

# Syntactic Constraints on Morpheme Ordering

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## 1. Ordering applicative and causative suffixes in Hiaki and Korean

While applicative and causative constructions have been extensively studied independently, the configuration derived by the interaction of the two has drawn relatively less attention in generative grammar (though see Baker 1985; 1988, Chapter 7 for a GB account, and Alsina 1999; 2001 for an LFG account, Simango 1995 for an RRG analysis). This is partly because applicative and causative affixes in some languages (e.g., Chichewa) seem to be subject to a fixed morphological template (Hyman 2003), while others allow reordering of the two. This study investigates the interaction of the applicative and causative affixes. Drawing the data from Hiaki and Korean, I show that the apparent morphological restrictions on ordering applicative and causative suffixes result from the morphemes' structural properties (Baker 1985; 1988).

It has been assumed that in Hiaki the benefactive applicative suffix *-ria* and the causative suffix *-tua* can be ordered freely with respect to each other (Dedrick & Casad 1999, Harley 2013). Thus, the benefactive *-ria* can either precede or follow the causative *-tua*. However, careful examination reveals that the interaction of the applicative and causative morphology in Hiaki is in fact systematically restricted and is similar to that in Korean. In Hiaki and Korean, the productive causative suffix can be stacked onto the applicative suffix that introduces an embedded Beneficiary. As a result, the causative takes scope over the applicative.<sup>1</sup>

(1) a. Nee ili usi-ta mala-ta aa tu'ute-**ria-tua**-k.  
I little child-Acc mother-Acc it clean<sub>vt</sub>-**APPL-CAUS-Perf**  
'I made [the child clean it for mother].'  
[Hiaki]

b. Emma-ka Mary-eykey tongsayng-eykey ppang-ul  
mother-Nom Mary-Dat brother-Dat bread-Acc  
  
kwuw-ecwu-**keyha**-ess-ta.  
bake-**APPL-CAUS-Pst-Comp**  
'Mother made [Mary bake bread for brother].'  
[Korean]

However, with the same number of arguments, the applicative cannot follow the causative as in (2).

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<sup>1</sup> Notice that the two languages mark the applied argument differently – Hiaki Beneficiary is accusative marked, while the Korean one is dative marked. This is due to the difference in the structural-Case licensing ability of the applicative heads in the two languages.

- (2) a. \*Nee mala-ta ili usi-ta aa tu'ute-**tua-ria**-k.  
 I mother-Acc little child-Acc it clean<sub>vt</sub>-CAUS-APPL-Perf  
 Intended: 'I, for mother, made [the child clean it].' [Hiaki]
- b. \*Emma-ka tongsayng-eykey Mary-eykey ppang-ul kwup-**keyha-ecwu**-ess-ta.  
 mother-Nom brother-Dat Mary-Dat bread-Acc bake-CAUS-APPL-Past-C  
 Intended: 'Mother, for brother, made [Mary bake bread].' [Korean]

The ungrammaticality of the CAUS-APPL sequence in (2) is not simply due to a restriction on linear ordering. The CAUS-APPL order is sometimes permitted as in the Hiaki example in (3).

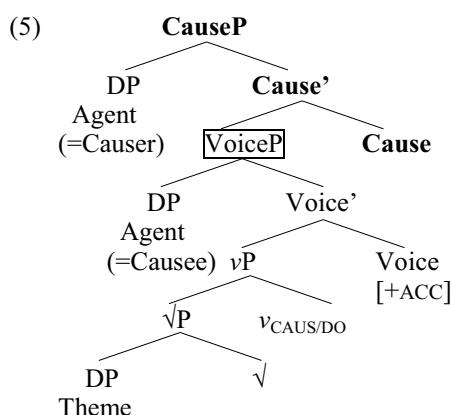
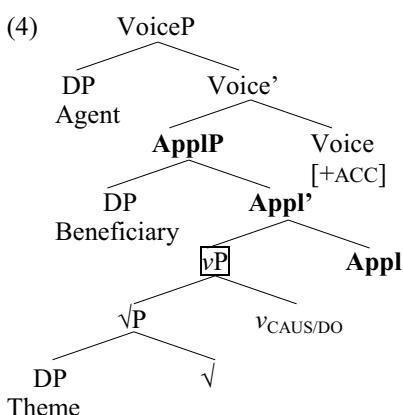
- (3) Im mala usi-ta bwa'am-ta on-**tua-ria**-k.  
 my mother child-Acc food-Acc salt-CAUS-APPL-Perf  
 'My mother is salting the food for the child.' [Hiaki]

Two questions that arise are: (i) Why is the APPL-CAUS order allowed in Hiaki and Korean, while CAUS-APPL is restricted? (ii) How can a child learn that certain uses of the CAUS-APPL order are possible?

