

Affixal light verbs and complex predicates in Hiaki^{*}

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1. Introduction

The analysis and typology of complex predicates presents a long term challenge to linguists across theoretical frameworks (see e.g., Kuroda 2003, Bower 2008 for two general overviews of the phenomenon). One main challenge has been to identify the nature and properties of complex verb groupings, of which there are several types: serial verb constructions, typical of African and Austronesian languages; light verb constructions involving some kind of complement verb, and verbal complexes involving auxiliaries (see Butt 1993, Svenonius 2008). Another main challenge has been to identify the nature and contents of the complement in light verb constructions (Wurmbrand 2007, Lee-Schoenfeld 2011, Folli & Harley 2012). That is, it is still unclear what kind of constituents complex predicates take as their complement, whether a V or a VP, a CP, TP, or vP, or contains material of another kind (e.g., ApplP, AspP), and most importantly, what all this tells us about the argument structure of the resulting verbal complexes.

In this paper, we aim to contribute to both research programs with a study of V-V incorporation in the SOV language Hiaki¹. In particular, we provide a unified analysis of the phenomenon as an instance of complex predication in the sense of Butt (1993), that is, a V-V complex involving a light verb that takes a verbal projection as its complement. We will demonstrate the light nature of the head participating in the verbal complex by showing that in many cases, these light verbs correspond to a heavy counterpart (*Butt's generalization*, Svenonius 2008), so much so that both light and heavy versions of the same verb may co-occur in the same sentence. We will present data from V-V structures in this Uto-Aztecan language to show that the

complement verbal projections participating in these constructions may be either a minimal phase—agentive vP—or a smaller constituent, a non-agentive VP. This has crucial consequences for syntactic phenomena such as case-assignment, binding, and the passive vs. active interpretation of the complement, as well as the morphological realization of the complement verb. We thus extend some of the theoretical proposals made in Wurmbrand (2007), Lee-Schoenfeld (2011) for Indo European languages to other language families.

The paper is structured as follows: In the next section we give some introductory data on V-V constructions in Hiaki. In section 3, we apply Butt's diagnostics for distinguishing light, auxiliary and serial verbs, and argue that the suffixal verbs in Hiaki V-V constructions pattern as light verbs and should be analyzed as such—even when they are mandatorily suffixal and lack free forms entirely. In section 4, we provide some syntactic evidence for our analysis, motivating distinct embedded vP and VP structures. In particular we show that our proposed structures explain why the V-V construction allows two binding domains but just one case domain. In section 5, we discuss the implications of our analysis for Hiaki morphological processes, particularly the distribution of bound stem forms and reduplication. Section 6 is the conclusion.

2. V-V incorporation in Hiaki: Data and characteristics

Hiaki displays a characteristic type of complex predicate formation, in which a derivational suffix is attached to an embedded verb, forming a verb cluster. In this V-V configuration, typical of verb-final languages, the suffix introduces its own arguments (if any) to the construction, and takes the content of the embedded verb phrase as its semantic complement. A typical example is shown in (1):ⁱⁱ

- (1) Anselmo [uusi-ta vuiti]-sae-k
 Anselmo:NOM [child-ACC run]-order-PERF
 ‘Anselmo ordered the child to run.’

In (1), the suffixes *-sae* ‘order’ combines with the complement verb *vuite* ‘run’, producing a ‘clause fusion’ configuration (Rude 1996), the idea being that two semantically distinct clauses ‘fuse’ into a single syntactic clause. The construction has the following features:

I. **Productivity.** This construction is productive in Hiaki, which contains many derivational verbal suffixes (e.g. the desideratives *-ii'aa* ‘want,’ *-pea* ‘to feel like’, *-vae* ‘intend’; the directive *-sae*; the causatives *-tua* ‘make’ and *-tevo* ‘have (NP Ved)’; the aspectuals *-hapte* ‘stop’ and *-taite* ‘begin’; the directionals *-sime* ‘go (sg.subj)’, *-saha* ‘go (pl.subj)’; *-kikte* ‘stand up/stop/start’; and the perception verbs *-vicha* ‘see’, *-hikkaha* ‘hear’, among others).

II. *Nature of the suffixal verbs*. Many of these suffixes also exist as full-fledged verbs. Examples include *mahta* ‘teach’, *siime* / *saha* ‘go’, *vicha* ‘see’, *sawe* ‘order’. Compare the suffix *-sae* ‘order’ in (1) above with the independent verb *sawe* ‘order’ in (2).

- (2) In ho’a-po in avachi nee **sawe**ⁱⁱⁱ
 My house-LOC my older.brother:FEM me order
 ‘My older brother always gives me orders at home’ Estrada *et al.* (2004: 167)

A second group of suffixes appearing in V-V compounds in Hiaki involve elements that only exist in a bound form, at least synchronically. The desiderative suffix *ii’aa* is an example (3).

- (3) *Jason [uusi-ta koowi-m am=sua-**ne**-vetchi’ivo] **ii’aa**
 Jason:NOM [child-ACC pig-PL him=care.for-IRR-COMP] want
 ‘Jason wants the child to take care of pigs.’

We have shown elsewhere (Tubino Blanco *et al.* 2009) that V-V combinations exhibit identical morphophonological and morphosyntactic behavior regardless of whether the affixal second verb has a full-fledged counterpart; see below for further discussion.

III. *Bound stem form of the leftmost (embedded) verb*. Many Hiaki word-forms have both a free and bound stem. In Hiaki V-V constructions, the leftmost verb occurs in its bound form. The rightmost suffixal verb appears in its free form if no other derivational suffix follows it. In (4b), the verb, *nooka* ‘speak’ occurs as *nok-* when it is the leftmost member of a V-V compound. Observe the contrast with its free form *nooka* in (4a), which appears if the verb is instead followed by inflectional Tense/Aspect morphology, or nothing:

- (4) a. Huan-ta-u=ne nooka-n
 Huan-ACC-to=1SG.NOM speak-P.IMPF
 ‘I was speaking to Huan.’
 b. Huan-ta-u=ne **nok**-pea-n
 Huan-ACC-to=1SG.NOM speak-feel.like-P.IMPF
 ‘I felt like speaking to Huan.’

IV. *Clausally ambiguous structure*: The clause structure created by V-V incorporation involves just one case domain (Tubino Blanco *et al.* 2009). This means that only one nominative argument is possible (i.e. the matrix subject). The rest of the core arguments, of either verb, show accusative case, just as in simple clauses (5).

- (5) **Aapo** [huka hamut-ta huka vachi-ta hinu]-tiia-k
 He [the:ACC woman-ACC the:ACC corn-ACC buy]-say-PERF
 ‘He said that the woman had bought the corn’ Rude (1996: 506[46])

The resulting structure is nonetheless complex in other respects. Tubino Blanco *et al.* (2009) show that despite its simplex-clause case behavior, the structure behaves like a complex clause with respect to other phenomena such as binding. In (6), there are two binding domains: the matrix, consisting of the matrix subject and the embedded subject, and the embedded, consisting of the embedded subject and the internal arguments of the complement verb.

- (6) a. Heidi₁ [Art-ta₂ au_{*1/2} sua]-mahta
 Heidi:NOM [Art-ACC 3SG.REFL care.for]-teach
 ‘Heidi teaches Art to take care of himself/*her.’
- b. **Heidi**₁ [Art-ta₂ aa_{1/*2}=sua]-mahta
 Heidi:NOM [Art-ACC 3SG=care.for]-teach
 ‘Heidi teaches Art to take care of her /*himself.’

