Inner and Outer Domains for Hawaiian Causatives and Nominalizers

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Abstract

Hawaiian valency-related morphology includes a complex set of surface forms which have traditionally been understood as causatives. Despite phonological similarity among this set of forms, these have traditionally been analyzed as separate morphemes. A closer view of their distribution and argument structure suggests an analysis in which these forms are allomorphs of one underlying, valency-increasing morpheme. A similar analysis of two nominalizing forms suggests that these are also allomorphs of one valency-decreasing morpheme. In each case (causatives and nominalizers), an analysis of surface realization is presented in terms of inner (or root-selecting) and outer domains. With the analysis of causatives and nominalizers in place, corpus evidence suggests that the inner causative allomorph and inner nominalizing allomorph do not co-occur (even though co-occurrence of the inner nominalizer and the outer causative is common). This data suggests a morpho-syntactic view of word formation, according to which morphological properties result from general properties of the morpho-syntax, such as the availability of only one root-selecting position for a given root.

1 Introduction

This paper is concerned with valency related affixes in Hawaiian, with a focus on causative and nominalizing morphology (the passive affix is briefly discussed as well). Of particular interest are two prefixes which Elbert and Pukui (1979) identify as 'causative/simulative' prefixes in their standard reference grammar; these are *ho'o* and *ha'a* (each with a set of phonologically conditioned allomorphs). As observed by Elbert and Pukui (1979), both *ho'o* and *ha'a* can attach to roots (1a, 1b). However, only *ho'o* can attach to *ha'a*, never the converse (1c, 1d).

(1) a. ho'o-ROOT: ho'o-hele (CAUS-go) 'to set in motion'

b. ha'a-ROOT: ha'a-nui (CAUS-big) 'to brag, exaggerate'

c. ho'o-ha'a-ROOT: ho'o-ha'a-nui (CAUS-CAUS-big) 'to cause to brag'

d. *ha'a-ho'o-ROOT

While the facts in (1) are open to multiple analyses, corpus data (detailed below) shows an unexpected gap when comparing the causative prefixes with the nominalizing suffix. Nominalization in Hawaiian is generally marked by either the suffix *na* or the free particle *'ana* (2a, 2b). While nominalizations with the particle *'ana* allow prefixation with both *ho'o* and *ha'a*, words with the *-na* suffix do not co-occur with *ha'a*, even though *-na* nominalizations with *ho'o* are common (2c, 2d). Nor is it the case that *ha'a* is ruled out from forms with valency-related suffixes; as discussed below, words with the passive suffix allow both *ho'o* and *ha'a* as a prefix.

(2) a. ROOT-na: waiho-na (leave-NOM) 'depository'

b. ROOT 'ana: hele 'ana (go NOM) 'going' (gerund)

c. ho'o-ROOT-na: ho'o-kahu-na (CAUS-pray-NOM) 'to ordain a priest'

d. ha'a-ROOT-na → unexpected gap in corpus

In order to develop an explanatory analysis, I argue that there is only one underlying causative morpheme and only one underlying nominalizing morpheme present in the data above, with the various surface realizations of these morphemes arising due to whether the relevant affix is attached to the root or not. Under this view, allomorph selection is understood as a type of morpho-syntactically conditioned allomorphy, referencing the concept of 'inner' and 'outer' allomorphs in the sense of Arad (2003), Embick (2003), and Embick and Marantz (2008); see also Van Hout and Roeper (1998); Borer (1999); Alexiadou (2001); Bobaljik (2000); Borer (2003); Harley (2008, 2009); Alexiadou (2009) and Embick (2010) for antecedents, extensions, and similar analyses from cross-linguistic perspectives. Under this analysis, both causative *ha'a-* and nominalizer *-na* are root-selecting (or, 'inner') allomorphs, which explains their absence of co-occurence without recourse to a stipulated rule. This analysis therefore requires a null morpheme in the representation of (1a), such that causative *ho'o* is a non-root-selecting (or, 'outer') position; I present a detailed look at the argument-structural properties of *ho'o* and *ha'a* in order to justify this representation.

