am tu'i-si aa ka-kava-'e
 but=3.PL.NOM good-ADVZ able EMPH_(RED)-horse-VZ
 '...but they were expert riders.'
- b. *Haisa aapo ketun aa hi'ibwa?*⁶
 haisa aapo ketun aa hi'ibwa
 Q 3.SG.NOM still able eat.INTR
 'Can she still eat?'
- c. *Santos aa avo weye.*
 Santos aa avo weye
 Santos able here come
 'Santos can come here.' (e.g., to a party)
- d. *Maria kaa aa laventa hiutua.*
 Maria kaa aa laven-ta hiu-tua
 Maria NEG able violin-ACC sound-CAUS
 'Maria can't play the violin.'
- e. *Uu maromeo aa mesat ye'e.*
 uu maromeo aa mesa-t ye'e
 the acrobat able table-on dance
 'The acrobat is able to dance on a table.'

This position differentiates *aa* from auxiliaries, light verbs, other modals, and verb/affix hybrids in Hiaki (Tubino Blanco et al. 2009, 2012), which suffix onto the main verb as seen in (9):

- (9) a. *kiksime* (Harley & Leyva 2009: 246 [10])
 kik-sime
 stand.SG-go.SG
 'go along standing up.'
- b. *vitta'a* (Dedrick and Casad 1999: 160 [29])
 vit-ta'a
 see-know
 'know by sight.'

⁶ Unless otherwise noted, Hiaki data are from the third and fourth authors, both fluent speakers of Hiaki. The third author is from Tucson, Arizona, and speaks the Arizona dialect of Hiaki, as well as English and Spanish. The fourth author is from Sonora, and speaks the Sonora dialect of Hiaki as well as Spanish. Both authors have agreed on the acceptability of these data.

- c. *kaa haitimachi* (Molina et al. 1999)
 kaa haiti-machi
 NEG dirty-MOD_{EPI}
 ‘be pure, clean.’
- d. *Empo ama bwikmachi*
 empo ama bwik-machi
 2SG.NOM there sing-MOD_{DEO}
 ‘You should sing there.’
- e. *Hunume uusim wamehela yeu'ean*
 hunu-me uusi-m wa-me-hela yeu'-ean
 that-PL child-PL that.DIST-PL-near dance-MOD_{DEO}
 ‘Those children should play over there.’

In addition, the ability modifier *aa* does not receive direct inflection of any kind. Its verbal complement is inflected instead, as illustrated in (10):

- (10) *Nee aa aa hoan.* (Dedrick & Casad 1999: 366 [5])
 nee aa aa=hoa-n
 1.SG.NOM able 3.SG.ACC=do-PST(IMPFV)
 ‘I was able to do it.’

Despite not being inflected itself, *aa* nonetheless imposes restrictions on the type of inflection that the complement verb can bear. We see this demonstrated in (11), where the verb co-occurring with *aa* cannot be inflected for perfective aspect (11d), but can be inflected for imperfective aspects. Furthermore, in (11e) we see that this restriction is dependent on the presence of the ability modifier *aa*:

- (11) a. *Inepo aa usita anía.*
 inepo aa usi-ta anía
 1.SG.NOM able child-ACC help
 ‘I can help the child.’
- b. *Noé hiva aa haiki uusim a'anía.*
 Noé hiva aa haiki uusim a'-anía
 Noah always able many child-PL HAB_(RED)-help
 ‘Noah can always help many children.’

- c. *Waiwasuktiachi inepo aa am anían, hunume uusim.*
 waiwasuktiachi⁷ inepo aa am=anía-n hunu-me uusi-m
 last_year 1.SG.NOM able 3.PL.ACC=help-PST(IMPFV) that-PL child-PL
 ‘Last year, I was able to help those children.’
- d. * waiwasuktiachi inepo aa am=anía-k hunu-me uusi-m
 last_year 1.SG.NOM able 3.PL.ACC=help-PFV that-PL child-PL
 INTENDED: ‘Last year, I managed to help those children.’
- e. *Waiwasuktiachi inepo am aníak, hunume uusim.*
 waiwasuktiachi inepo am=anía-k hunu-me uusi-m
 last_year 1.SG.NOM 3.PL.ACC=help-PFV that-PL child-PL
 ‘Last year, I helped those children.’

This conflict between the ability modifier *aa* and the perfective aspect may be explained in terms of the modal interpretation of *aa* producing a stative predicate, which is incompatible with the perfective suffix. This introduction of stative aspect, or incompatibility with perfective aspect, is a property that may be shared with many ability modals and affixes cross-linguistically (see, e.g., Oltra-Massuet 2010, 2014; Wood & Sigurðsson 2014; Moreira 2015; see section 5 below for further discussion).

Further, *aa* itself is incompatible with stative verbs⁸, such as *allea* ‘be happy’ or ‘be well’, as seen in (12):

- (12) *inepo aa allea
 1.SG.NOM able be_happy
 INTENDED: ‘I am able to be happy.’

Consistent with this aspectual restriction on the complement of the adverbial modifier *aa*, *aa* also cannot take adjectives as complements, as illustrated in (13):

- (13) *i-me koowi-m aa bweere
 this.PL pig-PL able big.PL
 INTENDED: e.g., ‘These pigs can be big.’

⁷ The form *waiwasuktiachi* is morphologically complex (minimally: *wai-wasuktia-chi*, previous-year-LOC ‘(during) last year’), but that complexity is not important here.

⁸ The ability modifier *aa* can co-occur with a stative verb, *provided* that the verb has undergone derivation and is no longer stative, e.g., as a performative:

Inepo aa alleamtavenasi ta ne in takaapo kaa allea.
 inepo aa allea-m-ta-venasi ta=ne in takaapo kaa allea
 1.SG.NOM able be_well-S.REL-ACC-resemble but=1.SG.NOM 1.SG.GEN body-in NEG be_well
 ‘I can be/act as one who appears well, but my body is not well.’

Finally, it is important to note that the Hiaki ability modifier *aa* does not affect the argument structure of the verb it takes as complement. The first person subject in (10), repeated here as (14a), is the same as it would be in the corresponding ability-free sentence (14b):

- (14) a. *Nee aa aa hoan.* (Dedrick & Casad 1999: 366 [5])
 nee aa aa=hoa-n
 1.SG.NOM able 3.SG.ACC=do-PST(IMPV)
 ‘I was able to do it.’
- b. *Nee aa hoan.*
 nee aa=hoa-n
 1.SG.NOM 3.SG.ACC=do-PST(IMPV)
 ‘I was doing it.’

As we shall see, the Hiaki ability passive formed from *aa* and *-tu* does have a passivizing effect on the argument structure of the verb it selects for. The data in (14) demonstrate that *aa* alone cannot be responsible for these effects. We now turn to a brief description of the other component of this construction, the verbalizer *-tu*.

2.2 The verbalizer *-tu*

The *-tu* suffix is described as productively deriving a verb from nominal or adjectival stems⁹ (e.g., Escalante 1990; Dedrick & Casad 1999: 139; Estrada Fernández 2000).

Crucially, *-tu* does not appear to derive one class of verb from another. One common context in which this suffix appears is on non-verbal predicates with tense/aspect/mood inflection, where the *-tu* verbalizer may be serving as a morphosyntactic repair for the licensing of verbal inflection on the non-verbal predicate. Compare the bare present tense nominal and adjectival predicates of (15) to the inflected forms of (16), which are suffixed with *-tu*:

- (15) a. *Inepo ya'ut.* (Estrada Fernández 2000: 147 [75])
 inepo ya'ut
 1.SG.NOM leader
 ‘I am leader.’

⁹ Dedrick and Casad (1999: 141) also note instances in which *-tu* appears to occur on adverb-like stems, but these appear to be limited and unproductive, possibly representing lexicalized forms.

- b. *Uu sewa si tutu'uli.*
 uu sewa si tutu'uli
 the.SG.NOM flower very pretty
 'The flower is very pretty.'
- (16) a. *Inepo ya'uttukan.* (Estrada Fernández 2000: 147 [76])
 inepo ya'ut-tu-kan
 1.SG.NOM leader-VZ-PST.PFV
 'I was leader.'
- b. *Inepo ya'uttuvae.* (Estrada Fernández 2000: 147 [78])
 inepo ya'ut-tu-vae
 1.SG.NOM leader-VZ-PROS
 'I will be a leader.'¹⁰
- c. *Uu sewa tutu'ulitukan.* (Sanchez et al. 2014: 113 [17])
 uu sewa tutu'uli-tu-kan
 the.SG.NOM flower pretty-VZ-PST.PFV
 'The flower was very pretty.'

These data suggest that *-tu* is a copular suffix that converts nominal and adjectival predicates into verbs for the purpose of affixing tense/aspect/mood inflection¹¹. Indeed, Harley et al. (2012) use the addition of *-tu* in inflected contexts as a diagnostic for a non-verbal predicate stem, emphasizing the typical distribution of this morpheme on nominal and adjectival stems. Note further that the subjects of the sentences in (15) are the same as those in (16), demonstrating that *-tu*, like *aa*, does not affect the argument structure of the predicates it attaches to on its own.

In addition to serving as a copular verbalizer, the suffix *-tu* in Hiaki can occur word-finally, without any overt verbal inflection as shown in (17):

¹⁰ We have preserved the translation presented by Estrada Fernández (2000), but to reflect the contribution of the prospective marker *-vae* 'going to,' this sentence might be better translated as "I am going to be a leader." Note that Hiaki also has an irrealis marker *-ne* used in true future tense contexts that would more closely match the given translation.