In this paper, I argue that the applicative-causative morpheme ordering in Hiaki and Korean is determined by syntactic factors – specifically, by the selectional properties of the applicative and causative heads (section 2). I then discuss the consequence of the analysis with respect to the status of the two types of causatives present in Hiaki and Korean (section 3), as well as its prediction on the kind of associated roots (section 4). Finally, some implications and conclusions are presented in sections 5 and 6, respectively.

## 2. The structure of CAUS and APPL

I argue that the CAUS-APPL order is unacceptable in (2) because the productive causative phrase requires a functional layer that an applicative cannot embed as its complement – VoiceP. Specifically, in (4), an ApplP selects for a  $v_{\text{CAUS}/\text{DO}}\text{P}$ , headed by a verbalizer which introduces the causative/agentive semantics, *without* the structural-Case-licensing VoiceP layer (Kratzer 1994; 1996). In contrast, a causative structure in (5) contains a VoiceP, which introduces a Causee and licenses Case to the Theme.



Since the productive causative embeds a VoiceP, which can in turn embed an ApplP, the ordering APPL-CAUS in (1) is acceptable. In contrast, because the applicative head must select for a  $v_{\text{CAUS}/\text{DO}}\text{P}$  in Hiaki and Korean, the CAUS-APPL sequence in (2) is ruled out. There are two pieces of evidence supporting the structures proposed in (4)-(5) – the behaviors of the subject-oriented anaphors in Hiaki and Korean and the co-occurrence constraints on the applicative suffix with unaccusative roots and passive morphology.

The binding relation of a subject-oriented anaphor and its antecedent(s) demonstrates the difference in size between the CauseP and ApplP (Baker 1988: 210-212, Baker et al. 2012). In the Korean applicative (6a), only the sentential subject can antecede the anaphor, but the Beneficiary cannot. On the contrary, in a causative (6b), either the Causer or the Causee can antecede the anaphor.

- (6) a. Yenghi<sub>i</sub>-ka Chelswu<sub>k</sub>-eykey casin<sub>i/\*k</sub>-uy sosel-ul ilk-**ecwu**-ess-ta.  
 Yenghi<sub>i</sub>-Nom Chelswu<sub>k</sub>-Dat self<sub>i/\*k</sub>-Gen novel-Acc read-APPL-Past-C  
 ‘Yenghi read her novel for Chelswu.’ [Korean]
- b. Yenghi<sub>i</sub>-ka Chelswu<sub>k</sub>-eykey casin<sub>i/k</sub>-uy yangmal-ul ppal-**keyha**-ess-ta.  
 Yenghi<sub>i</sub>-Nom Chelswu<sub>k</sub>-Dat self<sub>i/k</sub>-Gen socks-Acc wash-CAUS-Past-C  
 ‘Yenghi had Chelswu wash her socks.’ or  
 ‘Yenghi had Chelswu wash his socks.’ [Korean]

The contrast in (6) reveals that the Causee, but not the Beneficiary, is an external argument introduced by Voice, thus can function as the subject of its own clause.

The same pattern is observed with Hiaki *-ria* and *-tua*. In an applicative construction in (7a), the anaphor *au* ‘self’ can only refer back to the Agent subject of the sentence, but not the Beneficiary.<sup>2</sup> In contrast, in a causative like (7b), *au* can be bound either by the Causer subject *ili uusi* ‘the little child’ or the Causee *Maria*.