The proposed analysis adopts a Distributed Morphology framework (Halle and Marantz, 1993; Marantz, 1997) in order to characterize the data set, according to which there exists only one root-attaching position for any given root. Empirically, this paper includes novel observations of Hawaiian valency morphology obtained through corpus searching, as well as a comprehensive description of causative morphemes in Hawaiian, updating Elbert and Pukui (1979)'s work in this domain. I argue that an analysis of these valency-related morphemes in Hawaiian, including the relevant corpus results, is best understood via a model in which a single root-attaching position is available, such that root-attachment may yield various types of 'listed' phenomenon, such as idiosyncratic selection, interpretation, and allomorphy.

1.1 Language Overview and Data Sources

The language discussed in this paper is Hawaiian, the native language of Hawai'i, which is currently endangered (NeSmith, 2016). Hawaiian is a verb-initial language with nomi-

native/accusative case marking. The standard word order is VSO, with embedded clauses occurring in the same position as objects.

There are two primary dialects of Hawaiian in current use: the 'University' dialect associated with the language revitalization movement, and the Niʻihau dialect, which is spoken on Niʻihau and Kauaʻi. However, most linguistic documentation of Hawaiian represents an older variety of the language, and is based on the work of Elbert and Pukui, the latter of whom was a native speaker. The data in this paper comes primarily from their work, including their grammar (Elbert and Pukui, 1979) and dictionary (Elbert and Pukui, 1986). Additional data comes from Hawkins (1979), which primarily focuses on sentence structure for the same dialect. Therefore, the data in this paper represent the grammar as understood by speakers somewhat removed from the present day, and should not be taken to represent either modern variety (see also Alderete and MacMillan (2015) for discussion).

Elbert and Pukui (1986), the standard dictionary of Hawaiian, is a particularly rich source of data, with nearly 30,000 headwords and extensive examples which include morphological information. In order to perform corpus searching on this dictionary, a publicly available electronic copy of the 1986 dictionary was downloaded, text-normalized, and converted to a single text file.[1] While many of the specific examples in this paper come from Elbert & Pukui's documentation, several novel generalizations about co-occurrence (or non co-occurrence) have been enabled via corpus search of their (1986) dictionary.

2 Nominalization

While the bulk of this paper covers causative morphology, I begin by focusing on two common nominalizers in Hawaiian, the suffix *-na* and the free particle *ʻana*.[2]. I will argue that *-na*

[1]The files can be obtained at the following web address: http://www.ulukau.org/elib/cgi-bin/library?c=ped. These files were then converted to a text file via the Python package Pyth (Hogger, 2015) in order to perform regular expression search over the entire dictionary.

[2]Other nominalizing processes include zero derivation, reduplication, which is rare as a nominalizer, and non-productive suffixes *-hana* and *-lana*. These non-productive suffixes, along with the two nominalizers discussed in detail here, *-na* and *ʻana*, likely derive from the same Proto-Polynesian form (Chung, 1973).

is a root attached nominalizer, with properties that pattern with R-nominals in terms of the typology of nominalization due to Grimshaw (1990). In contrast, the particle *ʻana* has the properties of an Event (or AS-) nominal, which, I argue, follows from its status as an outer-attached nominal. After establishing the properties of these nominalizers, I will turn to the arguably more complex data on causatives, ultimately arguing that causatives interact with nominalizing morphology in terms of root versus non-root attached allomorphs.

The nominalizers *-na* and *ʻana* differ both semantically and phonologically. For example, *-na*, but not *ʻana*, can yield idiosyncratic interpretations, as illustrated in (3). Further, *-na*, but not *ʻana*, can induce root allomorphy via vowel shortening (4) and lengthening (5). As opposed to some phonological process discussed below in connection with causatives, the root allomorphy in (4) and (5) does not appear to be related to an independent process of stress assignment; rather, this root allomorphy appears to be idiosyncratic for the specific root in question (e.g. compare (3d) and (5a), which have the same syllabic structure, with only (5a) having vowel alteration in the root).