In (6a), the anaphor *au* ‘himself/herself’ is bound within the embedded clause, by the embedded subject *Art-ta* ‘Art’. The pronoun cannot be bound by the matrix subject *Heidi*. In (6b), in contrast, the embedded pronoun *aa* ‘3sg’ cannot be bound by the embedded subject. It must take its reference from the matrix subject *Heidi* or from some other referent. This pattern is typical of complex clauses crosslinguistically, for example, in English ECM clauses. With this picture in mind, we turn to the question of classifying these V-V sequences typologically.

3. Suffixal verbs in Hiaki are light verbs

In this section, we consider whether V-V sequences are auxiliaries, light verbs, or serial verbs, exploiting the diagnostics for these categories in Butt (1993) and further discussed in Svenonius (2008).

3.1 Light verbs: the diagnostics

Butt (1993) distinguishes between auxiliaries, serial verbs and light verbs, contrasting their syntactic and semantic behavior. We will review her most relevant diagnostics and consider whether they apply to the rightmost verbs in Hiaki V-V combinations below.

Butt argues that light verbs exhibit more semantic content than auxiliaries. She also argues that light verbs impose restrictions on which verbs and type of arguments they may combine with, unlike auxiliaries, restructuring verbs and serial verbs; see also Svenonius (2008).

In Hiaki, although in some cases their semantic content is somewhat bleached, suffixal verbs do contribute both lexical-semantic and syntactic information. Suffixal verbs with similar encyclopedic content may subcategorize for different argument structures. One example is the contrast between two different desiderative

verbs in Hiaki. Whereas desiderative *-ii'aa* 'want (tr)' requires a complement clause in which matrix and embedded subjects are non-coreferent, *-pea* 'feel like' requires coreference between matrix and embedded subjects, which we analyze below as involving controlled embedded PRO:

- (7)
- | | | | | |
|----|----------------------------|----------------|-----------------|--|
| a. | Peo | [Maria-ta | bwiik]-ii'aa | |
| | Pete | [Maria-ACC | sing]-want | |
| | 'Pete wants Maria to sing' | | | |
| b. | Inepo | bwiik-pea | | |
| | I | sing-feel.like | | |
| | 'I feel like singing' | | | |
| c. | *Inepo | [Maria-ta | bwiik]-pea | |
| | I | [Maria-ACC | sing]-feel.like | |
| | 'I'd like Maria to sing' | | | |
| d. | *Jason | tahkai-m' | ii'aa | |
| | Jason | tortilla-PL | want | |
| | 'Jason wants a tortilla' | | | |
- Escalante (1990: 13[26])

Despite their semantic similarity, then, these verbs impose distinct restrictions on their complements, typical of light verbs according to Butt (1993). The overwhelming majority are clearly not auxiliaries, which do not impose such selectional restrictions or contribute lexical-semantic (argument structural) content.

Butt notes that serial verbs share arguments, often object arguments, whereas light verbs do not. No Hiaki suffixal verb involves object sharing. Although some involve what might be called 'subject sharing', as in (7b), we analyze such cases as straightforward control structures, parallel to their well-understood equivalents in Indo-European languages.

Every member of a serial verb construction may display agreement features with a single shared argument, as in coordination. Light verb constructions, on the other hand, may only display agreement on the light verb. We can see this in some Hiaki light verbs which display number agreement with their argument via suppletion (Harley *et al.* 2009). Suppletive verbs exhibit two different roots, a singular root and a plural root (8).

- (8)
- | | | | | | |
|----|-----------------------------------|---------------|-------|--------------|--|
| a. | <i>Uu</i> | <i>uusi</i> | aman | <i>vuite</i> | |
| | DET | child | there | run:SG | |
| | 'The child is running there.' | | | | |
| b. | <i>Ume</i> | <i>uusi-m</i> | aman | <i>tenne</i> | |
| | DET.PL | child-PL | there | run:PL | |
| | 'The children are running there.' | | | | |
- Tubino Blanco (2011: 198[53])

When one member of a V-V combination is a suppletive verb, it shows agreement with its own argument only, not with the argument of the other V in the structure (9):

- (9) a. *Maria* [vaso-ta nuk]-*siika*
 Maria [glass-ACC take]-go:SG:PERF
 'Maria picked up the glass/went along taking the glass'
- b. *Maria* [vaso-m nuk]-*siika*
 Maria [glass-PL take]-go:SG:PERF
 'Maria picked up the glasses/went along taking the glasses' Guerrero (2004:99[72])

The sentences in (9) show a kind of V-V complex in Hiaki in which a motion verb (*siime* 'go') is combined with a main verb and its internal arguments, typically indicating manner of motion. While Baker (1989) argues that serial verbs share both subjects and objects, it is clear from (9) that suppletive verbs in Hiaki do not share arguments. Rather, the motion verb *siika* 'go:sg:perf' only agrees with its own argument, the matrix subject *Maria*. We know this because even though the number of the embedded argument *vaso* 'glass' changes in (9a-b), the affixal verb remains singular, in agreement with the matrix subject. Only when the number on the subject of 'go' becomes plural does the affixal verb supplete:

- (10) *Ume haamuch-im* [vaso-ta nuk]-*saha-k*
 the:PL woman:PL [glass-ACC take]-go:PL-PERF
 'The women picked up the glass/went along taking the glasses'
- Guerrero (2004: 99[72c])

Moreover, number agreement in Hiaki is not determined in the TP layer, but it is rather determined in the vP layer. That is, it is the argument structure of the suppletive verb which determines whether suppletive agreement appears, rather than the grammatical function of the agreeing DP. This is clearly seen in (11).^{iv} Passivized sentences obligatorily require plural suppletive verbs, regardless of the number of their derived structural subject. It is a general requirement of Hiaki that impersonal arguments trigger plural agreement; the understood agent of this passive thus requires a plural verb form, no matter the number of the grammatical subject. Note that *uu vaso* does not exhibit accusative marking in (11), in contrast to (10), indicating its status as a true subject argument. Nonetheless, *uu vaso* cannot control singular agreement in (11b), suggesting that this complex verb patterns like light-verb complexes rather than serial-verb complexes.^v

- (11) a. *Uu vaso nuk-saka-wa-k*
 the glass take-go:PL-PASS-PERF
 'The glass was picked up'
- b. **Uu vaso nuk-siime-wa-k*
 the glass take-go:SG-PASS-PERF
 'The glass was picked up' Guerrero (2004: 100[73])

The facts just seen suggest that the verbs involved in Hiaki V-V constructions pattern with light verbs rather than with serial verbs. Each element clearly contribute to the joint argument structure of the complex predicate, and

an agreeing V in a V-V complex selectively agrees with only its own arguments, unlike serial verbs. Additionally, serial verb structures typically disallow inflectional tense (Svenonius 2008), which is inconsistent with the behavior of Hiaki affixal verbs as seen throughout this paper.

3.2 Butt's generalization: Hiaki verbs with both heavy and light uses

The key defining characteristic of light verbs according to Butt (1993) is what Svenonius (2008) refers to as 'Butt's generalization':

(12) Butt's generalization

Every light verb has a main verb use, which is phonetically identical to the light verb

This is also the criterion Escalante (1990) uses to distinguish 'compound' from 'complex' V-V sequences in Hiaki. Hiaki suffixal verbs that may also be used independently (as in (2) above) are classified by Escalante as 'compound', whereas V-V combinations that are purely suffixal (as in (3)) fall into the 'complex' class. Escalante points out that some properties are shared by both classes. For example, a transitive rightmost V in a V-V combination requires independent, overt subjects in both the matrix and complement clause (see (1) above), regardless of its classification as 'complex' or 'compound'. The requirement for an 'inner' subject to be in the accusative case is another characteristic shared by both type of V-V combinations. This behavior contrasts with that of conjoined clauses, where both verbs are tensed and each verb takes a nominative subject as in (13):

- (13) *empo* ye'eka, *aapo* into bwiika-k
 you:NOM sing-PERF he:NOM and dance-PERF
 'You sang and he danced'.