- (7) a. Ili uusi<sub>i</sub> Maria<sub>k</sub>-ta piisam-po au<sub>i/\*k</sub> roakta-**ria**-k  
 little child<sub>i</sub> Maria<sub>k</sub>-Acc blanket-in self<sub>i/\*k</sub> roll<sub>vt</sub>-APPL-Perf  
 ‘The little child rolled himself in the blanket for Maria.’ [Hiaki]
- b. Ili uusi<sub>i</sub> Maria<sub>k</sub>-ta piisam-po au<sub>i/k</sub> roakta-**tua**-k.  
 little child<sub>i</sub> Maria<sub>k</sub>-Acc blanket-in self<sub>i/k</sub> roll<sub>vt</sub>-CAUS-Perf  
 ‘The little child made himself roll Maria in the blanket.’ or  
 ‘The little child made Maria roll herself in the blanket.’ [Hiaki]

The proposal makes predictions about the possible morpheme combinations. First, the applicative suffix is expected not to directly follow an unaccusative root – (8)-(9).

- (8) \*Jesus yoemmia-ta **muuk-ria**-k. [Hiaki]  
 Jesus people-Acc **die**-APPL-Perf  
 Intended: ‘Jesus died for people.’
- (9) \*Sinha-ka wang-eykey **cwuk-ecwu**-ess-ta. [Korean]  
 courtier-Nom king-Dat **die**-APPL-Past-Comp  
 Intended: ‘The courtier died for the king.’

This is because ApplP in both Hiaki and Korean takes a  $vP_{CAUS/DO}$  complement, according to (4), and unaccusative roots are not embedded by  $v_{CAUS/DO}$ , unless they are transitivized by an overt causative suffix.

<sup>2</sup> (7a) can also mean, though less preferred, ‘The little child rolled Maria in the blanket for himself’, unlike the Korean case in (6a). This is due to two reasons. First, Korean *casin* in (6a) takes the NP complement *sosel* ‘novel’ in (6a), therefore the whole DP is necessarily a Theme argument. Second, in Hiaki the Beneficiary is marked as accusative as well as the Theme, which gives rise to an ambiguous interpretation of (7a). Importantly, however, (7a) cannot mean ‘The little child rolled Maria in the blanket for Maria’.

An ApplP is also predicted to disallow the passive morpheme under it, because it cannot embed a Voice head. In other words, the passive suffix must not precede the applicative suffix as in (10)-(11). Both predictions are borne out.<sup>3</sup>

- (10) \*Saala mala-ta tu'ute-**wa-ria**-k. [Hiaki]  
 room mother-Acc clean<sub>trans</sub>-**pass-APPL**-perf  
 Intended: 'The room was cleaned for mother.'
- (11) \*Ppang-i tongsayng-eykey kwuw-**eci-ecwu**-ess-ta. [Korean]  
 bread brother-Dat bake-**pass-APPL**-Past-Comp  
 Intended: 'Bread was baked for brother.'

### 3. Consequence: lexical vs. productive causatives

If the proposal in (4)-(5) is on the right track, the grammaticality of (3), repeated below in (12), leads to a conclusion that the causative suffix *-tua* in (12) is a *v* head under Appl in (4). If so, (12) is grammatical because VoiceP appears *higher* than ApplP as in (4). Crucially, then, the resulting structure of (12) is acceptable because it lacks an intermediate Causee, as opposed to (2a), repeated as (13).

- (12) Im mala usi-ta bwa'am-ta on-**tua-ria**-k.  
 my mother child-Acc food-Acc salt-**CAUS-APPL**-Perf  
 'My mother is salting the food for the child.' [Hiaki]
- (13) \*Nee mala-ta ili usi-ta aa tu'ute-**tua-ria**-k.  
 I mother-Acc little child-Acc it clean<sub>vi</sub>-**CAUS-APPL**-Perf  
 Intended: 'I, for mother, made [the child clean it].' [Hiaki]

In fact, the same pattern is observed in Korean. The only difference is that in (14) the inner causative has an idiosyncratic spell-out. That is, it is a lexical causative:

- (14) Mary-ka tongsayng-eykey lamyen-ul kkul-**i-ecwu**-ess-ta.  
 Mary-Nom brother-Dat noodles-Acc boil<sub>vi</sub>-**LEX.CAUS-APPL**-Past-Comp  
 'Mary cooked noodles for brother.' [Korean]