(3) a. hiki 'to arrive' → hiki-na 'east'

b. holoholo 'to run about' → holoholo-na 'animal'

c. waiho 'to leave' → waiho-na 'depository'

d. kuhi 'to show' → kuhi-na 'councilor'

e. 'ohā 'taro shoot' → 'oha-na 'family'

(4) *-na* suffixation with vowel shortening

a. hāpai 'to carry' → hapai-na 'carrying'

b. kālai 'to carve' → kalai-na 'carving'

(5) *-na* suffixation with vowel lengthening

a. 'ali 'to scar' → 'āli-na 'scar'

b. koi 'to urge' → kōi-na 'urging'

Turning now to *ʻana*, the following pairs illustrate (a) non-nominalized and (b) nominalized examples from Hawkins (1979, p. 94) (note that the gloss 'NOM' indicates nominalization in these examples). Nominalizations with *ʻana* have the same argument structure as they would when not nominalized. As is typical with many types of non-main clauses in Hawaiian, the subject is preposed in the nominalized example. In terms of case marking, objects remain case-marked with *i*, and the subject of the nominalized clause appears in the possessive.[3]

(6) a. hele ʻo ia i ke kula
go SUBJ he to the school
'he goes to the school'

b. kona hele ʻana i ke kula
his go NOM to the school
'his going to the school'

(7) a. lohe na ʻōhua i keia lono
hear the.pl servant OBJ this news
'the servants hear the news'

b. ka lohe ʻana o na ʻōhua i keia lono
the hear NOM of the.pl servant OBJ this news
'the servants' hearing of this news'

Additional examples from older, textual sources appear in Elbert and Pukui (1979), repeated here as (8) and (9), further illustrate nominalizing *ʻana*; literal translations are provided in addition to the original translations.

(8) koʻu hoʻo-moe maikaʻi ʻana iāia
my CAUS-sleep well NOM him
'my placing him carefully down to sleep'

[lit. 'my putting him carefully to sleep', poetic for 'my burying him']

(9) ma kēia paʻi ʻana a ʻAikanaka i nā mākua
on this evict NOM of ʻAikanaka OBJ the.pl parents

[3]The possessive is marked with either the *a* possessive or *o* possessive, which is thought to mark 'dominant' versus 'subordinate' possession; these forms are contrasted in (8), *koʻu* not *kaʻu*, and (9), *a* not *o*. See Wilson (1976) and Medeiros (2020) for more details on this possessive alternation in Hawaiian (which is a feature of Eastern Polynesian languages more generally). The key point here is that the possessive alternation behaves as expected for nominalized forms as it does in other contexts.

‘the eviction by ‘Aikanaka of his parents’

[lit. “Aikanaka’s evicting his parents’]

Unlike the suffix *-na*, the *‘ana* nominalizer is a free particle. For example, an adverb can appear between the verb and *‘ana*, as the adverb *ka‘awale* does in (10). *‘ana* typically occurs between adverbs and directional markers such as *mai*, as illustrated in (11).

(10) ma kēia noho ka‘awale ‘ana
at this stay apart NOM
‘at this staying apart’

(11) ka hele ‘āwīwī ‘ana mai
the come quick NOM here
‘the quick coming’

‘ana can also occur with the the passive particle *‘ia*, in which case *‘ana* follows the passive particle.

(12) (ka māhalo nui loa) ... i ko‘u hāpai ‘ia ‘ana i kia‘āina
the thanks big very ... PREP my exalt PASS NOM as governor
‘(many thanks) ... for my being exalted as governor’ (Chung 1973)

(13) ka pepehi ‘ia ‘ana o ke keiki
the hit PASS NOM of the child
‘the beating of the child’ (Hawkins 1979)

A comparison between nominalization with *-na* and *‘ana* can be made with reference to Grimshaw (1990)’s classification of R-nominals versus Event/AS-nominals (see also Borer (2003) and Alexiadou (2010) for extensions and commentary on these categories). Given the evidence here, nominalizations with *-na* have the properties of R-nominals, in that they do not have obligatory arguments, nor do they have an event reading. When comparing *-na* with *‘ana*, Elbert and Pukui (1979, p. 81) state that, “the semantic difference is that *-na* words usually designate a single act or object ..., whereas the combination of verb + *‘ana* usually represents an ongoing process, frequently translated into English by the present participle.” Nominalization with *‘ana* has the properties of AS-nominals, insofar as these have obligatory arguments, can take aspectual modifiers, and have an event reading.

Despite the differences between *-na* and *'ana*, I argue that these are two surface realizations of the same underlying morpheme, the category defining n. Within such an analysis, the semantic and phonological differences between *-na* and *'ana* are explained by their attachment position relative to the root. In the following section, I review literature that characterizes syntactically conditioned allomorphy in terms of attachment position within a morpho-syntactic framework for morphology.