Escalante (1990: 12[6])

Escalante's criteria for the 'compound' classification prefigures this key diagnostic for light verb status proposed in Butt (1993). This 'hybrid' status is typical of many suffixal verbs in Hiaki. In (14-15) we show examples of two affixal verbs in both their suffixal and 'heavy' versions:

(14) (-)*mahta* 'teach'

- | | | | |
|----|--|--|---|
| a. | Jason
Jason-NOM
'Jason taught the child to take care of pigs.' | [uusi-ta
[child-ACC
[koowi-m
pig-PL | sua-] mahta -k
care.for-]teach-PERF |
| b. | Jason
Jason-NOM
'Jason taught the child to take care of pigs.' | [uusi-ta
[child-ACC
[koowi-m
pig-PL | sua-ne-vetchi'ivo] aa= mahta -k
care.for-IRR-COMP] him=teach-PERF |

The verb *mahta* 'teach' has an extensive use as a suffixal verb, as in (14a) but it may also be used independently as a main verb, as in (14b), taking a complement clause headed by the complementizer *vetchi'ivo* 'for'.

(15) (-)*naate*

- a. Ume pahkola-m i'an huubwa **naate**
 the:PL pascola-PL now just start
 'The pascolas are just starting now.'
- b. Santos i'an huubwa [hippon]-**naate-k**
 Santos now just [play]-start-PERF
 'Santos is just now starting to play.'

The aspectual verb *naate* 'start' also exhibits a heavy use (15a) and a light verb use (15b). Other aspectual verbs of this kind in Hiaki are *hapte*, 'start/stand (plural subject)' and *yaate* 'stop'. The aspectual meaning contributed by these verbs also suggests that these verbs are natural candidates for an analysis as light verbs.

Other examples where a suffixal/independent (light/heavy) alternation appears include (-)*vicha* 'see', (-)*siime* 'go (sg)' /(-)*saka* 'go (pl)', (-)*e'a/eiya*, 'feel', (-)*maachi* 'appear', and (-)*weye* 'walk, wander'. In discussing such optionally suffixal, 'hybrid' verbs—the ones which satisfy Butt's Generalization—we will indicate their optionally suffixal status by enclosing a hyphen in brackets: (-)*maachi*, (-)*vicha*.

3.3 Suffixal verbs with no heavy counterpart

As noted above, however, there are many V-V configurations in Hiaki in which the second V is *only* suffixal, i.e. has the formal status of a derivational suffix, with no heavy counterpart. Nonetheless, we claim that these too are light verbs. They exhibit the same V-V configurations and syntactic behaviors as their hybrid counterparts and they exhibit all the other properties highlighted by Butt as typical of light verbs.^{vi} We will suggest that the reasons why they lack a heavy counterpart are purely diachronic, as discussed in Dedrick & Casad (1999), but that this attrition is not enough reason to justify reclassification. They are perhaps en route to a different status as auxiliaries, but for the moment, retain all their other light verb characteristics, and are clearly not analyzable as auxiliary verbs. If they must be situated in one of the three categories of heavy verb, light verb, or auxiliary, they are clearly members of the light verb class. In addition to the example (-*ii'aa*, 'want') given in (3) above, we provide some further examples in (16-17) below, and exemplify others throughout.

(16) Causatives -*tua*, -*tevo*

- a. Apo [si yee va-vamih]-**tua**
 he [very people RED-hurry]-make
 'He always makes people hurry up'

- b. Aapo [hiva va-vamih]-**tevo**
 he [always RED-hurry]-have
 'He always has (people) hurry up' Tubino Blanco (2011:194[44])

Both causatives *-tua* and *-tevo* lack a heavy counterpart. However, they both contribute to the argument structure of the complex predicate by adding their own arguments, *aapo* 'he' in both sentences in (16). The indirect causative *-tevo*, in addition, affects the argument structure of the resulting complex predicate by suppressing the embedded subject (see Tubino Blanco 2011 for further discussion on this subject). Their argument structure is incomplete and requires a verbal complement to complete it, another property of light verbs (Butt 1993).

(17) *-se*, *-vo* 'go'

- a. [wero-ta aman ania]-**se**
 [white.man-ACC there help]-go:SG
 'He's going there to help the white man' Dedrick & Casad (1999: 295[18])
- b. [yeu-vit]-**vo**=te
 [play-see]-go:PL=we
 'We are going to see the game' Dedrick & Casad (1999: 296[25])

Unlike their hybrid counterparts *siime* 'go:SG' and *saka* 'go:PL', *-se* and *-vo* are mandatorily suffixal. The V-V complexes they form are both structurally and semantically similar to their hybrid counterparts, however. The primary difference seems to be that *-se* receives a purposive, future-oriented reading, perhaps consistent with the notion that it is farther along the diachronic path to auxiliary status than *siime/saka*. Other examples of suffixal verbs without heavy counterparts include *-pea*, 'feel like', *-le*, 'think/find', and *-roka*, 'say, quotative'.

Some verbs are suffixal 99% of the time, and are judged ungrammatical in isolation during elicitation, but occasionally are found functioning unexpectedly as the stem, rather than the suffixal, element of a V-V complex—that is, they appear to be able to function as a main verb as well as as a suffix in some contexts. One such element is *-taite*, 'start':

(18) **taite** 'start'

- a. Ili uusi [bwan]-**taite**-k
 little child [cry]-start-PERF
 'The child started to cry' Guerrero (2004:32[37])
- b. *Ili uusi aman taite-k.
 little child there start-PERF
 'The little child started there.'
- c. Uu yoeme ili chopo'oku kom vuite-ka-su **taiti**-kikte-k^{vii}
 the man little hill down run.sg-PPL-while start-stand.sg-PERF
 'The man, while running (out of control) down the little hill, stopped abruptly'
 (e.g. almost overbalancing)

The (mostly) suffixal verb *-taite* 'start' has the same V-V configuration and semantic properties as its heavier hybrid counterparts *naate* 'start' (see (15) above), *hapte* 'start, stand up', and *yaate* 'stop', i.e. taking a verbal complement in a subject control structure. Semantically, both *-taite* and its hybrid counterparts are inceptive aspectual markers. Even if *-taite* lacks a heavy counterpart, it should be analyzed as a light verb.

Another such case is *-vae*, whose interpretation varies from (intransitive) 'want' to a prospective 'going-to' like meaning. In nearly all descriptive work on the language, it is classified as suffixal only. However, it can occasionally be found functioning as stem, i.e. as a main verb, as in (19) below:

- (19) **vae-ka** huni'i nee kaa *vaa-vae-k*^{viii}
 want-PPL even I NEG want-want-PERF
 'Even though I wanted to, I didn't want to want to' Dedrick & Casad (1999:296[29])

In sum, we have shown that Hiaki suffixal verbs that participate in V-V configurations meet Butt's diagnostics for light verbs to different degrees. However, when suffixal, all share the following key properties: a) They select for the verb to which they attach (e.g. (7)), b) they contribute non-grammatical, lexical-semantic content to the sentence of which they form a part (e.g. (16)), c) they only agree with their own arguments, not those of the verb to which they attach (e.g. (9), (10)), and d) (when relevant) their argument structure augments the argument structure of the base predicate, rather than sharing it or being eliminated (e.g., (7) and others).

Many Hiaki suffixal verbs also meet the key criterion of Butt's generalization, that is, they have heavy counterparts. Others, however do not. The ones which do not satisfy Butt's generalization nonetheless are not auxiliary-like in their behavior, as they still have properties a)-d) above. Because even purely suffixal verbs in Hiaki seem to pattern with light verbs, we conclude that they should be analyzed as light verbs.