Korean has seven spell-outs for lexical causative *-i/-hi/-li/-ki/-wu/-kwu/-chwu*, whose realization is determined by the root that it is attached to (Park 1993, Yeon 1994, Um 1995, Park 1994, Kang 1997, Son 2006, Kim 2005, Kim 2011). The allomorphy triggered by the co-occurring root is evidence that lexical causative is adjacent to the root, which the productive causative is not (Harley 2008b, Miyagawa 2011). It is, therefore, reasonable to consider that the lexical causative occupies *v* in the structure in (4), unlike the productive causative in (5). Accordingly, the CAUS that precedes the APPL is a lexical causative with the result of lacking the intermediate Causee.

As for the Hiaki *-tua* in (3)/(12), since Hiaki does not have a set of lexical causatives whose realization is determined by the verbal root, unlike Korean as exemplified in (14), *-tua* is used in (12) instead to fill the gap in the sense of Miyagawa (2011). This treatment of *-tua* as a lexical causative is supported by the fact that there are idioms in Hiaki which require *-tua* in order for the idiomatic meaning to be completed (e.g., *savu-tua* 'cause to have soap' = 'to scold'). In contrast, all Korean idioms containing a causative suffix involve one of the lexical causative morphemes, but never the productive causative. This suggests that Hiaki *-tua* can follow the verbal root directly, behaving like a lexical causative, unlike the Korean productive causative *-keyha*.

Additionally, a structure where two instances of *-tua* are used is possible:

<sup>3</sup> The tests used in this section are taken from Baker (1988) and Baker et al. (2012).

- (15) a. Nee Maria-ta bwa'am-ta on-tua-tua-k.  
I Maria-Acc food-Acc salt-CAUS-CAUS-Perf  
'I made Maria to salt the food.' [Hiaki]
- b. Nee Maria-ta usi-ta bwa'am-ta on-tua-ria-tua-k.  
I Maria-Acc child-Acc food-Acc salt-CAUS-APPL-CAUS-Perf  
'I made Maria to salt the food for the child.' [Hiaki]

The acceptability of (15) then demonstrates that the inner *-tua* is lexical, while the outer one is a productive use of *-tua*.<sup>4</sup>

#### 4. Unaccusatives and unergatives

According to the proposal made in (4)-(5), the sequence CAUS-APPL (i.e., the structure in (4)) is expected to be limited to unaccusative roots between unaccusatives and unergatives. This is because, if a lexical causative could be attached to an intransitive with an external argument, which is introduced by Voice, it would imply that the  $v_{\text{CAUS/DO}}$  headed by the lexical causative can embed a VoiceP under it. As a consequence, the distinction between the productive causative in (5) and the lexical causative would be lost. However, by hypothesis, lexical causatives are adjacent to the root phrase (Marantz 1997, Pyllkkänen 2002; 2008). If so, any possible argument of a root is expected to be an internal, not external, argument (Harley *to appear*). Therefore, if the CAUS-APPL order involves a lexical causative in Hiaki and Korean, as is argued in section 2, unaccusative roots, but not unergatives, are predicted to occur with the CAUS-APPL sequence.

The prediction is borne out in Hiaki. In Hiaki *tua-ria* is only allowed with unaccusative roots:<sup>5</sup>

- (16) a. Mario Alle-ta uka karo-ta wee-tua-ria-k.  
Mario Alex-Acc that car-Acc go-CAUS-APPL-Perf  
Lit. 'Mario made that car go for Alex.' ('Mario drove that car for Alex.') [Hiaki]
- b. Mario usi-ta uka vakot-ta sim-tua-ria-k.  
Mario child-Acc the snake-Acc leave-CAUS-APPL-Perf  
'Mario made the snake leave for the child.' [Hiaki]

Unergative roots cannot appear with the *-tua-ria* sequence:

- (17) a. \*Jose Maria-ta uka kawai-ta chepti-tua-ria-k.  
Jose Maria-Acc that horse-Acc jump-CAUS-APPL-Perf  
'Jose made that horse jump for Maria.' [Hiaki]
- b. \*Nee mala-ta Mario-ta yi'i-tua-ria-k.  
I mother-Acc Mario-Acc dance-CAUS-APPL-Perf  
'I made Mario dance for mother.' [Hiaki]
- c. \*Jose yoemia-ta uka hamut-ta nok-tua-ria-k.  
Jose people-Acc the woman-Acc speak-CAUS-APPL-Perf  
'Jose made the woman speak for the people.' [Hiaki]