2.1 Root vs. Non-Root Selection: Theoretical Framework

Following Arad (2003), the difference between *-na* and *'ana* nominalization could be characterized in terms of 'inner/low' and 'outer/high' attachment in a binary-branching, syntactically oriented framework, a line of inquiry that has been very productive cross-linguistically (see e.g. Travis (2000b); Harley (2008); Embick and Marantz (2008), and Bye and Svenonius (2012), *inter alia*, as well as Kratzer (1996) and Marantz (1997) for antecedent research). Under such an approach, *-na* and *'ana* may be characterized as allomorphs of one underlying morpheme. In other words, the realization of a morpheme may be conditioned by syntactic position, namely root-attached versus non-root attached. I will briefly summarize the framework with some independent data sets.

Arad (2003)'s work on Hebrew and English illustrate this model. Arad, following Marantz (2000), argues that a fundamental difference obtains between morpheme attachment to roots versus morpheme attachment to 'words,' which she takes to consist of at least a root and an additional (possibly null) morpheme. Typically, the root-attaching morpheme (but never the root itself) defines the category/part of speech label of the stem, while the root itself is unspecified for category. According to this model, a single morpheme, e.g. a nominalizer, can attach to either a root or a word, but with quite different results. Therefore, properties that superficially appear to be the result of different processes or rules are actually the result of attachment position: root or non-root.

A key idea for this model is that roots are underspecified both semantically and phono-

logically. A root becomes a stem/word upon its first, root-attaching affixation, after which semantic and certain phonological properties become fully specified. Additional affixations must refer to the properties that obtained after the initial attachment; in this way, root attachment is privileged over non-root attachment. Arad illustrates the semantic consequences of this model with Hebrew, in which a template root combines with a pattern (also known as a Binyan), yielding words with different parts of speech and different, though related, meanings. In (14), the phonological relationship between the various nouns and verbs is clear (they all contain the root elements *s-g-r*), but the semantic relationship is less clear. While all of the words share a core meaning, each form's specific meaning only obtains in the context of the (non-concatenative) affixation.

(14) Root: $\sqrt{sgr}$

a. CaCaC (v) → sagar, v. 'close'

b. hiCCiC (v), → hisgir, v. 'extradite'

c. hitCaCCeC (v), → histager, v. 'cocoon oneself'

d. CeCeC (n), → seger, n. 'closure'

e. CoCCayim (n), → sograyium, n. 'parentheses'

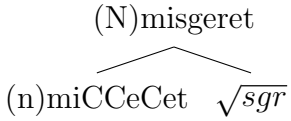
f. miCCeCet (n), → misgeret, n. 'frame'

(15) CiCCeC (v), → misger, v. 'to frame'

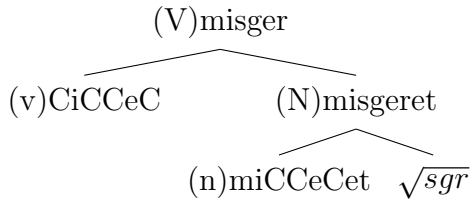
However, further affixation on any word form/stem does not yield the type of semantic instability illustrated in (14). Instead, affixation on a word (root plus affix, also known as a stem) must refer to the meaning of that word, and not to the underspecified meaning of the root. For example, Arad (2003) shows that the verb (15) is derived from the noun (14f). Here, the meaning of the derived verb transparently refers to the meaning of the noun stem. In other words, 'inner' or root-selecting affixation is unpredictable, while 'outer' or non-root selecting affixation is predictable.

A key property of this morpho-syntactic model of morphology is that roots are underspecified semantically and unspecified categorically; therefore, a root is never allowed to stand alone without at least one (possibly null) affix. At the same time, morphology is accomplished in the same representational space as syntax, as illustrated in the representations below (repeated from Arad (2003)).

(16) root-derived noun:



(17) noun-derived verb:



Within this framework, root versus non-root attachment also explains phonological effects on both roots and affixes. Arad (2003) illustrates phonological effects on the root with 'zero-derived' (null affixed) forms as in English (18), in which forms with null v versus null n affixation result in different stress patters on the root. However, when a verb has the 'nominal' stress pattern (e.g. *pérmit*, 'to issue a permit'), this form's meaning is tightly linked to the meaning of the nominal form; in this case, the stress pattern resulting from root-attached n (resulting in a noun) determines the stress pattern of the noun-derived verb.