In the next section, we will expand on this point and provide an analysis of the structure which produces the V-V configuration in Hiaki.

4. The analysis: V-V configurations embed vP or VP, never TP

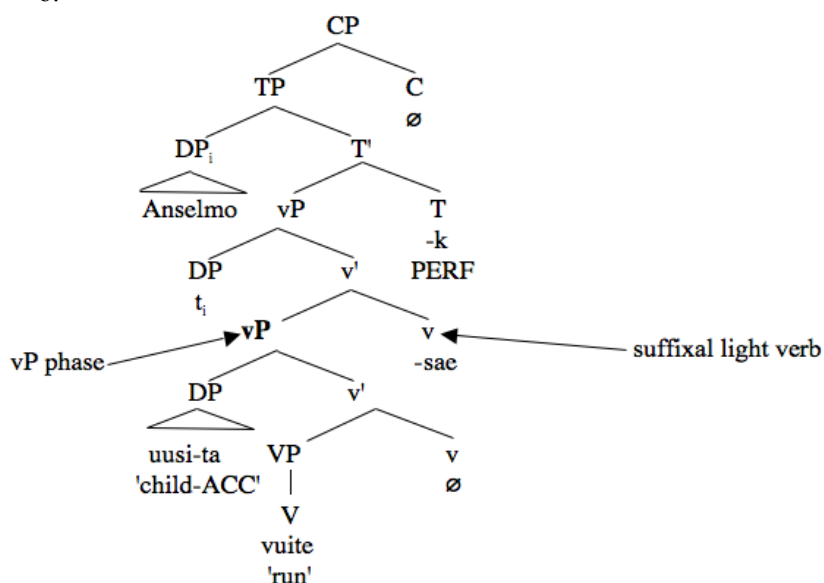
The structure of V-V configurations in Hiaki is typical of the cases described in early transformational literature (e.g., Shibatani 1975) as complex predicates: biclausal at the function level and monoclausal at the surface level (Kuroda 2002: 458). According to earlier approaches, such sentences started as complex at Deep Structure and became a simple clause at Surface Structure after transformations. As noted in section 2 above, such structures typically exhibit complex clause behavior regarding argument-structure phenomena like binding (6), whereas they exhibit a monoclausal pattern with respect to case assignment (5).

We argue, following Baker (1988), Wurmbrand (2007) and Tubino Blanco *et al.* (2009), among many others, that this is the result of a configuration in which the matrix verbal element takes as its complement a phrasal structure smaller than TP. Affixation occurs when the head of the embedded clause incorporates into the matrix verb—here, a light verb, hence of category *v*. We frame our analysis within a Minimalist framework (Chomsky 2000 *et seq*), making crucial use of the notion of a phase, or cycle.

Following Lee-Schoenfeld (2011) we argue that the biclausality effect is derived when the structure embedded by the matrix verb (i.e., the suffixal verb, the rightmost verb in the V-V complex) is a minimal agentive phase (vP). In the case of transitive affixal verbs such as *-tua*, 'make', *-ii'aa* 'want (tr)', *sae* 'order', or *(-)mahta*, 'teach', this explains the presence of two notional subjects but just one structural subject. We repeat example (1) as (20a), and illustrate its proposed structure in (20b).

- (20) a. Anselmo [uusi-ta vuiti]-sae-k
 Anselmo:NOM [child-ACC run]-order-PERF
 'Anselmo told the child to run.'

b.



(20b) accounts for the structural facts of examples like (20a). The structure contains a single CP phase (the matrix CP) and hence only one TP, which predicts the occurrence of only one nominative argument/structural subject (in this case, *Anselmo*). It also predicts that Tense is morphologically marked once only, in the outer/higher/rightmost verb. In this sense, the clause is monoclausal (one Case/Tense/Aspect domain).

However, a structure like (20b) also explains why such examples appear to be biclausal with regard to other phenomena, e.g., binding. Because the complement of *-sae* 'order' is a vP phase (Chomsky 2000), it creates a propositional clause boundary, because it contains the complete argument structure of the embedded verb, including the agent (a notional subject). Binding domains are demarcated by complete argument structure

complexes (the equivalent of Shibatani's 'function level', or the 'Complete Functional Complex' of Chomsky 1986), which in modern Minimalism is established by the vP phase.

In her account of binding in German infinitival complements, Lee-Schoenfeld (2011) observes that transitive and ergative complements behave differently than unaccusative complements regarding binding of pronominals. A matrix subject may bind pronominals within a transitive or unergative complement—complements which contain an agent argument in spec-vP—but not within an unaccusative complement, which lacks an external argument. She therefore identifies vP as a binding domain and concludes that the binding conditions A and B of Chomsky (1981) should be constructed as follows:

- (21) a. A reflexive must be bound in its phase
 b. A pronominal must be free in its phase^{ix} Lee-Schoenfeld (2011: 191[19])

This generalization is confirmed in Hiaki V-V incorporation structures under the assumption that transitive suffixal light verbs embed a vP phase. In Hiaki, these structures are characterized by the fact that the nominative subject of the matrix verbal affix cannot bind a reflexive in the object position of the embedded verb domain, though it can bind a pronominal in that position. The application of this theory to the Hiaki data in (6) above is provided below; for the reader's ease of reference, we repeat the data as (22).

- (22) a. Heidi_i [Art-ta₂ au_{*1/2}=sua]_{vP}-mahta
 Heidi:NOM [Art-ACC 3SG.REFL=care.for]-teach
 'Heidi teaches Art to take care of himself/*her.'
 b. Heidi_i [Art-ta₂ aa_{1/*2}=sua]_{vP}-mahta
 Heidi:NOM [Art-ACC 3SG=care.for]-teach
 'Heidi teaches Art to take care of her /*himself.'

In (22a), the anaphor *au*, 'himself/herself' is contained in the embedded vP phase. According to Lee-Schoenfeld's proposal that the phase is a binding domain (21a), the anaphor needs to be bound within its own minimal phase, and the accusative vP agent *Art-ta* 'Art' can satisfy this requirement. The matrix subject *Heidi*, however, cannot bind this anaphor, because it is outside the anaphor's minimal phase boundary. Similarly, the binding facts in (22b) conform to the Lee-Schoenfeld's proposal in (21b). The binding domain of pronoun *aa* '3sg' in (22b) is the minimal vP phase in which it is contained, [*Artta aa sua*]_{vP} 'Art to take care of her'. Consequently, if the matrix subject *Heidi*, in a higher vP phase, is coindexed with it, it is nonetheless still free in its domain.