<sup>4</sup> Interestingly, my two Hiaki consultants had different responses on the verb form in (15b). Specifically, one accepts *on-tua-ria-tua-k*, with two instances of *-tua*, while the other prefers *on-tua-ria-k* for (15b). This variation does not affect the claim that the *-tua* preceding *-ria* is lexical, because the second consultant does accept the syntactic structure of (15b). To him, the second instance of *-tua* is not spelled out. Tubino Blanco (2010) discusses a similar case with lexical causatives attached to verbal roots (e.g., *hi'ibwa-tua* 'eat<sub>vi</sub>-CAUS = feed'), which she attributes to a case of haplology (Bloomfield 1896).

<sup>5</sup> The suppletive roots *weye* 'go (sg. subj)', *sime* 'leave (sg. subj)' are shown to be unaccusative in Harley et al. (2009).

As mentioned section 3, Korean lexical causatives have different spell-outs depending on the roots they occur with. With respect to the prediction that CAUS-APPL is restricted to unaccusative roots, it is in principle confirmed in Korean as well, as seen in (18), previously in (14):

- (18) Mary-ka tongsayng-eykey lamyen-ul kkul-i-ecwu-ess-ta.  
 Mary-Nom brother-Dat noodle-Acc boil<sub>vi</sub>-LEX.CAUS-APPL-Past-Comp  
 ‘Mary cooked noodle for brother.’ [Korean]

This is because if a root undergoes an intransitive-causative alternation where the only argument of the intransitive functions is the object of its transitive counterpart as in (19), it suggests that that root is unaccusative (Tubino Blanco 2010):

- (19) a. Mwul-i kkul-ess-ta.  
 water-Nom boil<sub>vi</sub>-Past-Comp  
 ‘The water boiled.’ [Korean]
- b. Yenghi-ka mwul-ul kkul-i-ess-ta.  
 Yenghi-Nom water-Acc boil<sub>vi</sub>-CAUS-Past-Comp  
 ‘Yenghi boiled the water.’ [Korean]

There are, however, some potential counterexamples. The roots like *nal* ‘fly’, *wul* ‘cry’ and *wus* ‘laugh’ can be embedded under a lexical causative, which in general are assumed to be unergatives.

- (20) a. Yenghi-ka yen-ul **nal-li-ess-ta**  
 Yenghi-Nom kite-Acc **fly<sub>vi</sub>-LEX.CAUS-Past-Comp**  
 ‘Yenghi flew a kite.’ [Korean]
- b. Yenghi-ka Chelswu-lul **wul-li-ess-ta**  
 Yenghi-Nom Chelswu-Acc **cry-LEX.CAUS-Past-Comp**  
 ‘Yenghi made Chleswu cry.’ [Korean]
- c. Yenghi-ka Chelswu-ul **wus-ki-ess-ta**  
 Yenghi-Nom Chelswu-Acc **laugh-LEX.CAUS-Past-Comp**  
 ‘Yenghi made Chleswu laugh.’ [Korean]

However, *nal* ‘fly’ and *wul* ‘cry’ in (20a-b) pattern with unaccusatives (cf. (21)), rather than unergatives (cf. (22)), when interacting with the benefactive applicative suffix in (23).

- (21) \*Sinha-ka wang-eykey **cwuk-ecwu-ess-ta.**  
 courtier-Nom king-Dat **die-APPL-Past-Comp**  
 ‘The courtier died for the king.’ [Korean]
- (22) Ku namca-ka yeca chinku-eykey **chwum.chu-ecwu-ess-ta.**  
 the man-Nom girl friend-Dat **dance<sub>n</sub>.dance<sub>v</sub>-APPL-Past-Comp**  
 ‘The man danced for (his) girlfriend.’ [Korean]
- (23) a. \*Yen-i/cakun say-ka Chelswu-eykey **nal-acwu-ess-ta.**  
 kite-Nom/little bird-Nom Chelswu-Dat **fly<sub>vi</sub>-APPL-Past-Comp**  
 ‘A kite/little bird flew for Chelswu.’ [Korean]
- b. \*Yepaywu-ka kamtok-eykey **wul-ecwu-ess-ta.**  
 actress-Nom director-Dat **cry-APPL-Past-Comp**  
 ‘The actress cried for the director.’ [Korean]

The ungrammaticality of (23) suggests two possibilities – *nal* ‘fly’ and *wul* ‘cry’ are in fact unaccusatives in Korean, or they at least behave like unaccusatives when co-occurring with valency-increasing verbal suffixes.