(18) a. pérmit$_n$ [$\sqrt{permit}$ n]→ pérmit$_v$ [[$\sqrt{permit}$ n] v]] 'to issue a permit'
(compare to *permít*$_v$ [$\sqrt{permit}$ v], 'to allow')

b. cómpound$_n$ [$\sqrt{compound}$ n] → cómpound$_v$ [[$\sqrt{compound}$ n] v]] 'to compound one or more elements'
(compare to *compóund*$_v$ [$\sqrt{compound}$ v], 'to worsen, to accrue interest, etc.')

Root-attached affixes can also have their spell-out affected by the root, yielding unpredictable forms. Embick (2010) argues that the inner versus outer attached distinction results

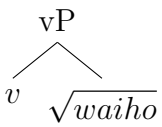
in the irregular spell-out of nominalizing n as *-age, tion, -al* in (19), whereas non-root attached n always gets the same spell-out for the associated gerunds, namely *-ing*. A key point for the data set in (19) is that the same n affix is implicated in all of these forms, with their pronunciation being determined by morpho-syntactic context.

(19)
a. $[\sqrt{marry}\ \text{n}] \rightarrow$ marr-age
b. $[[\sqrt{marry}\ \text{v}]\ \text{n}] \rightarrow$ marry-ing
c. $[\sqrt{destroy}\ \text{n}] \rightarrow$ destruc-tion
d. $[[\sqrt{destroy}\ \text{v}]\ \text{n}] \rightarrow$ destroy-ing
e. $[\sqrt{refuse}\ \text{n}] \rightarrow$ refus-al
f. $[[\sqrt{refuse}\ \text{v}]\ \text{n}] \rightarrow$ refus-ing

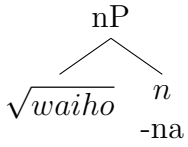
Returning to the analysis of *-na* and *'ana*, these appear to have the properties of R- and AS-nominals, respectively. As discussed by Embick (2010), the difference between R-nominals and AS-nominals can be modeled within this framework in the following way. Taking both *-na* and *'ana* to be allomorphs of n, *-na* is the root selecting, or inner, allomorph, while *'ana* selects vP, which nominalizes an event with complete argument structure (see also Marantz (1997), Van Hout and Roeper (1998), Borer (1999), Alexiadou (2009) and, Harley (2009) for related proposals, as well as Chomsky (1970) for antecedent research). According to this approach, the verb and related nominalization with *-na* in (20) have the representations in (21) and (22), in which the relevant category-defining morpheme, v or n, attaches to the root directly.

(20)
a. waiho 'to leave'
b. waiho-na 'depository'

(21)



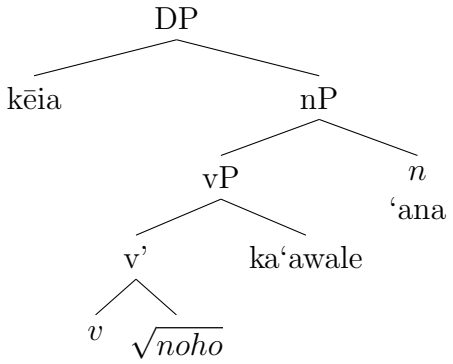
(22)



The represenatation of a phrase nominalized by *ʻana*, such as (23), repeated from (10), has the structure in (24). Because n selects vP in (24), an eventive reading is expected. The spell-out of n for the relevant allomorphs appears as (25).

(23) ma kēia noho kaʻawale ʻana
at this stay apart NOM
'at this staying apart'

(24)



(25) Spell-out of n

a. $n \leftrightarrow$ ʻana /____ {vP}

b. $n \leftrightarrow$ -na /____ $\{\sqrt{}$ROOT,...$\}$

Because roots are semantically underspecified in this framework, nominalization with *-na*, as the inner allomorph of n, can have an idiomatic interpretation, as illustrated in (3). According to (Elbert and Pukui, 1979, p. 81), nominalization with *ʻana* yields predictable interpretations, as expected given its status as an outer allomorph.

The analysis of *ʻana* in (25) also predicts that nominalization with *ʻana* always has event structure. This prediction is borne out, even for examples in which *ʻana* appears to nominalize a noun directly. According to Elbert and Pukui (1979), when *ʻana* nominalizes an underived noun, this "seems to give a verblike meaning to the head noun." (26) and (27) illustrate the pattern of data. The event interpretation of these examples can be accounted for if the root is first selected by null v, prior to nominalization with *ʻana*. In other words, while

the analysis of (26) and (27) depends on a null v in their representation, this representation is justified given the event interpretation.