In his analysis of Hiaki argument structure, Escalante (1990) also notices this binding pattern. In his example, repeated below as (23), the suffixal verb involved is *mandatorily* suffixal, a light verb with no heavy counterpart: the Hiaki direct causative affix *-tua*. Nonetheless, the binding facts are the same:

- (23) Aapo₁ [Peo-ta₂ au*_{1/2}=vekta]_{vP} -tua-ne
 3SG.NOM [Pete-ACC 3SG.REFL=shave]-CAUS-FUT
 'He will make Pete shave himself.'
 Escalante (1990: 12[17])

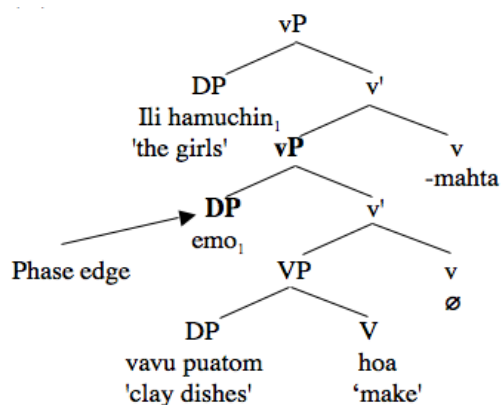
We propose that this pattern, like that in (22), is due to the presence of two vP phases in the structure. In (23), just like in the sentences above, the reflexive *au* 'him/her/itself' is bound within its own minimal vP phase by the complement subject *Peota* 'Pete(acc)'. It may not be bound by the matrix subject *aapo* 'he', since this element is beyond the anaphor's phasal boundaries. We see then that *-tua* 'cause' (mandatorily suffixal) and *(-)mahta* 'teach' (optionally suffixal) exhibit identical structural behavior.^x

What of the embedded subject? What binding domain does it form part of? In Hiaki, coreference between the subject of the matrix and an anaphor subject of the embedded clause in a V-V construction is possible. We show two examples in (24), one with suffixal *-tua*, another with hybrid *(-)mahta*:

- (24) a. *Inepo*₁ [*ino*₁ bwiik]-tua-vae-n, taa=ne kaa aa bwiika-k
 I [myself sing]-CAUS-want-IMPF, but=I NEG able sing-PERF
 'I wanted to make myself sing, but I wasn't able to sing.'
 Escalante (1990: 12[16])

- b. *Ili hamuch-in*₁ [vavu puatom *emo*₁ hoo]-mahta
 little woman-PL [clay plates REFL make]-teach
 'The girls are learning to make clay dishes, *lit.* They are teaching themselves to...'
 Estrada *et al.* (2004: 134))

The matrix subjects *Inepo* 'I' (24a) and *Ili hamuchin* 'the girls' (24b) bind reflexives in the embedded subject position, *ino* and *emo* respectively.^{xi} This is not a problem for our analysis, however. As Lee-Schoenfeld (2011) points out, in phase theory (Chomsky 2000 *et seq*), material in a phase edge (here Spec-vP) remains accessible to the higher phase following spell-out of the complement of the phasal head. In the case of (24b), this is clear. Let us consider its structure, given in (25).^{xii}

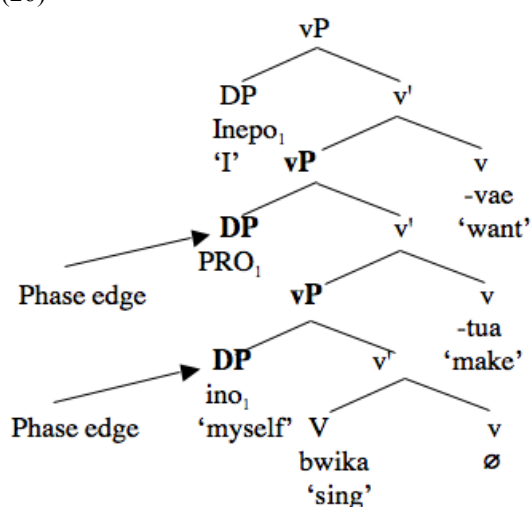


(25)

In (24b) the matrix subject *ili hamuchim* 'the girls' can bind the anaphor *emo* 'self' because the latter is at the phase edge, which leaves it active and available for operations in the higher phase (Chomsky 2000).

The facts in (24a) may appear problematic at first glance, since the example involves multiple embeddings. The desiderative suffix *-vae* 'want (intr)' takes the compound verb *bwik-tua*, 'sing-make' as its host; the latter is itself a V-V complex involving complementation. The anaphor *ino* 'myself', in the embedded subject of *bwik*, 'sing', thus appears to be more than one phase boundary away from the matrix subject that binds it, if *vae* embeds a vP as well as *-tua*. However, if we analyze (24a) as a control structure, analogous to its English counterpart, the apparent problem evaporates. We illustrate our proposal in (26).

(26)



The analysis in (26) shows three coindexed DPs: the matrix subject of *-vae* 'want' *inepo*, the intermediate DP PRO, subject of *-tua*, and the anaphor *ino*, subject of *bwika* 'sing'. Since the matrix subject *inepo* 'I' mandatorily controls its immediately embedded subject, PRO, both subjects end up coindexed with the deeply embedded anaphor *ino*, which is bound in its phase by the PRO subject of *-tua* and hence satisfies Lee-Schoenfeld's version of Principle A. This analysis will apply to the syntax of all subject control light verbs like *-vae* 'want', including *-pea* 'feel like', whose subject obligatorily controls the subject of the structure they embed.

4.1 Agentless embedded clauses: VP embedding in *-tevo* causatives

Some V-V combinations in Hiaki, however, involve complements that lack an embedded subject, but where the absent subject is *not* controlled, instead receiving an impersonal/existential interpretation. This is the case of the indirect causative suffix *-tevo*.

The indirect causative *-tevo* creates a sentence analogous to the 'Faire Par' causatives of Romance languages (Kayne 1975). It introduces a causer argument and a caused event, and asserts that the causer caused

the event to occur. However, the agent subject of the caused event is necessarily suppressed, and a passive interpretation, with an understood agent, is given to the embedded clause. An example is given in (27):

- (27) Aapo [Peo-ta vekta]-tevo-ne.
 3SG Pete-ACC shave-have-FUT
 'He will have Pete shaved (by person or persons unspecified).'

What is the category of the embedded clause under *-tevo*? If it is a vP phase, with a syntactically active null pronoun saturating the external argument position, the prediction is that an anaphor in embedded object position would necessarily be bound by the null agent. If the embedded agent is syntactically truly absent, however, and the embedded clause is smaller than a vP phase, we predict that binding of an anaphor in the embedded object position by the matrix subject argument should be possible.^{xiii}

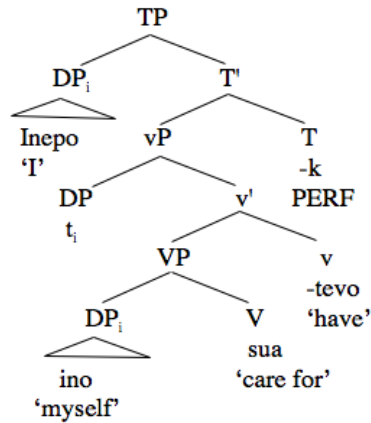
In fact, when an anaphor is present in the complement of *-tevo*, it is always bound by the matrix subject (28a). A pronoun in the complement of *-tevo* cannot be coindexed with the matrix subject (28b).

- (28) a. **Inepo**₁ [**ino**₁ sua]_{VP} -tevo
 I [myself take.care]-have
 'I'm having myself taken care of.' (e.g. I've hired someone guard me)
- b. Maala₁ [**aa***_{1/2} yevih]_{VP} -tevo-k.
 mother [3SG arrive:SG]-have-PERF
 'Mother had him brought' (e.g., to the house, by someone unspecified)

The anaphor *ino* 'myself' in (28a) is bound by the matrix subject *inepo*, 'I', while the pronoun *aa* 's/he' in (28b) may not be bound by the matrix subject *maala* 'Mother'. (In no case may the object of the embedded verb be bound by the understood impersonal agent of the embedded clause, producing an interpretation such as 'I'm having people guarded (by themselves)/I'm having people guard themselves.') That is, unlike in (24b) above, there is no embedded PRO subject which can bind the lower anaphor in object position.

The facts in (28) suggest that the complement of *-tevo* is not a binding domain. In other words, it must be smaller than a vP phase. We propose that *-tevo* takes a VP complement, following Folli and Harley (2007) and Ippolito (2000) for Romance *faire par* constructions. The embedded phrase hence lacks vP and an embedded external argument, and receives a passive-like interpretation. This structure is illustrated in (29):

(29)



Thus, V-V constructions in Hiaki can involve either vP or VP complements, the former containing external arguments, the latter lacking them. If they contain embedded subjects they form a binding domain as a vP phase. If their embedded subject is absent, then the complements are smaller than vP and accordingly their anaphors will be bound within the matrix binding domain. What is consistent across all the cases we have seen so far, however, is that they always take complements smaller than TP. We next turn to some further motivation for the absence of embedded TP in V-V constructions.