On the other hand, *wus* ‘laugh’ presents a different case as it can co-occur with the benefactive applicative as in (24a). Note, however, that it is interpreted as ‘smile’, not ‘laugh’. In fact, the dative argument in (24a) is not introduced by *-ecwu*. This can be seen from the acceptability of (24b), which lacks *-ecwu*.

- |         |   |              |           |                             |
|---------|---|--------------|-----------|-----------------------------|
| (24) a. | Chelswu-ka                                | Yenghi-eykey | pangkus   | wus- <b>ecwu</b> -ess-ta    |
|         | Chelswu-Nom                               | Yenghi-Dat   | beamingly | smile-APPL?-Past-Comp       |
|         | ‘Chelswu smiled at Yenghi.’ (*laughed at) |              |           | (adapted from Oh 2010: 416) |
| b       | Chelswu-ka                                | Yenghi-eykey | pangkus   | wus-ess-ta                  |
|         | Chelswu-Nom                               | Yenghi-Dat   | beamingly | smile-Past-Comp             |
|         | ‘Chelswu smiled at Yenghi.’ (*laughed at) |              |           | [Korean]                    |

If the dative argument in (24) is associated with the root *wus* ‘laugh’, presumably as a location/direction, instead of being introduced by *-ecwu*, then the grammaticality of (24a) is not surprising.<sup>6</sup>

The behaviors of the roots *nal* ‘fly’, *wul* ‘cry’ and *wus* ‘laugh’ suggest that when these roots are embedded under a lexical causative, their argument is in fact generated as an internal argument to the root, rather than is introduced by a separate Voice head. If so, the proposal made about CAUS-APPL in (4) can be retained.<sup>7</sup>

## 5. Implications

The results of this paper have some implications. First, it is consistent with the idea that the core verbal structure is comprised of three parts – an external-argument-introducing VoiceP; a verbalizing *v*P, which brings in the semantics of *do/cause/be/become*; and an acategorical root (Cuervo 2003, Harley 2013 a.o.). This position departs from the previous assumption about verb phrases’ being bipartite, consisting of a lexical VP and a functional *v*P, the latter of which essentially does the work of Voice and *v* (Chomsky 1995, Hale & Keyser 1993, Kratzer 1996, Marantz 1997, Folli & Harley 2005; 2007, Harley 2008a, Coon & Preminger 2011).

Second, the present results about Hiaki lexical causatives lead one to reconsider the structural definition of lexical causatives. If lexical causatives are root-selecting, as defined in Marantz (1997) and Pylkkänen (2002; 2008), it means that Hiaki denominal verbs such as *on-tua* ‘salt-LEX.CAUS’ in (3)/(12) involve the derivation of  $\sqrt{-v}$ . That is, the acategorical root is verbalized without going through nominalization. On the other hand, the alternative (i.e.,  $\sqrt{-n-v}$ ) is what Hale & Keyser (1993) assume for unergatives, which, according to them, are denominal.

At first glance, the former position (Marantz 1997, Pylkkänen 2002; 2008) is favored since the resulting verb does seem to contain a root, not an *n*P or DP. In particular, the Hiaki noun for ‘salt’ is *o’ona*, not *on*.<sup>8</sup> Thus, the morphological form of *on-tua* ‘to salt’ suggests that *-tua* is attached to the smallest possible unit that retains the meaning of ‘salt’. This reminds one of the English root  $\sqrt{don-}$  and the idiosyncratic interpretation of the root-derived noun *donor* (Marantz 2001). Marantz (2001) points

<sup>6</sup> This raises another question – one about the status and function of *-ecwu* in (24a). See Jung (2013) for an account. For now it suffices to point out that it is not necessarily because *wus* ‘laugh’ is unergative that (24a) is grammatical.