(26) a. ‘āina ‘land’

b. ka ‘āina ‘ana
the land NOM
‘the giving/forming/distribution of the land

(27) a. mahi‘ai ‘farmer’

b. ka mahi‘ai ‘ana o ka ‘āina
the farmer NOM of the land
‘the farming of the land’

To summarize, while *-na* and *‘ana* are both nominalizers, their behavior is quite different. Nominalization with *-na*, but not *‘ana*, can result in idiomatic interpretations and root allomorphy, whereas nominalization with *‘ana*, but not *-na* results in an eventive reading which is nonetheless predictable (similar to English gerunds with suffix *-ing*). Despite these differences, I have argued that the nominalizers *-na* and *‘ana* are surface realizations of the same underlying morpheme, n. Their surface pronunciations (*-na* versus *‘ana*), as well as their different properties are a result of different attachment position. In the next sections, I extend the root- versus non-root attachment analysis to a complex set of valency increasing morphemes.

3 Causatives and Valency Increase

Elbert and Pukui (1979) describe several prefixes which they describe as both causative and simulative morphemes. According to the structuralist analysis in Elbert and Pukui (1979, p. 65), one of these morphemes, *ho‘o*, is always the leftmost prefix on a verb. Moving inwards towards the verbal root, Elbert and Pukui describe several additional causative/simulative morphemes, which occur in complementary distribution on different roots; these include *ha‘a*, *kā*, *‘ā* (of which *ha‘a* is the most frequent), and several additional but rare alternants.

In order to illustrate the basic properties of these morphemes and their interaction, I begin by focusing on the core cases of *ho‘o* and *ha‘a*.

The prefix *ho‘o* is widespread in Hawaiian and also highly productive, as evidenced by its combination with recent loanwords (Elbert and Pukui, 1979, p. 77). *Ho‘o* has phonologically conditioned allomorphs *ho‘o, ho‘, ho, hō,* and *hō‘*, which depend on the properties of the first syllable of the stem. Affixation of *ho‘o* can also trigger vowel length alternation in the stem, which is related to stress patterns (Alderete and MacMillan, 2015; Elbert and Pukui, 1986). While Elbert and Pukui (1979) describe *ho‘o* as a causative morpheme, *ho‘o* can affix to several types of word class, including intransitive verbs (28), transitive verbs (29), adjectives (30), and nouns (31) (though note that ‘word class’ is not a property of roots in the framework adopted here).[4]

(28) a. hele ‘to go’

b. ho‘ohele ‘to set in motion’

(29) a. ‘ai ‘to eat’

b. hō‘ai ‘to feed’

(30) a. ola ‘alive’

b. ho‘ōla ‘to save’

(31) a. hale ‘house’

b. ho‘ohale ‘to house’

Elbert and Pukui (1979) also describe a ‘simulative’ use of *ho‘o*, which typically combines with a stem or root to mean that the subject behaves like, or pretends to behave like, the stem, which is typically a noun or adjective, resulting in an intransitive verb. Examples (32-34) illustrate the range of simulative uses of *ho‘o*. I assume that the different types of interpretation for a simulative (e.g. ‘behave, act, feign’) arise via pragmatic inferencing.

[4]A preliminary analysis, which includes much of the data in this subsection, was originally presented in Author Proceedings Paper (year).

(32) a. haole ‘white person’

b. ho‘ohaole ‘to act like a white person’

(33) a. wahine ‘woman’

b. ho‘owahine ‘to behave like a woman, to grow into womanhood, to be effeminate’

(34) a. kuli ‘deaf’

b. ho‘okuli ‘to act deaf or to feign deafness’

Descriptively, *ho‘o* appears to increase the valency of the stem to which it attaches in a very general sense: nouns and stative adjectives become intransitive verbs, intransitive verbs become transitive verbs, and transitive verbs become ditransitive. For this reason, *ho‘o* has a broader distribution as compared to morphemes that are often labelled causative in other languages (e.g. Japanese *sase*, see (Harley, 2008) for review).