¹¹ The presence of verbal inflection on a nominal stem *without -tu* is possible, but in such a case the nominal is not interpreted predicatively. Affixing directly onto a nominal results instead in a derived verb of possession. See Escalante (1990) and Jelinek (1998) for examples and discussion, among others.

- (17) a. *Aapo maehtotu.* (Estrada Fernández 2000: 148 [82])
 aapo maehto-tu
 3.SG.NOM teacher-VZ
 ‘He is being made a teacher (while he is receiving his diploma).’¹²
- b. *ko'oko'itu* (Molina et al. 1999)
 ko'oko'i-tu
 chile_pepper-VZ
 ‘become hot from chiles’ (cf. ko'oko'i n. chile, pepper)
- c. *Inepo ya'uttu.*
 inepo ya'ut-tu
 1.SG.NOM leader-VZ
 ‘I am becoming a leader.’

Note that the interpretation of (17c) contrasts with the simple present tense interpretation of the nominal predicate in (15a), suggesting that here *-tu* is adding meaning of its own. Dedrick and Casad (1999: 139) consider this meaning to most often indicate a change of state, and in our own data *-tu* is often translated as “become.”¹³ Generally, however, *-tu* is semantically bleached, serving a primarily grammatical function (though see section 4.6 for other cases of *-tu* with inceptive readings).

Whatever its semantics, *-tu* cannot normally affix to verbal stems, as illustrated in (18):

- (18) a. *Inepo hunume muunim bwase.*
 inepo hunu-me muuni-m bwase
 1SG.NOM that-PL bean-PL cook.TR
 ‘I am cooking those beans.’
- b. * inepo hunu-me muuni-m bwasa'a-tu
 1SG.NOM that-PL bean-PL cook.TR-VZ
 INTENDED: e.g., ‘I am cooking those beans.’
- c. * hunu-me muuni-m bwasa'a-tu
 that-PL bean-PL cook.TR-VZ
 INTENDED: e.g., ‘Those beans are being cooked.’

¹² Again, we keep the translation given in the source, but because Hiaki has overt causative and passive morphology, neither of which are present in (17a), ‘He is becoming a teacher’ is probably a more exact translation.

¹³ Translations from other work suggest that the interpretation of *-tu* may at times be more complex. For example, Escalante (1990: 30 [23]) translates *aapo ya'ut-tu* as ‘he is acting as leader.’

These sentences demonstrate the ungrammaticality that results from suffixation of a verbal stem with *-tu*. In (18a), we find a grammatical sentence with the verb *bwase* (stem form *bwasa'a-*) ‘to cook (tr.)’. If we suffix the verb with the verbalizer *-tu*, the result is ungrammatical, with or without passive syntax, as demonstrated by (18b-c).¹⁴

These data are typical of the fact that *-tu* does not suffix onto verbal stems under normal circumstances; this makes language-internal sense, as there is presumably little need to verbalize a verb. However, as we have already noted, the Hiaki ability passive does apparently involve suffixation of *-tu* to a verbal stem, with or without further inflection. In the following section we outline an analysis of the Hiaki ability passive that proposes that *-tu* is most likely suffixing onto an adjectivized aP with scope over the verb stem, thus preserving a unified account of *-tu* as a verbalizer that does not attach to verbal stems.

3 The Hiaki ability passive

Despite the apparent prohibition against *-tu* attaching to verbal stems, the Hiaki ability passive involves the free modifier *aa* ‘be able to’ or ‘know how to’ and an instance of *-tu* that appears linearly adjacent to a verbal stem:

- (19) a. *Aa hootu.* (Dedrick and Casad 1999: 142 [51])
 aa hoo-tu
 able do-VZ
 ‘(It) can be done.’
- b. *Hunaa'a uusi aa sautu.* (ibid. [54])
 hunaa'a uusi aa sau-tu
 that.NOM child.NOM able command-VZ
 ‘That boy is obedient.’ [lit.: can be commanded]
- c. *Merehilda aa tu'ulitu.*
 Merehilda aa tu'uli-tu
 Merehilda.NOM able like-VZ
 ‘Merehilda is someone you can warm up to.’ [lit.: is likeable]

¹⁴ These results hold with or without further inflectional suffixation. They also hold for comparable sentences using the intransitive form of the verb, *bwasa* ‘to cook (intr.)’.

- c. *Hunume muunim aa bwasa'atu*
 hunu-me muuni-m aa bwasa'a-tu
 that-PL bean-PL able cook.TR-VZ
 ‘Those beans can be cooked.’

Two primary observations guide the present analysis. The first observation is that, in this construction, the internal argument is promoted to subject position as in passives, an effect that neither the modal *aa* nor the suffix *-tu* produce independently, suggesting a conspiracy between these two elements of the construction. The second observation is that the Hiaki ability passive presents a prima facie case of *-tu* attaching to verbs, which it does not otherwise do. The following sections address these two observations in turn.

3.1 Promotion of the internal argument to subject position

The Hiaki ability construction involves promotion of the internal argument of a transitive verb to subject position, as in passives. This is illustrated in (20), where the active, passive, and ability passive in Hiaki are directly compared:

- (20) a. Active voice
Aapo uka mansanata bwa'e.
 aapo uka mansana-ta bwa'e
 3.SG.NOM the.SG.ACC apple-ACC eat.TR
 ‘(S)he is eating the apple.’
- b. Passive voice
Hunuu mansana bwa'awa.
 hunuu mansana bwa'a-wa
 that.NOM apple.NOM eat.TR-PASS
 ‘That apple is being eaten.’
- c. *aapo bwa'a-wa
 3.SG.NOM eat.TR-PASS
 INTENDED¹⁵: ‘(S)he is eating (something).’
- d. Ability passive
Hunuu mansana aa bwa'atu.
 hunuu mansana aa bwa'a-tu
 that.NOM apple.NOM able eat.TR-VZ
 ‘That apple is edible.’ (e.g., not rotten)

¹⁵ Note that this string *is grammatical* on the a different, rather infelicitous, interpretation “(S)he is being eaten,” where the animate subject pronoun *aapo* refers to a human being that serves as the theme of the transitive verb *bwa'e* ‘eat.’

- e. *aapo aa bwa'a-tu
 3.SG able eat.TR-VZ
 INTENDED¹⁶: '(S)he is someone who can eat.'

Notice that it is necessarily the internal argument of the main verb that appears as subject in both the standard passive (20b) and ability passive (20d), not the external argument of the active voice clause (20c,e). This is evidenced by the fact that the internal argument, which is marked with accusative case in the corresponding active transitive sentence (20a), surfaces in the nominative (unmarked) case in both the standard passive (20b) and the ability passive (20d).¹⁷

Further evidence that this argument is, in fact, a subject comes from the relativization of the ability construction. Hiaki has two distinct relativizing suffixes marking subject relatives and object relatives, respectively. The subject relativizer appears as the verbal suffix *-me*, as evidenced in (21):

- (21) *Uu usita mahtame* (Harley 2015: 10 [28b])
 uu uusi-ta mahtame
 the.SG.NOM child-ACC teach-S.REL
 'The one who is teaching the child'

Note that the relative is understood to refer to the subject of the embedded verb (in this case, the agent). If the internal argument of the embedded verb is indeed promoted to subject in the ability

¹⁶ Again, this string also can be understood as the grammatical, but infelicitous, "(S)he is edible."

¹⁷ One difference between the ability passive and the regular passive is that the former requires an eventive verbal complement—there are no 'ability' constructions selecting for stative verbs, no doubt due to the semantics of ability modals generally, and consistent with the incompatibility of *aa* with stative predicates illustrated in (12) and (13) above. The regular passive *-wa* is, however, grammatical with stative predicates:

- (i) *Norwaypo si alleewa.*
 Norway-po si allee-wa
 Norway-in very be_happy-PASS
 'In Norway (people are) very happy.'

This dynamicity requirement for ability passivization involves pure eventiveness, not agentivity; the ability passive is perfectly compatible with an eventive but non-agentive transitive predicate like *maveta* (stem form *mavet-*) 'receive':

- (ii) *Ian ala hiosiam aa mavettu.*
 Ian ala hiosia-m aa mavet-tu
 now now letter-PL able receive-VZ
 'Now (finally) letters can be received.' (e.g., upon the end of a postal worker strike)

passive, then relativization of the ability passive with *-me* should be understood to refer to that argument. This is indeed the case, as evidenced in (22):

- (22) a. *Ume aa bwa'atume sakovaim si kia.*
 u-me aa bwa'a-tu-me sakovai-m si kia
 the-PL able eat.TR-VZ-S.REL melon-PL very delicious
 'The melons that are edible are very delicious.'
- b. *Kaupo huevenaka aayuk aa bwa'atume.*
 kau-po huevenaka aayuk aa bwa'a-tu-me
 mountains-in many exist able eat.TR-VZ-S.REL
 'In the mountains, there are many things that are edible.'

The key observation is that the theme of the embedded verb is the understood referent of the subject relative, demonstrating, along with the assignment of nominative case as illustrated in (20), that the theme argument is promoted to subject in the Hiaki ability passive.