<sup>7</sup> A limited set of agentive transitive roots can be embedded under the lexical causative in Korean. See Kim (2011) and Jung (2013) for arguments as to why the Agent-like argument is not introduced by Voice, therefore, these transitive roots do not pose a problem for the structures proposed in (4)-(5).

<sup>8</sup> There does exist *o’on-tua* in Hiaki, which contains a reduplicated root. Its meaning is “usually salts”.

out that compared to *donor*, *donator* has a more predictable meaning, because the root undergoes a verbalizing stage via *-ate* first, before deriving as a noun. That is, the difference between *donor* and *donator* is the difference between  $\sqrt{-n}$  and  $\sqrt{-v-n}$ .

Additionally, denominal lexical causatives in Hiaki do not allow plural markers as the contrast in (25) shows.

- (25) a. Ume arosim      **mun-tua**      pale-ta      vechi'ivo.  
 the rice      **bean-LEX.CAUS**      boy-Acc      for  
 'Add beans to the rice for the boy!' [Hiaki]
- b. \*Ume arosim      **muunim-tua**      pale-ta      vechi'ivo.  
 the rice      **bean.pl-LEX.CAUS**      boy-Acc      for

Assuming that a DP is comprised of multiple layers and that there exists an inflectional number layer NumP above rootP (Ritter 1991 a.o.), the contrast in (25) suggests *-tua* is attached to the root, excluding the NumP layer.

However, (26) shows that the root is in fact incorporated to *v*, leaving its original position:<sup>9</sup>

- (26) In mala      Maria-ta      tee-ta      [husai-k      t<sub>i</sub>]      asuka<sub>i</sub>-tua-ria-k.  
 my mother      Maria-Acc      tea-Acc      brown-Acc<sub>?</sub>      sugar-LEX.CAUS-APPL-Perf  
 'My mother added brown sugar to the tea for Maria.' [Hiaki]

The possibility of a structure like (26) reveals that the lexical causative *-tua* takes at least an *nP*, or even a *P<sub>HAVE</sub>P* (Haugen 2004), as its complement, instead of an acategorial rootP.<sup>10</sup> Then, what the contrast in (25) and the morphological form of *on-tua* actually suggest is that on the surface, the *v* immediately follows the root, rather than selects for it. Therefore, the case of denominal lexical causatives provides evidence that lexical causatives are more accurately characterized when defined as the 'first verbalizer' (Harley p.c.), rather than as the root-selecting *v*. Notice that the group of lexical causatives involving a verbal root (e.g., *hi'ibwa-tua* 'eat<sub>vi</sub>-LEX.CAUS' = 'feed') are truly root-selecting, but is subsumed under this definition.

## 6. Conclusion

In this study, I have shown that the apparent morphological constraints on the interaction of applicative and causative in Hiaki and Korean are in fact due to the size of the complement that causative and applicative heads take. Specifically, I have argued that the applicative takes a *vP<sub>CAUS/DO</sub>* complement, while the productive causative selects for a VoiceP in Hiaki and Korean. Thus, the APPL-CAUS order, where the causative embeds the applicative, is allowed, while the CAUS-APPL is not when the same number of arguments are concerned. As a consequence, when the CAUS-APPL is possible, the causative was shown to involve a lexical causative, heading the *v<sub>CAUS/DO</sub>* under the Appl head. This explains why CAUS-APPL occurs in more limited distributions than APPL-CAUS.

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<sup>9</sup> Jelinek (1998) and Haugen (2004) discuss cases of possessive denominal verbs which result from a similar derivation – incorporation of the root to *v*. The difference is that the possessive denominal verbs involve a different flavor of *v* – namely, *v<sub>BE</sub>*.

<sup>10</sup> According to Haugen (2004)'s analysis, a *P<sub>HAVE</sub>P* (i.e., [the tea [*P<sub>HAVE</sub>* brown sugar]]) would be selected for by *v<sub>CAUS</sub> -tua* in (26), yielding the interpretation 'My mother caused the tea to have brown sugar for Maria.'

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