In other words, prefixation of *ho‘o* typically adds an argument, increasing the valency of the stem to which it attaches (potential exceptions to this generalization are discussed below). With respect to *ho‘o* being a ‘causative’ morpheme, this can be confusing as the term ‘causative’ itself has different meanings in the literature. Sometimes, ‘causative’ is used to mean ‘not inchoative,’ as in the contrast in (35). Alternatively, ‘causative’ is sometimes used to describe verbs which include both a CAUSER and a CAUSEE type argument, which is typically expressed in English via a specific lexical item (e.g. ‘see’ vs. ‘show’) or via a periphrastic construction, as in the given paraphrase for (36). For Hawaiian, *ho‘o* is implicated in both types of causative, as *ho‘o* prefixed stems can derive both ditransitives, with CAUSER-CAUSEE argument structure, as well as transitive (i.e. not inchoative) verbs, in addition to intransitive verbs, as in the ‘simulative’ use described above. For this reason, I analyze it as a general valency-increasing morpheme.

(35) a. The vase broke. (inchoative)

b. Watson broke the vase. (causative)

(36) Watson showed Sherlock the clue. ≈ Watson made/let Sherlock see the clue.

When *hoʻo* does have a typical causative reading (on either definition of 'causative'), a derived transitive (37) takes on the case marking properties of a standard transitive. Case marking for derived ditransitives also behaves as expected, with the direct object in the causative case marked accusative (38).[5]

(37) a. Mākaukau ka mea ʻai.
ready the thing food
'The food is ready.'

b. Ua hoʻo-mākaukau ʻo Manu i ka mea ʻai.
PERF CAUS-ready SUBJ Manu OBJ the thing food
'Manu prepared the food.' (Hawkins 1979, p.24)

(38) a. Ua ʻike ke koa i ka ihe.
PERF see the warrior OBJ the spear
'The warrior saw the spear.'

b. Ua hō-ʻike ke koa i ka ihe i kona ʻenemi.
PERF CAUS-see the warrior OBJ the spear to his enemy
'The warrior showed the spear to his enemy.' (Hawkins 1979, p.24)

In addition to *hoʻo*, Elbert and Pukui (1979) describe the prefix *haʻa* as having, like *hoʻo*, both causative and simulative uses, with phonologically conditioned allomorphs *hā* and *ha*. The prefix *haʻa*, like *hoʻo*, can attach to apparent nouns (39, 40), creating verbs. *Haʻa* can also attach to nouns and derive the simulative meaning, as in (41).[6] (I will argue below that the apparent nouns in these cases are actually roots.)

(39) a. lau 'leaf'

b. haʻalau 'to produce leaves'

(40) a. kia 'nail, spike'

b. hākia 'to nail, fasten'

[5]I am glossing *i* as an object marker here. The same *i* is sometimes glossed as a preposition (as it has prepositional uses beyond object marking, and it also introduces indirect objects, as in (38b)); the analysis does not depend on this distinction.

[6]Elbert and Pukui (1979) and Elbert and Pukui (1986) also note that haʻa, when prefixed to certain adjectives, and in particular color adjectives, can have the meaning '-ish' or 'somewhat,' as in *ʻele* 'black' versus *hāʻele* 'blackish.' A reviewer notes that this may be expected as a type of simulative meaning along the lines of (41).

(41) a. koa‘e ‘tropicbird’

b. ha‘akoa‘e ‘to act like the tropicbird’

As with *ho‘o*, when a verb is prefixed with *ha‘a*, case properties behave as expected. For example, in (42a), the verb *lele* is used intransitively to mean ‘depart,’ and the sole argument is nominative. In (42b), *ha‘alele* ’depart’ is now transitive, with a nominative subject and accusative object.

(42) a. Ua lele ka hanu o Moa.
PERF depart(INTRANS) the breath of Moa
‘Moa’s breath has departed.’

b. Ha‘alele koa wa‘a i koa kanaka.
depart(TRANS) koa canoe OBJ koa people
‘The koa canoe leaves the warriors (lit. ‘koa men’).’ (Pukui, 1983)

Under Elbert and Pukui’s structuralist analysis, *ho‘o* and *ha‘a* are separate morphemes which attach in different positions in affixal structure. Here, I will argue, pace Elbert and Pukui, that *ho‘o* and *ha‘a* should be analyzed as syntactically conditioned allomorphs, parallel to the analysis of nominalizers *-na* and *‘ana* discussed above.