3.2 Linear attachment of *-tu* to a verbal stem

Although the Hiaki verbalizer *-tu* does not normally appear on verbal stems (as noted in section 2.2. above), in the ability passive *-tu* does appear to be suffixed onto a verbal stem. The ungrammaticality of **V-tu* was demonstrated in (18b-c) above, repeated here as (23a-b), alongside the grammatical ability passive variant in (23c) (see section 4.5 below for explicit evidence that the stems to which *-tu* attaches are truly verbal):

- (23) a. * inepo hunu-me muuni-m bwasa'a-tu
 1SG.NOM that-PL bean-PL cook.TR-VZ
 INTENDED: e.g., 'I am cooking those beans.'
- b. * hunu-me muuni-m bwasa'a-tu
 that-PL bean-PL cook.TR-VZ
 INTENDED: e.g., 'Those beans are being cooked.'
- c. *Hunume muunim aa bwasa'atu.*
 hunu-me muuni-m aa bwasa'a-tu
 that-PL bean-PL able cook.TR-VZ
 'Those beans can be cooked.'

The grammaticality of (23c) suggests three possibilities: (i) *-tu* does, in fact, attach to verbal stems, but the contexts are so rare (e.g., due to the semantics of *-tu*) that we only see evidence of this fact in the ability passive; (ii) there are in fact two homophonous *-tu* suffixes, one that verbalizes nouns and adjectives, and another that is unique to the ability passive that affixes onto

verbs; (iii) there is a single *-tu* verbalizer that attaches only to nouns and adjectives, and the syntactic projection that it selects for in the ability passive is not, in fact, verbal.

We propose that the latter hypothesis is correct. Our argument is based on cross-linguistic evidence of deverbal adjectives of ability or potentiality with the same passive-like properties as the Hiaki ability passive. We believe this analysis is also desirable because it avoids the bifurcation of the *-tu* verbalizer into homomorphs with mostly overlapping, but nonetheless distinct, morphosyntactic properties. In addition to preserving a unified account of the *-tu* verbalizer, this analysis accounts for the passive-like argument structure effects of the construction in terms of Voice, where these effects are typically accounted for cross-linguistically.

4 Analysis

4.1 Theoretical assumptions

Following Marantz (1997) and others (e.g., Embick 2004; Harley 2009), we assume a syntactic theory of word formation in which category-determining heads (e.g., little a° , v° , n° , etc.) are employed in the syntax to derive words of particular categories from roots and/or other syntactic categories.¹⁸

We also assume that these category-determining heads introduce phases that result in Spell-Out to both LF and PF (e.g., Chomsky 2001). As we discuss below, we tentatively assert that phase theory, or some analogue to it, may provide a principled explanation for the passive-like argument structure effects exhibited by the ability passive (see section 4.2, esp. Footnote 24).

We further assume a tripartite verbal structure for Hiaki as described in Harley (2013). For a typical transitive verb, this structure involves a separation of the lexical content of the root (\sqrt{P} or VP), the projection that introduces agentive semantics (vP), and the projection that

¹⁸ Though we believe this position provides the most parsimonious account of the data presented herein, we do not hold that such a position is strictly necessary, and of course we see no *a priori* reason to rule out other approaches, such as lexicalist accounts. Cases of word-formation with apparent scope over phrasal categories, like that illustrated for *aa -tu* here, would need to receive a very different account, however.

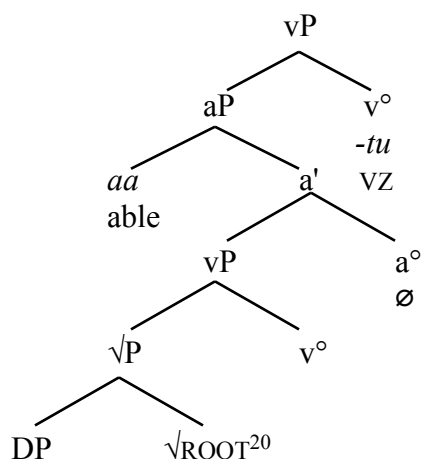
introduces the syntactic constituent that saturates the agent role (VoiceP). The fundamentally essential component of this assumption is the separation of *v* and Voice, and the corresponding separation of agentive semantics from the constituent that saturates those semantics (Harley 2013; see also Pylkänen 2002 for a different manifestation of a similar tripartite verbal structure). This assumption is based in part on demonstrations that the agent role and the argument that saturates that role are introduced by distinct syntactic projections in Hiaki (see Harley 2013 for evidence and discussion).

4.2 The present analysis

We propose that the Hiaki ability passive is built as follows. A *v*P containing the main verb of the construction and its internal arguments is constructed, ultimately spelling out as a phase. The ability modifier *aa* occurs as the specifier of an adjectivizing *a*P that selects for that *v*P as its complement, and is also ultimately spelled out as a phase. This *a*P is subsequently reverbalized by *-tu*, which, as argued above, necessarily selects for either a nominal (*n*P) or adjectival (*a*P) complement. We tentatively propose that *-tu* is required in this construction in order to license Voice and the rest of the extended verbal projection ('extended projection' in Grimshaw's sense (1991[2005])); see section 4.2.2 and example 26 below), akin to its use to license further inflection in copular constructions (cf. section 2.2).¹⁹ This analysis is schematized in (24):

¹⁹ From a functionalist viewpoint, it is possible that *-tu* serves no other purpose but to signal a contrast with the more common, non-passive use of the ability modifier *aa*, i.e., its presence reflects the relative markedness of the ability construction. However, such a proposal would need to appeal to some other justification for the choice of *-tu* rather than another suffix to serve the marking function, and would lose the connection to ability passives cross-linguistically.

(24)



This proposal retains a unified approach to *-tu* as a deadjectivizing (and denominalizing) affix by proposing that it suffixes onto an aP headed by a null adjectivizer in the ability passive. This account also serves to unify the Hiaki ability passive with deverbal adjectives of ability cross-linguistically.

4.2.1 *aa* as Spec-aP, not a°

We propose that *aa* realizes Spec of the aP, rather than the a° head. While we believe this is the correct approach, we do not believe that it is a necessary assumption for our analysis. This choice is due in part to the generally right-headed nature of Hiaki (if *aa* realized an a° head on the left, it would be the only left-branching head in the predicative domain in the language) and the possible origins of *aa* as an adverbial (see section 2.1 above). However, a more explicit argument in favor of this view can be made as follows²¹. If we assume that the *aa* which participates in the ability passive is (i) the a° head of the aP and (ii) the same *aa* that we see outside of the ability passive, then we would expect that all phrases involving this *aa* are in fact adjectival (aP). If this were true, then these phrases should not be able to be inflected without first being verbalized by *-tu*, which is not the case (cf. 15-16 above).

Nonetheless, we believe that a unified approach to these two versions of *aa* is, at least in principle, possible. In a series of influential works, van Gelderen (2007, 2008, 2009, 2011)

²⁰ We have schematized this structure with reference to an uncategorized root ($\sqrt{\text{ROOT}}$) and its corresponding phrase ($\sqrt{\text{P}}$). As outlined in our theoretical assumptions (section 4.1), however, this is not central to our analysis and may be conceptualized as a VP or similar lexical primitive.

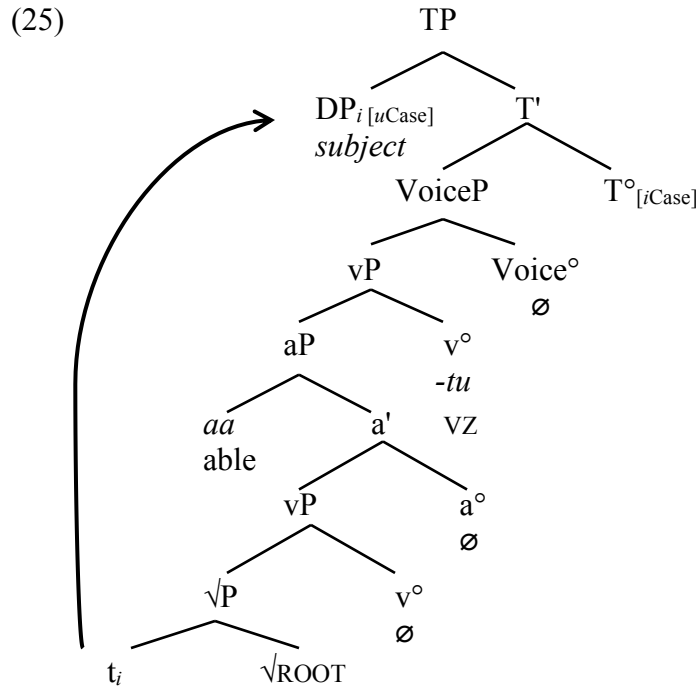
²¹ We wish to thank an anonymous reviewer for bringing this argument to our attention.

proposes a diachronic relationship that turns adverbials into specifiers, via reanalysis driven by an economy constraint on feature expression ('Feature Economy', summarized roughly as: specifiers which *check* uninterpretable features are interpretively more parsimonious than adverbials which *introduce* interpretable features). Given the suggestion that the ability modal *aa* originated as an adverbial (section 2.1), its reanalysis as a specifier checking an abilitative modality feature on a head is consistent with van Gelderen's theory. Within that view, a unified approach to *aa* is achievable if we hypothesize that both the regular ability modal *aa* and the *aa* of the ability passive realize the specifiers of heads bearing an ability modal feature. In the case of the regular ability modal, this feature would be on a head projecting the usual kind of ModP somewhere in the extended verbal projection, say between AspP and VoiceP. In the case of the ability passive, the feature would be on a head projecting an aP within the VoiceP domain. The idea is that the *aa* element is underspecified for phrasal context; it checks an abilitative modality feature against the head in either context.²² A full justification of such an approach would require further diachronic study across different branches of the Uto-Aztecan language family, but we consider it to be a plausible line to pursue for future work on *aa*.