4.2. Negation

We have shown that V-V incorporation complexes in Hiaki exhibit monoclausal behavior in the sense that only one argument may be nominative and only the outer verb may be marked with tense/aspect suffixes, and we attributed this behavior to the hypothesis that such structures only contain one CP/TP domain. The behavior of the complexes regarding negation further supports this proposal. As the sentence in (30) shows, the inner event in Hiaki V-V complexes cannot be negated independently of the outer event.

- (30) Inepo **kaa** [enchi siim]-**sae**-n
 I NEG [you:ACC leave]-order-IMPF
 'I didn't tell you to leave / #I told you not to leave' Escalante (1990: 13[29a])

We can understand this restriction if Hiaki negation is located at the CP/TP level (as in Irish or Catalan), rather than at vP (as in English). In V-V incorporation complexes, then, negation behaves as in a simplex clause: it can only negate the complex as a whole, since there is only one CP/TP phase available to host it:

- (31) Santos uka kava'i-ta **kaa** (aa) chepti-**mahta**-k
 Santos DET:ACC horse-ACC NEG (3SG) jump-teach-PERF
 'Santos didn't teach the horse to buck / #Santos taught the horse not to buck'

The only way to negate the embedded event in Hiaki is by using a separate and explicitly subordinated clause. In (32) below, a purpose clause is negated and postposed with 'heavy verb' *mahta* to give a translation equivalent for 'Santos taught the horse not to buck' (cf. 31).

- (32) Santos uka ili kava'i-ta mahta kaa aa=chepti-ne-vetchi'ivo
 Santos DET:ACC little horse-ACC teach NEG 3SG-jump-IRR-COMPL
 'Santos taught the little horse not to buck' (Lit. Santos taught the little horse so that it wouldn't jump)

If negation in Hiaki is CP or TP negation, rather than vP negation, this is predicted by the analysis.^{xiv}

4.3. No T/A/M suffixes between the incorporated verb and the verbal suffix

As noted above, no Tense, Aspect or Mood material may intervene between the different verbs in V-V incorporation contexts. This further suggests that all verbs must share a single outer TP phase. We show an example of the restriction in (33).

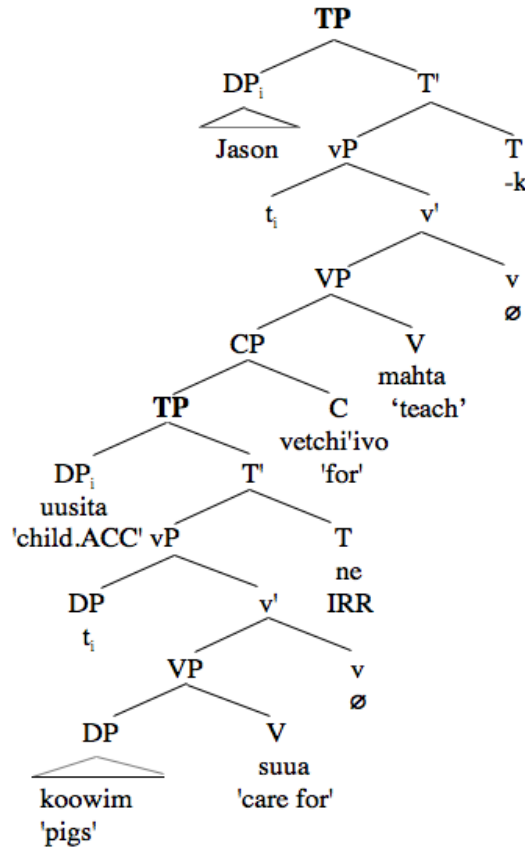
- (33) Jason [uusi-ta koowi-m sua-(**ne*)]-mahta-k
 Jason:NOM [child-ACC pig-PL care.for-(*IRR)]-teach-PERF
 'Jason taught the child to keep pigs.'

The hybrid (-)*mahta* 'teach' in (33) is one of the affixal verbs in Hiaki that exhibits an independent counterpart. Nonetheless, when this verb participates in a V-V incorporation construction no T/A/M material (e.g., the irrealis suffix *-ne*) may appear between the verbs. The sentence becomes grammatical in the absence of the suffix.

When used as an independent full-fledged verb, as in (32) above, *mahta* 'teach' becomes opacity-inducing in the sense of Wurmbrand (2001): it takes a complement clause introduced by the preposition/complementizer *vetchi'ivo* 'for', and allows T/A/M material in that clause. This indicates the presence of a second CP/TP phase in the embedded domain of these constructions. We see the structure in (34):

- (34) a Jason [uusi-ta koowi-m sua-*ne-vetchi'ivo*] a=mahta-k
 Jason:NOM [child-ACC pig-PL care.for-IRR-COMP] him=teach-PERF
 'Jason taught the child to keep pigs.'

b.



The difference between the structure of V-V incorporation complexes and that in (34) is obvious: only in the latter case does the embedded structure involve a second CP/TP layer. This allows the presence of T/A/M suffixes on the embedded verb. The contrast between sentences like (34) and V-V incorporation complexes is one more piece of evidence that V-V incorporation constructions involve something less than TP embedding.^{xv}

We have seen some evidence for an analysis in which V-V constructions in Hiaki involve a verbal affix that takes a vP or VP as its complement. Thus, while the V-V construction disallows more than one instance of Tense or Aspect (which has an impact on the behavior of negation and case), it can allow two binding domains.^{xvi} Lastly, we turn to consider the implications of the analysis for certain morphological characteristics of Hiaki.

5. Morphological correlates of vP and VP embedding

The analysis proposed above has implications for certain morphological processes in Hiaki, notably the distribution of bound and free stem forms, and also the application of the robust reduplication processes available in the language. We consider each of these in turn below.

5.1. Phases and bound stems in Hiaki

As noted above in section 2, the leftmost (stem) V in a V-V structure in Hiaki has to surface in a special 'bound stem' form. As discussed earlier, most Hiaki word-forms exhibit two differentiated stem forms that are in complementary distribution. Harley & Tubino Blanco (2010) show that whereas inflectional affixes generally attach to free stems, derivational affixes attach to bound stems (35).

- (35) a. Hoan pueta-ta poona-k T/A/M affix *-k*: Free stem
 Juan door-ACC beat-PERF
 'Juan knocked on the door'
- b. Hoan Maria-ta pueta-ta pon-tua-k Causative suffix *-tua*: bound stem
 Juan Maria-ACC door-ACC beat-CAU-PERF
 'Juan made Maria knock on the door'
- Harley & Tubino Blanco (2010:102[6])

These authors argue that the external-argument-introducing projection (Kratzer 1994) marks the conditioning environment for Hiaki bound stems—that is, that Hiaki bound stems occur only when embedded by material at the vP level or below. Free stems occur when a vP is embedded by T. There is always only one free stem present in a V-V complex, and it is always the rightmost V in the complex, the one adjacent to T/A/M marking, if any—just as there is only one tense marking, one scope for negation, and one case domain. The fact that free stems are conditioned by T, and only a single free stem form may appear per compound, again suggests that only one TP is present in these clauses.

5.2. Reduplication

We conclude with a discussion of a morphological phenomenon of Hiaki that poses something of a conundrum for our analysis. Reduplication is used in Hiaki to morphologically mark habitual or progressive/iterative aspect on verbs, and also to mark emphasis. It typically occurs as a prefix that copies the first syllable of the verb stem it reduplicates. We show an example in (36).