4.2.2 Accounting for passive argument structure

To account for the promotion of the internal argument to subject position, we propose that a null Voice^o head above *-tu* fails to introduce an external argument and also fails to assign accusative case, in accordance with Burzio's (1986) generalization. This Voice head is very much like passive Voice, but with a null exponent, as in unaccusatives and raising predicates (see Harley et al. 2009 for arguments in favor of such a Voice head elsewhere in Hiaki). Because of the lack of accusative case, the internal argument is raised to T to satisfy the Case Filter and receive nominative case. This is schematized in (25):

²² In both contexts, the heads (Mod^o and a^o) are null; the idea that *aa* is an overt specifier in a phrase with a null head is consistent with Koopman's (1996) 'Generalized Doubly-Filled Comp Filter' (as cited in van Gelderen 2001). The robust character of the generalized Doubly-Filled XP filter itself forms part of van Gelderen's motivation for an active economy principle at work in her adverb→specifier→head view of the Jespersen cycle.

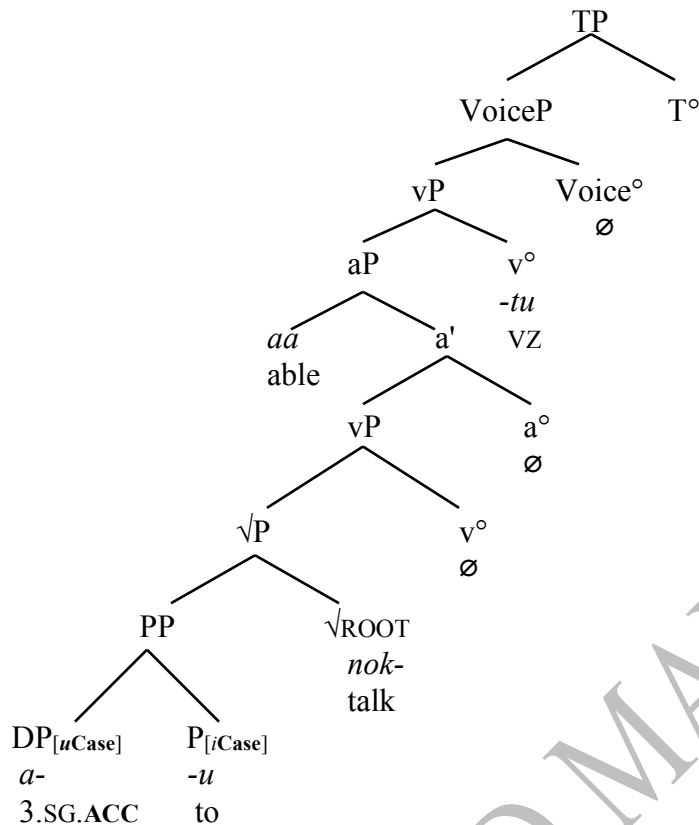


That the internal argument is raised in order to receive case is supported by the fact that, if the internal argument instead receives case from a case-assigning postposition, it is not raised to subject position and does not receive nominative case. This is illustrated in (26), where the postposition *-u* ‘to/toward’ assigns accusative case to its complement. With case assigned to the internal argument, it no longer needs to be raised in order to satisfy the Case Filter:

- (26) *Kaa aa au noktu.* (Dedrick & Casad 1999: 142 [53])
 kaa aa a-u nok-tu
 NEG able 3.SG.ACC-to talk-VZ
 ‘He doesn’t take advice.’ [*lit.: can’t be talked to*]

This is schematized in (27):

- (27) ... *aa a-u nok-tu*
 ...able 3.SG.ACC-to talk-VZ



Notice that the only DP in the derivation receives case where it is generated, and accordingly is not raised to subject position, despite being interpreted as the subject of the comment. This is entirely parallel to the true Hiaki passive construction with the *-wa* suffix, in which promotion to subject only obtains if there is an accusative argument in the corresponding active; internal arguments case-marked by postpositions are not promoted (Jelinek and Harley 2014).

Although we follow previous work in suggesting that unaccusative and raising predicates contain a vacuous Voice head (Harley et al. 2009 for Hiaki, but see also Legate 2003 for the case that this is a general property), it is clear that the same analytical results could obtain if (i) there were also a null Voice° head under the aP that did not introduce a syntactic argument, or (ii) there were simply no Voice° head above *-tu*, rather than a Voice° head with a null exponent (this version of the structure would more closely track Chomsky's (1995) original hypothesis concerning the phasality of unaccusative v). With regard to (i), we acknowledge the possibility that there could be a passive Voice° head with a null exponent present under the aP here. However, we see no reason to assume this additional Voice° head (note that Hiaki has a passive

Voice^o head *-wa* not present in this construction), and we elect instead to assume that no VoiceP is present under the aP at all (see section 4.6 below for additional argumentation). With regard to (ii), we assume that Voice is a mandatory part of the verbal extended projection, and its presence is necessary for the inclusion of the rest of the necessary clausal structure (AspP, TP, CP; indeed, this may be the role of *-tu* in inflected copular constructions in Hiaki, cf. section 2.2 above). However, nothing crucial to our analysis hinges on either of these choices. What matters is that no syntactic argument is introduced that can saturate the agent role.²³

Thus, this account attributes the passive properties of the Hiaki ability passive to the failure of Voice to introduce an external argument and assign accusative case. Nonetheless, the interpretation of this construction involves an implied agent that is never realized in the syntax. Assuming the split v/Voice hypothesis described above (Harley 2013), this entails two things: (i) the agent role associated with the embedded verb should be introduced by the internal vP, and therefore be accessible to the subsequent aP phase; and (ii) without a VoiceP to introduce a syntactic constituent to saturate that role within the aP phase, the variable associated with the agent role is unbound when the phase is spelled out, and thus is unselectively existentially quantified as a last resort (Heim 1982).²⁴ This predicts, in accordance with the facts, that there should be an understood indefinite agent of the embedded verb with no corresponding syntactic constituent.²⁵

²³ For simplicity, we refer to the external thematic role that is unrealized in the syntax in the Hiaki ability passive as an agent, but in practice it need not be so (see Footnote 17 for an example of the ability passive with a non-agentive verb).

²⁴ Our use of existential quantification here is built on a particular assumption of Phase Theory, namely that constituents that are sent to LF after being spelled-out at a phase boundary must be interpretable. Under the assumption that unbound variables are not well-formed within a spelled-out constituent, Heim's existential closure operation applies as a last-resort interface operation to yield a well-formed LF representation. Note that the proposal here requires that categorizing heads trigger phasal Spell-Out, as proposed by Marantz (2007). A similar conceptualization of the existential closure operation as a last-resort LF rescue is suggested in Alexiadou, Schäfer and Spathas (2013), among others. They propose that last-resort existential closure resolves a type mismatch caused by an unbound variable in internal argument position. In our analysis, existential closure also resolves a type mismatch, since *-tu* elsewhere attaches to saturated predicates, type $\langle st \rangle$, and without existential closure the aP to which *-tu* attaches would be of type $\langle e, st \rangle$.

²⁵ Hiaki does not allow *by*-phrases in any passive constructions, so such an argument can never be realized. This is therefore not an explicit argument that Voice is absent under the aP, as the same results would obtain if a null passive or unaccusative Voice head were present.

Note as well that the final step of the derivation in this proposal is verbalization of the aP by *-tu*. As in its normal functions as a copular or change-of-state verbalizer (section 2.2), *-tu* does not introduce a thematic role (i.e., it is not a transitivity verbalizer). As a result, there is no unbound variable to be saturated by Spec-VoiceP (Harley et al. 2009). Consequently, no external argument is introduced by Voice.

In this section, we have presented an analysis of the Hiaki ability passive that accounts for and explains (i) the apparent linear attachment of *-tu* to verbal stems by hypothesizing an intervening aP headed by a null adjectivizing morpheme, (ii) the promotion of the internal argument to subject position for Case reasons, and (iii) the presence of an understood agent (or other external thematic role) that is not saturated. In the following sections we provide further motivation for this analysis in light of similar constructions in other languages, focusing on English *-able*.

4.3 Comparing the Hiaki ability passive to related constructions cross-linguistically

As previously noted, the Hiaki ability passive poses two puzzles: (i) what is responsible for the valency effects of the construction and (ii) how do we account for the anomalous attachment of *-tu* to a verbal stem? We proposed that the answer to both questions lies in the presence of an adjectivizing aP that selects for a vP with agentive semantics, but does not embed a VoiceP to saturate the agent role. This proposal is bolstered by a cross-linguistic phenomenon by which deverbal adjectives of ability are linked with passive argument structure. These ability adjective constructions typically involve a deverbal adjective formed by an adjectival affix morpheme indicating some sort of capacity or potentiality, such as the adjectivizing suffix *-able* in English.

As described in Nevins (2002), the English *-able* affix takes an active transitive verb and “passivizes” it (28). Note that it is necessarily the internal argument that must appear as subject:

- (28) a. *The child learned the grammar* (Nevins 2002: 2 [5a-e])
 b. *The grammar was learned* (-ed passivization)
 c. *The grammar is learnable* (-able passivization)
 d. **The child was learned*²⁶
 e. **The child is learnable*

Indeed, this “-able passivization” can generally be paraphrased with a passive of ability or capacity, as in (29):

- (29) *The grammar is learnable* ~ *The grammar can be learned*

Furthermore, the result of this construction in English is an adjective, as can be seen in (30), where it is used attributively:

- (30) *The learnable grammar is more fun to study.*

For this reason, -able has been analyzed as an adjectivizing suffix (e.g., Aranoff 1976; Kayne 1984; Nevins 2002; McGinnis 2010).

Interestingly, similar constructions in other languages also involve deverbal adjectives and a morpheme indicating capacity or potentiality. Possible analogues include²⁷ -bar in German (Kratzer 1981), -anlegur in Icelandic (Wood & Sigurðsson 2014), -ble in Spanish and Catalan (Oltra-Massuet 2010, 2014), -vel in Portuguese (Moreira 2015), -bile in Italian (Cinque 1990, Bisetto 2009), -tos in Greek (Anagnostopoulou & Samioti 2014), -garri in Basque (Artiagoitia 2003), and -rare in Japanese (Ishizuka & Koopman 2014). In each of these cases the resulting construction is adjectival (see Moreira 2015: 12), as in English, suggesting an important link between deverbal ability adjectives and passive-like changes to argument structure.

4.4 The Hiaki ability passive involves an aP

The Hiaki ability passive very often receives an interpretation congruous with that of either the English -able construction (e.g. *learnable*) or the corresponding passive with an ability modal (i.e. *can be learned*). Entries from a Hiaki-English-Hiaki dictionary highlight the adjectival ‘-able’ interpretation, though both are of course possible (Molina et al. 1999; stem forms in parentheses, *aa* and *-tu* are bolded for ease of reference):

²⁶ Note that this is intended as the passive participle form of “learned,” not the bisyllabic “adjectival passive” *learnèd*.

²⁷ This list was adapted from Moreira (2015: 12).

- | | | | | | |
|------|----|------------------|--------------------------------------|----------------------|--------------------|
| (31) | a. | abwa'atu | <i>adj.</i> edible | cf. bwa'e (bwa'a-) | <i>tv.</i> eat |
| | b. | ahi'itu | <i>adj.</i> potable, drinkable | cf. he'e (hi'i-) | <i>tv.</i> drink |
| | c. | asautu | <i>adj.</i> good at following orders | cf. sawe (sau-) | <i>tv.</i> command |
| | d. | atu'ulitu | <i>adj.</i> loveable, likeable | cf. tu'ule (tu'uli-) | <i>tv.</i> like |

Despite appearing as lexical entries in Molina et al. (1999), in which the adverbial modifier *aa* is mis-analyzed as a prefix applied to a small subset of verbal forms, this construction is both productive and phrasal (see section 4.4.2 below). Nonetheless, these examples highlight the translatability of this construction to the English *-able* construction, including the adjectival nature of its interpretation.

4.5 The Hiaki ability passive selects for a vP

Importantly, it can be demonstrated that the Hiaki ability passive takes a fully phrasal vP as its complement. That the attachment site is a vP is demonstrated by the location of the causative morpheme *-tua* in (32) (see Harley 2013 for evidence that *-tua* realizes a vP in Hiaki). While (32a-b) include the possibly lexical causatives *hi'ibwatua* 'feed' and *vittua* 'send', (32c-d) consist of unambiguously productive uses of the causative in *cheptitua* 'cause to jump' and *hootua* 'cause to make':

- (32) a. *Hunume aa hi'ibwatuatu.*
 hunu-me aa [hi'ibwa-tua]-tu
 that-PL able [eat.INTR-CAUS]-VZ
 'Those ones can be fed.' (i.e., they aren't fussy eaters)
- b. *Hunume yeemikvaawame haivu aa Visentetau vittuatu.*
 hunu-me yeemikvaawame²⁸ haivu aa [Visente-ta-u vit-tua]-tu
 that-PL presents already able [Vicente-ACC-to see-CAUS]-VZ
 'Those presents are ready to be sent to Vicente.'
- c. *Hunuu kava'i aa cheptituatu.*
 hunuu kava'i aa [chepti-tua]-tu
 that.NOM horse able [jump-CAUS]-VZ
 'That horse can be made to jump.'

²⁸ The word *yeemikvaawame* is morphologically complex (*yee-mik-vaa-wa-me*, people-give-PROSP-PASS-S.REL 'things that are going to be given to people'), but this complexity is not important here.

- d. *Aapo aa tahkaim hootuatu.*
 aapo aa [tahkai-m hoo-tua]-tu
 3.SG.NOM able [tortilla-PL do-CAUS]-VZ
 ‘She can be made to make tortillas.’

In each example in (32), we see the entire vP_{CAUS}, complete with the v^o_{CAUS} head realized by the suffix *-tua*, contained within the scope of the ability passive. Note that the interpretation requires that the whole causative verb phrase fall under the scope of the construction, not just the embedded (pre-causative) verb:

- (33) a. *hi'ibwa-tua* ‘feed’ → [*aa hi'ibwa-tua*]-tu ‘can be fed’
 * [*aa hi'ibwa*]-*tua-tu* ‘cause to be able to eat’
 b. *chepti-tua* ‘cause to jump’ → [*aa chepti-tua*]-tu ‘can be made to jump’
 * [*aa chepti*]-*tua-tu* ‘cause to be able to jump’

In addition, we see further evidence of vP phase-attachment in (34), where the vP_{APPL} (or ApplP²⁹), realized by the applicative suffix *-ria*, appears within the scope of the ability passive (see Harley 2013 for evidence that *-ria* realizes a vP in Hiaki):

- (34) *Aapo si kaa aa tiiko paanim hooriatu.*³⁰
 aapo si kaa aa [tiiko paanim hoo-ria]-tu
 3.SG.NOM very NEG able [wheat bread make-APPL]-VZ
 ‘He really can’t be made wheat bread for.’

As with the causatives in (33), the ability passive construction takes scope over the applicative, not just the embedded verb. This is reflected in the translation, where the (in)ability applies to the making of something *for someone*.

²⁹ Whether applicatives are realized in the syntax as vP or ApplP (Wood & Marantz 2017) obviously has implications for the selectional restrictions on *aa*. If ApplP is a distinct phrase type, the claim must be modified to say that *aa* selects for *either* a vP *or* an ApplP. Since applicatives in Hiaki themselves select for a vP (Harley et al. 2009), we consider this immaterial to the central point here.

³⁰ Though this sentence is grammatical, the following is preferred, where the role of the subject as the benefactor of the applicative is redundantly marked with a PP:

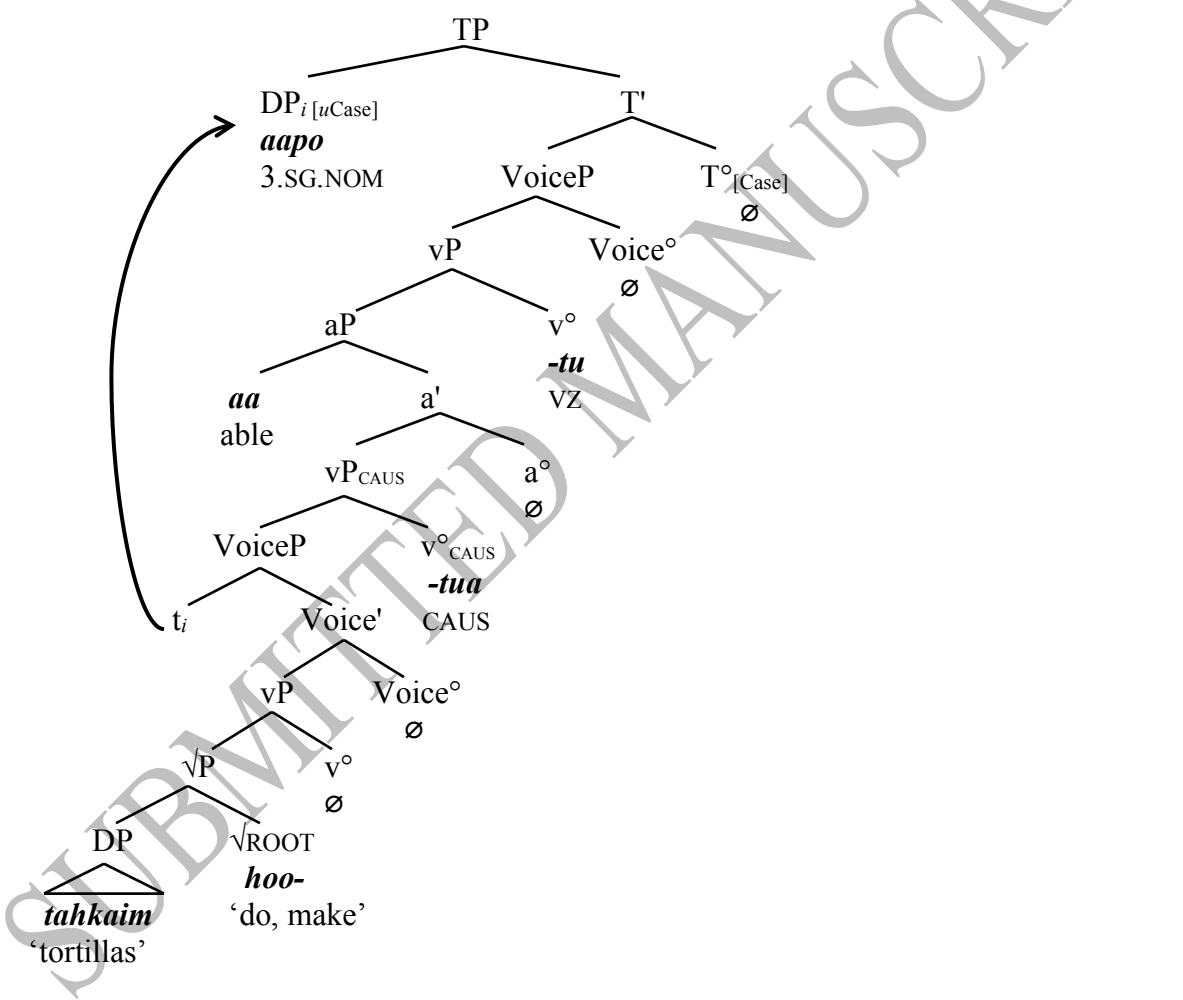
Hunua vetchi'ivo, si kaa aa tiiko paanim hooriatu.
 hunua vetchi'ivo si kaa aa tiiko paanimhoo-ria-tu
 that_one for very NEG able wheat bread make-APPL-VZ
 ‘That man, he really can’t be made wheat bread for.’