- (36) Uu hamut toto'i kava-m **bwa**-bwata
 the woman chicken egg-PL RED-stir
 'The woman is mixing the eggs'
- Haugen & Harley (forthcoming:7[3b])

The example in (36) is an instance of reduplication to mark progressive/iterative aspect. Reduplication is a very productive process in this language. Naturally, it also appears in V-V incorporation cases.

Given our analysis, and because reduplication semantically affects the aspectual interpretation of events, predicting which member of a V-V compound reduplication applies to is not an easy task. On the one hand, we

In fact, Hiaki V-V compounds do allow reduplication, robustly, not only on the right-most (suffixal) verb, but also on the left-most embedded verb. We show this in (37).

- In the sentences in (37) above, we see that reduplication can target either member of the compound, the incorporated, leftmost verb (37a) or the suffixal, rightmost verb (37b). Moreover, Haugen & Harley (forthcoming) show cases in which *both* members of the V-V complex may be reduplicated:

- Haugen & Harley argue that, whenever reduplication occurs word-internally (i.e., when it is a prefix on the rightmost, suffixal verb), it scopes over the whole V-V complex. Whenever it occurs on the leftmost incorporated verb, it just affects the embedded event:

- 20

If reduplication is the realization of a regular Aspect projection, however, our analysis as it stands faces difficulties. We have seen that there can only be a single Tense domain in a V-V compound, and have correlated that behavior with the presence/absence of bound stems, claiming that inflectional embedding conditions a free stem, while derivational embedding conditions bound stems. If reduplication headed an AspP projection, outside the vP domain, it should count as inflectional. However, reduplicated stems of embedded verbs, as in (39b), are still bound. Further, reduplication is possible on the complement of *-tevo*, the indirect causative which we showed above lacks even the vP domain boundary in its complement:

- (40) Aapo hiva Maria-ta-u chat-chae-tevo
 3sg always Maria-ACC-to RED-call-CAUS.INDIR
 'She is always having Maria called'

Reduplication, then, is possible at the VP level, *within* the vP phase. The locus of reduplication, then, must be different from the outer/higher TAM phrase that hosts the perfective, past imperfective, and past perfective suffixes *-k*, *-n*, and *-kan*. (Note that reduplication is not in complementary distribution with these suffixes, either, as in (37b) above)

Verbal reduplication, then, can apply to either vP or VP. We hypothesize, with Harley and Leyva (2009), that its semantic contribution is more pluractional than habitual, entailing a plurality of events, which is intuitively consistent with its progressive/iterative and emphatic interpretations. It does not select for a particular category (vP or VP), but can adjoin to any projection with an appropriate event-denoting interpretation.

It is worth noting that while some purely suffixal Hiaki verbs, such as *-ii'aa* 'want', in (a and c), and *-pea*, 'feel like', can undergo reduplication, many of the suffixal verbs (such as *-tua*, the causative, and *-tevo*, the indirect causative) cannot. In such cases, the reduplicant always is prefixed to the embedded, leftmost, main verb, even though it may scope over the matrix event. We assume for the moment that this is a purely morphophonological effect, not a diagnostic for (non-)light verb status for these purely suffixal verbs. It is not unusual for the base of reduplication to be subject to a size requirement; it may be the case that the suffixal verbs which resist reduplication morphophonologically undersized, though we will have to confirm this hypothesis with further investigation.^{xvii} See Harley and Leyva (2009) and Haugen and Harley (forthcoming) for extensive discussion of the properties of reduplication in Hiaki.

6. Conclusion

Structures involving V-V incorporation are interesting objects of study due to their unusual syntactic structure and the restricted class of verbs that participate in them. We hope to have shed some light on these structures by closely looking at different V-V incorporation constructions in Hiaki. We have concluded that, regardless of whether the suffixal verbs participating in them also have non-suffixal uses, all V-V configurations in Hiaki are complex predicates in which an affixal light verb takes complement vP or VP, but not a TP. We further showed that the suffixal verbs participating in these structures satisfy Butt's (1993) diagnostics for 'light verb' status, though we expand Butt's category to include even cases where the matrix verb is mandatorily suffixal. This is because mandatorily suffixal verbs in Hiaki exhibit structural and semantic properties not typical of auxiliaries or serial verbs, but rather are characteristic of light verbs—even those light verbs in Hiaki which *do* satisfy Butt's Generalization in having a non-suffixal counterpart. The failure of purely suffixal verbs to meet Butt's generalization is the result of grammaticalization processes underway in Hiaki, in which light verbs can lose their heavy counterpart without affecting their own status as a light verb. To what extent grammaticalization of this kind is cross-linguistically attested, and what factors lead to it, is a question that needs to be further explored.

Notes

We are indebted to our consultants Maria Florez-Leyva, Santos Leyva and Melquíades Bejipone Cruz for all their help in this research. We also extend our gratitude to the two anonymous reviewers whose comments helped improve this paper very much. This research is partially supported by the NSF Award No. BCS-0131761. Unattributed data in this paper were collected during the course of this project.

ⁱ Hiaki (also known as Yaqui, Yoeme) is a Uto-Aztecan language spoken in Sonora, Mexico and Arizona, U.S. Hiaki is endangered in Arizona, with 70-80 speakers. In Sonora, Hiaki is spoken by about 14,000 people (Ethnologue 2012).

ⁱⁱ Gloss: 1: 1st person; 3: 3rd person; ACC: accusative; CAU: causative; COMP: complementizer; CPL: completive; DET: determiner; FEM: feminine; FUT: future; IMPF: imperfective; INCL: inclination; INST: instrumental; IRR: irrealis; LOC: locative; NEG: negation; NOM: nominative; PERF: perfective; PL: plural; PPL: Past participle; RED: reduplication; REFL: reflexive; SG: singular; SUBJ: subject; TR: transitivizer; WH: interrogative.

ⁱⁱⁱ For the sake of consistency, all data from sources using Sonora Yaqui spelling conventions have been respelled according to the Arizona Hiaki conventions.

^{iv} Number agreement in Hiaki is not invariably triggered by subjects. While it is indeed triggered by intransitive subjects, objects rather than subjects trigger it in transitive sentences:

(i) Aapo *uka kowi-ta mea-k*
 3SG DET:SG pig-ACC kill:SG-PERF
 'He killed the pig'

(ii) Aapo *ume kowi-m sua-k*
 3SG DET:PL pig-PL kill:PL-PERF
 'He killed the pigs'

Harley *et al.* (2009:43[2])

v For further illustration of suppletive number agreement in Hiaki and its interaction with passives, causatives and applicatives, see Harley *et al.* (2009) and Tubino Blanco (2010).

vi However, see the discussion of reduplication in section 5.2 below.

vii The form *-taiti-* is the bound stem alternant of *-taite*, see the discussion of example (4) above.

viii The form *-vaa-* is the bound stem alternant of *-vae*, see the discussion of example (4) above.

ix By 'its phase' she means the minimal phase containing the anaphoric element, here, vP.

x A reviewer appeals to the generally accepted nature of unaccusatives as non-phasal to ask whether verbs like *-tua* 'cause' and *-mahta* 'teach' should then be predicted to not take unaccusative complements, given their meaning. While this is an interesting and legitimate prediction, it is contrary to fact, as the following example shows:

Hose	Peo-ta	lauti	yevih-tua-k	
Hose	Peo-ACC	early	arrive:SG-CAUS-PERF	
'Hose	made Peo	arrive early'		Tubino Blanco (2011: 169[2c])

While verbs like *-tua* and *-mahta* take vP complements (i.e. embed external arguments), they may also take complements smaller than vP, as in the example above. However, we would not expect to see binding facts such as (22) here since unaccusatives take one argument only. The matrix subject would bind the embedded subject, as predicted in (21).