In either case, the implication is that the subject of the sentence is someone who dislikes wheat bread so much that one could never make it for him.

Together, (32-34) demonstrate that the ability construction realized by *aa* and *-tu* takes scope over a vP phase. Importantly, these data show that the modal *aa* is surfacing as an independent word to the left of a phrasal constituent over which it takes scope, undermining Molina et alia’s (1999) presentation in (31), which incorrectly suggests that *aa* is appearing as a prefix or preverbal clitic (see also (8c-e) above, where regular modal *aa* is also separated from the verb by a phrasal constituent).

The analysis we have proposed can be illustrated for (32d) as in (35):

- (35) *Aapo* *aa* *tahkai-m* *hoo-tua-tu*
 3.SG.NOM able tortilla-PL make-CAUS-VZ



The adjectival phrase introduced by *aa* takes scope over a complex verbal phrase with multiple internal arguments, the highest of which is raised to subject position and marked with nominative case. The verbalizer *-tu* takes the adjective phrase realized by *aa* as its complement. As previously noted, this analysis unifies the *-tu* of this ability passive with the deadjectivizing and

denominalizing *-tu* affix found elsewhere in Hiaki. In addition, the presence of a deverbal adjective in a construction with these passive argument structure properties unifies this account with ability adjectivals cross-linguistically.

As discussed above, (cf. 35) Voice fails to introduce an external argument, consistent with the nonagentive semantics of *-tu*. Consequently, the highest argument of the internal verbal predicate is raised to subject position. This behavior is like passives cross-linguistically, and indeed in Hiaki (Jelinek and Harley 2014). This analysis therefore has the advantage of attributing the argument structure effects of the construction to Voice, where such effects are typically accounted for.

4.6 What happens if the aP selects for VoiceP instead of vP?

Some previous accounts of deverbal adjectival ability constructions have suggested that Voice must occur beneath the adjectivizing aP. For example, Wood and Sigurðsson (2014) note that, in Icelandic, ability adjectives can co-occur with instrument PPs, diagnosing the presence of agentive semantics, which Wood and Sigurðsson attribute to the presence of a Voice^o head (see Bruening 2013, and Anagnostopoulou & Samioti 2014, for similar analyses in English and Greek, respectively). Under such an analysis, the a^o head of the adjectivizing aP must take scope over this agent-introducing VoiceP and force the internal argument to be predicated of a^o. This account shares a fundamental similarity with our own account of the Hiaki ability passive, namely that agentive semantics are introduced without an argument to saturate the agent role. For Wood and Sigurðsson, Voice introduces this agent role without a constituent to saturate it. By contrast, we assume that v introduces agentive semantics while the absence of Voice under the aP means that there is no available argument to saturate the agent role. Based on our particular theoretical assumptions, the absence of an external argument in the presence of existing semantics for that argument *must* mean that Voice itself is absent (our approach assumes that Voice would necessarily saturate that argument if it were present). This particular separation of the roles of v^o and Voice^o is independently argued for in Hiaki (Harley 2013), but is not necessary here if Voice can be present without binding the agent variable.

Given the present theoretical assumptions, however, what would happen if the aP with *aa* in its Spec selected for VoiceP instead of vP?³¹ By our analysis, and the argument that VoiceP introduces the syntactic constituent that saturates agentive semantics, we would no longer expect passive argument structure. By extension, we would no longer expect *aa* and *-tu* to impose transitivity restrictions on the vP they select for.

Indeed, we see just such a scenario in the sentences in (36), where *-tu* still appears to attach linearly to a verbal stem preceded by the adverbial modifier *aa*, but we no longer find passive argument structure effects or transitivity restrictions on the internal vP:

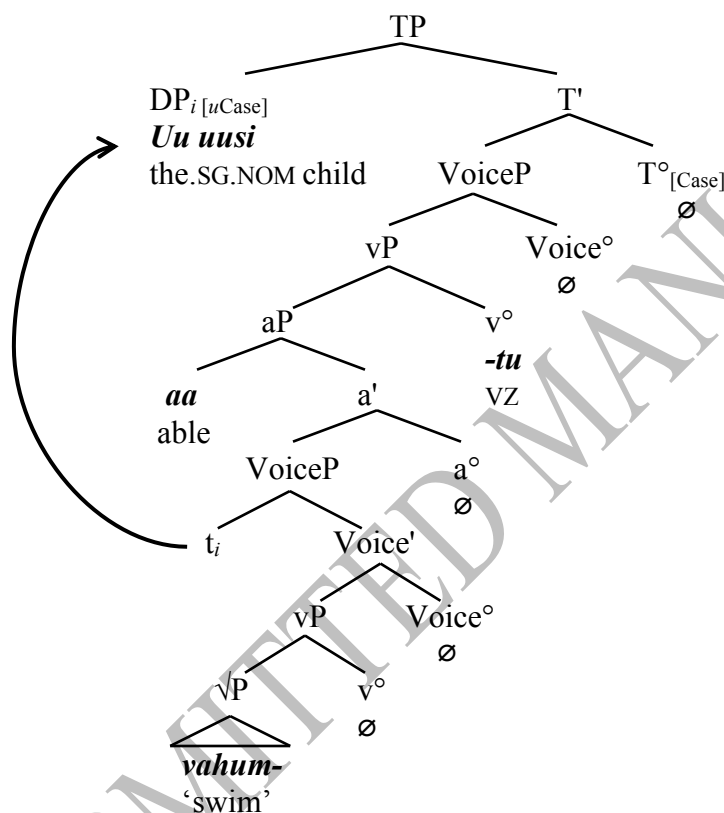
- (36) a. *Inepo puato horoim aa hootu.*
 inepo puato horoi-m aa hoo-tu
 1.SG.NOM plate bumpy-PL able make-VZ
 ‘I am starting to be able to make bowls.’
- b. *Uu uusi aa vahum-tu.*
 uu uusi aa vahum-tu
 the.SG.NOM child able swim-VZ
 ‘The child is starting to be able to swim.’
- c. *Haisa haivu aa hi'ibwatu uu ili uusi?*
 haisa haivu aa hi'ibwa-tu uu ili uusi
 Q already able eat.INTR-VZ the.SG.NOM little child
 ‘Is the little child starting to be able to eat already?’
- d. *Uu maromeo che'ewasu aa tivortat yi'itu.*
 Uu maromeo che'ewasu aa tivor-ta-t yi'i-tu
 The acrobat more_and_more able barrel-ACC-on dance-VZ
 ‘The acrobat is becoming more and more able to dance on the barrel.’

In the sentences in (36), we find that (i) *aa* continues to convey a meaning approximating ‘to be able to’ or ‘to know how to’, (ii) *-tu* now contributes a more straightforwardly inchoative or inchoative semantics to the sentences, akin to its non-copular uses discussed in section 2.2 (cf. 17c), (iii) the internal argument of the embedded verb is no longer promoted to subject position (cf. *puato horoim* in 36a), (iv) the agent of the embedded verb is explicit in the syntax, and (v) the embedded verb can be intransitive (cf. *vahume* in 36b, *hi'ibwa* in 36c).

³¹ We thank an anonymous reviewer for raising this question.

We believe that these examples represent the presence of an external-argument-introducing active Voice under the aP associated with *aa*, whereas the ability passive represents the case where Voice is absent.³² Our representation of this structure is found in (37):³³

- (37) *Uu uusi aa vahum-tu*
 the.SG.NOM child able swim-VZ



By contrast to the analysis of the ability passive in (27), Voice here introduces a DP to saturate the unbound variable of the lower vP. This DP argument is subsequently raised to Spec-TP to receive nominative Case.

³² Of course, under different assumptions whereby Voice is not required to saturate an unbound variable immediately under its scope, the differences between these two constructions could simply reflect the presence of two different Voice° heads (one which introduces an argument, and one that does not).

³³ Note that the order of *aa* and the internal argument *puato ho'orim* in the example (36a) is not as predicted by the account, i.e., *puato ho'orim* appears to the left of *aa*; this is consistent with the general freedom of word order that is possible in the Hiaki *mittelfelt*, likely reflecting the availability of short-distance scrambling (Harley, Trueman and Leyva 2012).

In the analyses of adjectival passives in other languages cited above (Bruening 2013, Wood and Sigurðsson 2014, Anagnostopoulou & Samioti 2014), the particular a° head of the ability adjective is lexically stipulated to existentially bind the agent variable introduced by Voice. For the core ability passive cases considered here, this would also be a possibility; our analysis could also stipulate that the a° head of the Hiaki ability passive is lexically specified to existentially bind an open argument position in this way. However, these active cases in (36) would then require a separate treatment, involving bifurcation of the ability modifier *aa* into one that realizes Spec of an aP that triggers existential quantification of the highest semantic variable under its scope (in the ability passive), and another that does not trigger existential quantification at all, instead requiring that the variable be bound by an explicit argument (cf. 36). Thus, we prefer to rely on Heim's unselective existential binding of open variables as a last resort operation occurring at the interfaces, as described above (section 4.2.2, and discussion in Footnote 24). Such an account permits a unified treatment of the active and passive cases, and nothing need be lexically stipulated. If Voice is present under the aP, an external argument is introduced to saturate the agent variable prior to Spell-Out. If Voice is absent under the aP, no such argument is introduced and the agent variable is existentially quantified. Consequently, there is no need to assume two different *aa* morphemes.

5 SUMMARY AND DISCUSSION

We have presented an analysis of the Hiaki ability passive, representing a first account of any such construction in the Uto-Aztecan language family. This construction involves the ability modal *aa* 'to be able to'/'to know how to' and the denominalizing/deadjectivizing verbalizer *-tu*. Crucially, though the construction exhibits prima facie evidence of this verbalizer affixing to a verbal stem, something that it does not otherwise do, we have proposed that the construction actually involves an intervening adjectivizing aP between the verbal stem and the verbalizer *-tu*. Consequently, the analysis that we have presented creates a unified account of *-tu* in its previously-described copular uses and in the ability passive.

This proposal relates the Hiaki ability passive to a number of deverbal ability adjectives cross-linguistically, which involve passive effects on the argument structure of the embedded verb. On the one hand, this lends credence to the present analysis, and to the idea that there is an

adjectivizing aP within the Hiaki ability passive, by situating the analysis in a broader and well-established context. On the other hand, this analysis does little to explain why ability adjectives behave this way cross-linguistically.

A possible explanation that one could imagine is that stative predicates, like ability predicates, show a bias towards adjectival lexicalizations in languages exhibiting these constructions. This is certainly the case in English, in which nearly all non-psychological stative predicates, and many psychological stative predicates, are lexically realized as adjectives. However, such a bias does not appear likely in Hiaki, in which truly stative verbs are not unusual. Many adjectival predicates in English have Hiaki translation equivalents that are verbal, e.g., *omte* ‘be angry’, *womte* ‘be afraid’, *allea* ‘be happy’/‘be well’, *tevaure* ‘be hungry’. There is no obvious bias in the Hiaki lexicon towards adjectival lexicalizations for stative predicates (as there may be in English), and the connection between abilitative meanings and adjectival realizations is thus not likely to be a consequence of language-specific lexicalization preferences. While this seems to rule out the possibility that stative aspect leads to an adjectival interpretation, it does not rule out the inverse, i.e., that the presence of an adjectival phase leads to a stative interpretation. We consider this a distinct possibility, in line with Oltra-Massuet (2014), Wood and Sigurðsson (2014), and others, and we tentatively propose that this correlation may play a role in explaining why deverbal adjectives of ability tend to have the passive properties that they do (though the availability of the inceptive ability active constructions documented in (36) then may become a puzzle).

In our account, the argument structure effects are attributed to the particular properties of Voice, the selectional properties of the aP associated with the ability modifier *aa*, and the semantic consequences of phase-based Spell-Out for constituents containing unbound variables. It remains an open empirical question to what extent such an explanation holds cross-linguistically. As already noted, alternative accounts that do not assume a split v/Voice projection in the syntax have been proposed for other languages. Can the present analysis also be applied to those languages, and present a unifying account of the passivization effects of deverbal adjectives? Much cross-linguistic research is needed to address these issues.

References

- Alexiadou, Artemis, Schäfer, Florian, and Spathas, Giorgos. 2013. Delimiting Voice in Germanic: on object drop and naturally reflexive verbs. *Proceedings of NELS 44*.
- Álvarez, Albert and Muchembled, Fany. 2015. Verbos posesivos en taracahita: esquemas fuentes y rutas evolutivas. *Amerindia*. 37(2). 95-120.
- Anagnostopoulou, Elena and Samioti, Yota. 2014. Domains within words and their meanings: a case study. In: Alexiadou, A., H. Borer, and F. Schäfer. (Eds.). *The syntax of roots and the roots of syntax*. Oxford: Oxford University Press.
- Aronoff, Mark. 1976. *Word-Formation in Generative Grammar*. Cambridge, MA: MIT Press.
- Artiagoitia, Xabier. 2003. The case of an enlightening, provoking and admirable Basque derivational suffix with implications for the theory of argument structure. *Anuario del Seminario de Filología Vasca*. 46. 147-183.
- Bisetto, Antonietta. 2009. *Italian adjectives in -bile*. MS: University of Bologna.
- Bruening, Benjamin. 2013. *By Phrases in Passives and Nominals*. *Syntax*. 16(1). 1-41.
- Bruening, Benjamin. 2014. Word formation is syntactic: Adjectival passives in English. *Natural Language & Linguistic Theory*. 32(2). 363-422. doi:10.1007/s11049-014-9227-y
- Burzio, Luigi. 1986. *Italian Syntax (Dissertation)*. Dordrecht: Reidel.
- Caballero, Gabriela. 2008. *Choguita Rarámuri (Tarahumara) Phonology and Morphology (Dissertation)*. Berkeley: University of California, Berkely.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In: Kenstowicz, M. (ed.). *Ken Hale: A Life in Language*. Cambridge: MIT Press. 1-52.
- Cinque, Guglielmo. 1990. Ergative adjectives and the lexicalist hypothesis. *Natural Language & Linguistic Theory*. 8(1). 1-39.
- Dedrick, John M. and Casad, Eugene H. 1999. *Sonora Yaqui Language Structures*. Tucson: University of Arizona Press and The Summer Institute of Linguistics.
- Escalante, Fernando. 1990. *Voice and Argument Structure in Yaqui (Dissertation)*. Tucson: University of Arizona.
- Estrada Fernández, Zarina E. 2000. Copulative Constructions in Uto-Aztecan Languages. In *Uto-Aztecan: Structural, Temporal, and Geographical Perspectives: Papers in Memory of Wick R. Miller by the Friends of Uto-Aztecan*, Chapter 3.2. eds. Eugene H. Casad and

- Thomas L. Willet. Hermosillo: Universidad de Sonora División de Humanidades y Bellas Artes. 139-154.
- Grimshaw, Jane. 2005 (1991). 'Extended Projection'. *Words and Structure*. Stanford: CSLI
- Gelderen, Elly van. 2001. The Force of ForceP in English. *Southwest Journal of Linguistics*, 20.2, 107–120.
- Gelderen, Elly van. 2007. The Definiteness cycle in Germanic. *Journal of Germanic Linguistics* 19.4, 275-308.
- Gelderen, Elly van. 2008. The Negative cycle. *Linguistic Typology* 12, 195-243.
- Gelderen, Elly van. 2009. Renewal in the left periphery: Economy and the complementizer layer. *Transactions of the Philological Society*, 107.2, 131-195.
- Gelderen, Elly van. 2011. *The Linguistic Cycle: Language Change and the Language Faculty*. Oxford: Oxford University Press.
- Hale, Kenneth and Keyser, Samuel J. 1993. On argument structure and the lexical expression of syntactic relations. In *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, Chapter 3. eds. Kenneth Hale and Samuel J. Keyser. Cambridge: The MIT Press. 53–109.
- Halle, Morris and Alec Marantz. 1993. Distributed Morphology and the Pieces of Inflection. In *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, Chapter 3. eds. Kenneth Hale and Samuel J. Keyser. Cambridge: The MIT Press. 111-176.
- Harley, Heidi. 2012. Lexical Decomposition in Modern Syntactic Theory. In *The Oxford Handbook of Compositionality* (online). eds. Wolfram Hinzen, Edouard Machery, and Markus Werning. Oxford: Oxford University Press. DOI: 10.1093/oxfordhb/9780199541072.013.0015
- Harley, Heidi. 2013. External arguments and the Mirror Principle: On the distinctness of Voice and v. *Lingua*. 125. 34-57.
- Harley, Heidi. 2015. Suppressing Subject Arguments in Hiaki (handout). University of Santa Cruz colloquium.
- Harley, Heidi, Haugen, Jason, and Tubino Blanco, Mercedes. 2012. *Lexical Categories and Derivation*. MS: University of Arizona.
- Harley, Heidi and Leyva, Maria Flores. 2009. Form and Meaning in Hiaki (Yaqui) Verbal Reduplication. *International Journal of American Linguistics*. 75(2). 233-272.