xi Note that object pronouns, anaphors included, are subject to cliticization to the left of the verb form, regardless of whether they are logical subjects or objects of the embedded clause. This cliticization is not usually orthographically indicated, but is mandatory nonetheless. It is due to this morphological requirement that *emo*, the embedded logical subject of (24b), linearly follows *vavu puatom*, 'clay plates', the embedded logical object.

xii For the sake of clarity, we will just include the event structure of the clause (the vP material). For structural reasons, the higher DP (the matrix subject) is raised to [Spec, TP] to check its tense features (Chomsky 1995).

xiii Although constructions with *-tevo* typically disallow overt agents, instances involving this causative suffix with an apparent agent are attested. See Tubino Blanco (2011) for further details.

xiv Alternatively, such a clause can apparently be introduced by the participializing suffix *-kai* as in the example below from Escalante. In this example, the outer verb *-sae* 'order' in the adjoined clause behaves as if semantically absent:

nee	enchi	tehhoa-kan,	[kaa	enchi	siim-sae-kai]
I	you:ACC	order-PIMPF	[NEG	you:ACC	leave-order-PPL]
'I told you not to go.'			Escalante (1990:13[29b])		

xv The presence of a second TP does not guarantee the licensing of a second nominative DP, evidenced by the accusative *uusi-ta* 'child-ACC' as the complement subject. This is a consequence of the non-finite status of the complement clause, as only finite tense heads have the ability to license nominative case in languages such as Hiaki (or English).

xvi This style of account, according to which the presence or absence of certain modifying elements such as negation depends on the presence or absence of the relevant chunk of syntactic structure (e.g. TP or CP), contrasts with the iconicity-

based approach advanced by Guerrero (2006). Guerrero proposes that the difference in modification possibilities between V-V affixation cases and clausal embedding cases with similar meanings is due to a principle according to which events that are conceived of by the speaker as more tightly connected (or identical) are represented with a more tightly connected syntactic structure, where V-V affixation is ‘tighter’ than clausal embedding. While more evidence is needed to contrast the present proposal with Guerrero’s iconicity account, the predictions of the structural account are clear-cut across the family of V-V constructions. Further testing with temporal adverbials and scope of negation for each suffixal verb, hybrid or not, should be able to tease the two proposals apart. See Haugen (2009) for discussion of some issues with an iconicity-based account.

^{xvii} It may also be relevant that we have observed that the Hiaki causative suffix *-tua* cannot iterate, morphologically; even in clauses where two causatives are expected, e.g. in a syntactic causative of a lexical causative, the second *-tua* is deleted, though both can be interpreted. See Tubino Blanco (2011) for further discussion. To date have not explored whether such iteration is possible for others of these suffixal verbs.

References

- Baker, Mark. 1988. *Incorporation: A Theory of Grammatical Function Changing*. Chicago: University of Chicago Press.
- Baker, Mark. 1989. Object Sharing and Projection in Serial Verb Constructions. *Linguistic Inquiry* 20: 513-553.
- Bowern, Claire. 2008. The Diachrony of Complex Predicates. *Diachronica* 25(2): 161-185.
- Butt, Miriam. 1993. The Structure of Complex Predicates in Urdu. Ph.D. Dissertation, Stanford University.
- Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: The MIT Press.
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. In Roger Martin, David Michaels, and Juan Uriagereka (eds.) *Step by step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, 89-156. Cambridge, MA: The MIT Press.
- Dedrick, John M. and Eugene H. Casad. 1999. *Sonora Yaqui Language Structures*. Tucson, AZ: University of Arizona Press.
- Escalante, Fernando. 1990. Voice and Argument Structure in Yaqui. Ph.D. Dissertation, University of Arizona.
- Ethnologue, SIL International. 2012. www.ethnologue.com, accessed Sept. 11, 2012.
- Folli, Raffaella, & Heidi Harley. 2007. Causation, obligation, and argument structure: On the nature of little v. *Linguistic Inquiry*, 38(2): 197-238.
- Folli, Raffaella, & Heidi Harley. 2012. The syntax of argument structure: Evidence from Italian complex predicates. *Journal of Linguistics*, 49(1): 93-125.

- Guerrero, Lilian. 2004. The Syntax-Semantic Interface in Yaqui Complex Sentences, a Role and Reference Grammar Analysis. Ph.D. Dissertation, The State University of New York at Buffalo.
- Harley, Heidi, & Maria Florez Leyva. 2009. Form and meaning in Hiaki (Yaqui) verbal reduplication. *International Journal of American Linguistics* 75: 233-72.
- Harley, Heidi & Mercedes Tubino Blanco. 2010. Dos tipos de base verbal en Hiaki (yaqui): Hacia una clasificación morfológica. In Rosa Ortiz Ciscomani (ed.) *Análisis Lingüístico*. Hermosillo: Unison Publicaciones.
- Harley, Heidi, & Mercedes Tubino Blanco. 2012. Cycles, Vocabulary Items and Stem Forms in Hiaki. Ms., University of Arizona.
- Harley, Heidi, Mercedes Tubino Blanco, & Jason D. Haugen. 2009. Applicative constructions and suppletive verbs in Hiaki. *Rice Working Papers in Linguistics* 1: 42-51.
- Haugen, Jason D. 2009. Review of *The Structure and Function on Yaqui Complementation*, by Lilián Guerrero. *International Journal of American Linguistics*. 75.1: 103-131.
- Haugen, Jason D. and Heidi Harley. (forthcoming) On the implications of head-marking inflection for the architecture of grammatical theory: Evidence from reduplication and compounding in Hiaki (Yaqui). In Bischoff, Shannon T., Deborah Cole, Amy V. Fountain and Mizuki Miyashita (eds.), *The Persistence of Language: Constructing and Confronting the Past and Present in the Voices of Jane H. Hill*. Amsterdam: John Benjamins.
- Ippolito, Michela. 2000. Remarks on the Argument Structure of Causatives. Ms, MIT.
- Kayne, Richard. 1975. *French Syntax*. Cambridge, MA: The MIT Press.
- Kuroda, Sige-Yuki. 2003. Complex predicates and predicate raising. *Lingua* 113: 447-480.
- Lee-Schoenfeld, Vera. 2011. From clause union to restructuring to beyond coherence. In Rodrigo Gutiérrez-Bravo, Line Mikkelsen, and Eric Postdam (eds.), *Representing Language: Essays in Honor of Judith Aissen*, 181-197. Santa Cruz, CA.: Linguistic Research Center.
- Rude, Noel. 1996. *Objetos dobles y relaciones gramaticales: el caso del yaqui*. III Encuentro de Lingüística en el Noroeste. Hermosillo, Sonora: Editorial Unison.
- Shibatani, Masayoshi. 1975. A Grammatical Study of Causative Constructions. Ph.D. Dissertation, University of California, Berkeley.
- Svenonius, Peter. 2008. Complex predicates and the functional sequence. *Tromsø Working Papers in Language and Linguistics: Nordlyd* 35: 47-88.

- Tubino Blanco, Mercedes. 2011. *Causatives in Minimalism*. Amsterdam: John Benjamins.
- Tubino Blanco, Mercedes, Heidi Harley, & Jason D. Haugen. 2009. The syntax of hybrid verb/affix lexemes and clause fusion in Hiaki (Yaqui). *Rice Working Papers In Linguistics* 1: 79-91.
- Wurmbrand, Susanne. 2001. *Infinitives: Restructuring and Clause Structure*. Berlin: Mouton de Gruyter.
- Wurmbrand, Susanne. 2007. How complex are complex predicates? *Syntax* 10(3): 243-288.