- Harley, H, and Mercedes Tubino Blanco. 2013. Cycles, vocabulary items and stem forms in Hiaki. In O. Matushansky and A. Marantz, (eds), *Distributed Morphology Today*. Cambridge, MA: MIT Press. pp. 117-134
- Harley, Heidi, Alex Trueman and Maria Leyva. 2012. Configurationality in Hiaki. Talk presented at the 15th Workshop on American Indigenous Languages, UCSB, Santa Barbara, California, April 28, 2012.
- Heim, Irene. 1982. The semantics of definite and indefinite noun phrases (Dissertation). Amherst: University of Massachusetts.
- Ishizuka, Tomoko. and Koopman, Hilda. 2014. On the importance of being silent or pronounced: English *-able* and Japanese *-rare* potentials compared (Poster). GLOW 37. CRISP: Belgium, 2014.
- Jelinek, Eloise. 1998. Voice and Transitivity as Functional Projections in Yaqui. In: Miriam Butt and Wilhelm Greuder (eds) *The Projection of Arguments: Lexical and Compositional Factors*. Stanford: CSLI Publications. 195-224.
- Jelinek, Eloise and Harley, Heidi. 2014. Impersonal agreement in a non-agreement language: The Hiaki impersonal construction. In: Carnie, Andrew and Harley, Heidi. (Eds.) *Routledge Leading Linguists: Pronouns, Presuppositions and Hierarchies: The Work of Eloise Jelinek in Context*. Florence, GB: Routledge. 375-388.
- Kayne, Richard S. 1984. Connectedness and binary branching. Dordrecht: Foris Publications.
- Koopman, Hilda. 1996. The Spec-Head configuration. In F. Lee and E. Garret (eds), *Syntax at Sunset, UCLA Working Papers in Syntax and Semantics* 1, 37-64.
- Kratzer, Angelika. 1981. The notional category of modality. In: Eikmeyer, H.-J. and H. Rieser. (Eds.) *Words, Worlds, and Context*. Berlin: Mouton de Gruyter. 38-74.
- Legate, JA 2003. Some Interface Properties of the Phase. *Linguistic Inquiry* 34:3
- Langacker, Ronald W. 1977. *Studies in Uto-Aztecan Grammar*. Volume 1: An Overview of Uto-Aztecan Grammar. Dallas: The Summer Institute of Linguistics and The University of Texas at Arlington.
- Leyva, Maria Flores, and Harley, Heidi. Unpublished Interviews.
- Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. *University of Pennsylvania working papers in linguistics*. 4(2). 201-225.
- Marantz, Alec. 2007. Phases and words. In Choe, Sook-Hee. (Ed.) *Phases in the theory of grammar*. Seoul: Dong-In.

- McGinnis, Martha. 2010. Evidence for the syntactic attachment of *-able*. Handout. CUNY Conference on the Word in Phonology. New York. Available at: <<http://bit.ly/1FlkYLn>>.
- Molina, Felipe S., Valenzuela, Herminia, and Shaul, David L. 1999. *Yoeme-English/English-Yoeme Standard Dictionary*. New York: Hippocrene Books.
- Moreira, Bruna Elisa Da Costa. 2015. Aspectos sintáticos e semânticos dos adjetivos modais (Dissertation). Brazil: Universidade de Brasília.
- Nevins, Andrew. 2002. One *-able*, two attachment sites. MS: MIT.
- Oltra-Massuet, Isabel. 2010. On the morphology of complex adjectives (Dissertation). Barcelona: Universitat Autònoma de Barcelona.
- Oltra-Massuet, Isabel. 2014. Deverbal Adjectives at the interface: a crosslinguistic investigation into the morphology, syntax and semantics of *-ble*. In: Alexiadou, Artemis and Hall, Allen. *Interface Explorations*. 28. Boston/Berlin: Mouton de Gruyter.
- Pylkkänen, Liina. 2002. Introducing Arguments (Dissertation). Cambridge: MIT.
- Sanchez, Jose, Trueman, Alex, Leyva, Maria Flores, Leyva Alvarez, Santos, Tubino Blanco, Mercedes, Jung, Hyun-Kyoung, and Harley, Heidi. 2014. *An Introduction to Hiaki Grammar Volume 1*. MS: University of Arizona.
- Tubino Blanco, Mercedes, Harley, Heidi, and Haugen, Jason D. 2009. The syntax of hybrid verb/affix lexemes and clause fusion in Hiaki (Yaqui). *Rice Working Papers In Linguistics*. 1. 79-91.
- Tubino Blanco, Mercedes, Harley, Heidi, and Haugen, Jason D. 2012. Affixal light verbs and complex predicates in Hiaki. MS: University of Arizona.
- Wood, Jim & Marantz, Alec. 2017. The interpretation of external arguments. In D'Alessandro, Roberta, Franco, Irene, and Gallego, Ángel J. (Eds.) *The Verbal Domain*. 64. Oxford University Press.
- Wood, Jim & Sigurðsson, Einar F. 2014. Building deverbal ability adjectives in Icelandic. *Proceedings of the 37th Annual Penn Linguistics Conference*. 20(1). 351-360.

APPENDICES

APPENDIX A: Diagram of the Uto-Aztecan Language Family. The Taracahitic sub-branch of which Hiaki is a part is bolded for reference.

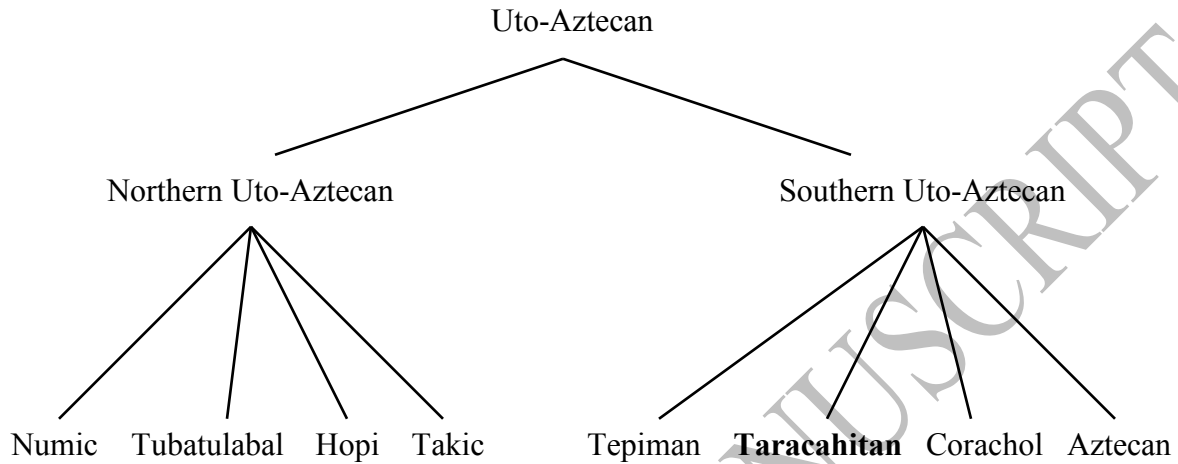


Image adapted from Caballero (2008).

APPENDIX B: Diagram of the Taracahitan Language Sub-family. Languages which are no longer spoken are indicated with an asterisk.

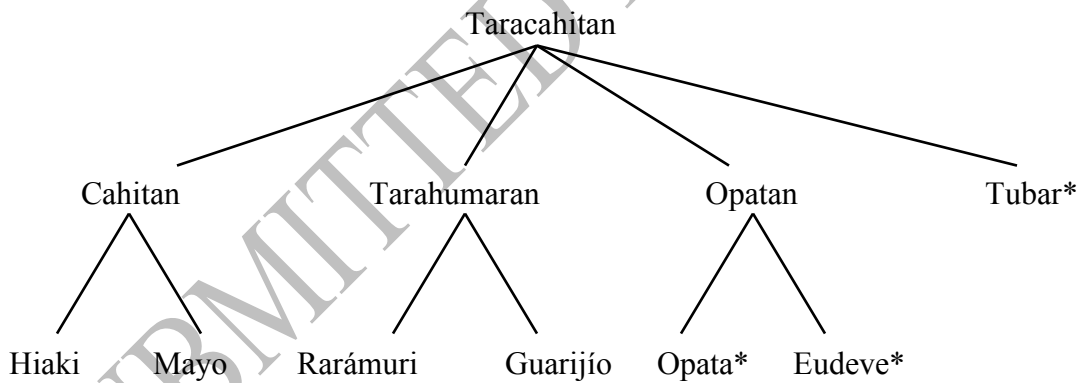


Image adapted from Caballero (2008).

APPENDIX C: List of abbreviations

<u>Gloss</u>	<u>Interpretation</u>
1	First person
2	Second person
3	Third person
ACC	Accusative
ADVZ	Adverbializer
APPL	Applicative
CAUS	Causative
DEO	Deontic (modal)
DIST	Distal
EMPH	Emphatic (reduplication)
EPI	Epistemic (modal)
GEN	Genitive
HAB	Habitual (reduplication)
IMPFV	Imperfective
INTR	Intransitive
IRR	Irrealis
MOD	Modal
NEG	Negative
NOM	Nominative
O.REL	Object relativizer
PASS	Passive
PFV	Perfective
PL	Plural
PPL	Participial
PROS	Prospective
PST	Past
PST.PFV	Past perfective
Q	Question particle
RED	Reduplication
SG	Singular
S.REL	Subject relativizer
TR	Transitive
VZ	Verbalizer