3.1 Interpretation and Interaction

While *ho‘o* and *ha‘a* are historically related (both being related to Proto-Polynesian *faka-* (Elbert and Pukui (1986)), it is not immediately obvious if these should be treated as separate morphemes or as allomorphs in the synchronic grammar. While I will argue for an analysis in which *ho‘o* and *ha‘a* are syntactically conditioned allomorphs, Elbert and Pukui (1979) treat *ho‘o* and *ha‘a* as separate morphemes.

On the semantic side, Elbert and Pukui (1979) motivate their analysis by the fact that *ho‘o* and *ha‘a* can occur with the same root, deriving the same meaning (43, 44); the glosses for (43c) and (44c) are reproduced exactly as they appear in Elbert and Pukui (1986). Within Elbert and Pukui’s structuralist framework, the fact that both *ho‘o* and *ha‘a* can occur on

the same root, with no clear conditioning factor governing their distribution, suggests that these be treated as separate morphemes.

(43) a. koʻo 'brace, prop, pole'

b. hoʻokoʻo 'to prop with a pole'

c. haʻakoʻo (same as hoʻokoʻo)

(44) a. 'awe 'pack, knapsack'

b. hōʻāwe 'to carry on the back'

c. hāʻawe (same as hōʻāwe)

Further, Elbert and Pukui (1979) point out that *hoʻo* can attach to a *haʻa*-prefixed stem (i.e. *hoʻo-haʻa*-ROOT), but never the converse. For an example such as (45), prefixation of *hoʻo* and *haʻa* results in the valency increase with each prefixation, as in (45c); (46) illustrates the same pattern of data. Given Elbert and Pukui's structuralist perspective, this is taken as evidence that *hoʻo* and *haʻa* have separate dedicated positions in the verbal structure.

(45) a. nui 'large'

b. haʻanui 'to brag, exaggerate'

c. hoʻohaʻanui 'to cause to brag'

(46) a. nini 'to pour'

b. hanini 'to overflow'

c. hoʻohanini 'to cause an overflow'

Corpus analysis on Elbert and Pukui (1986)'s dictionary bears out Elbert and Pukui (1979)'s intuition that *hoʻo* may prefix to *haʻa*, but not the other way around. While forms with the struture *hoʻo-haʻa*-ROOT) are well attested (see e.g. (45c) and (46c)), corpus analysis (considering also phonologically conditioned allomorphs) yields only one result for a potential *haʻa-hoʻo*-ROOT form. However, this form (47) is a noun; if it does involve the same *haʻa* and *hoʻo* discussed here, either in the grammar described here or in some earlier form of the

language recorded in the dictionary via textual source, this form does not appear to involve a valency increasing use of *haʻa* (note that *hoʻoili* ('to bequeath') is, however, derived from *ili* ('inheritance,' 'to inherit (intransitive)')).

(47) hāhoʻoili (noun; rare) 'hereditary stalk; established people with inherited land'

However, *hoʻo* and *haʻa* do not behave identically. In particular, prefixation with *haʻa* (like the nominalizer *-na*) can yield idiosyncratic interpretations, unlike *hoʻo*. While it is true that *hoʻo* and *haʻa* can attach to the same word and derive the same or similar meanings, as in (43) and (44), some *haʻa* derived forms have less predictable meanings, whereas *hoʻo* is generally transparent semantically.

For example, *lele* is an intransitive verb, and *hoʻolele* is a transitive verb that extends those meanings (48). However, *haʻalele* has a slightly different set of meanings that are not obvious from the meaning of *lele*. When both prefixes occur, as in *hoʻohaʻalele*, the meaning is derived from the meaning of the *haʻa* prefixed form, not from the meaning of the root alone.[7]

(48) a. lele (intransitive verb) 'to fly, jump; to rush out, as to attack; to disembark; ...'

b. ho'olele (transitive verb) 'to cause to fly; to fly, as a kite; to embark, as on a project ...'

c. haʻalele (transitive verb) 'to leave, desert, abandon ...'

d. ho'oha'alele 'to pretend to quit or leave; to cause to quit'

Further, *hoʻo*, if present, is always the leftmost causative/simulative prefix; *hoʻo* is also fully productive, as discussed above. *Haʻa*, though, does not occur on all roots. Instead, other morphemes occur with the same meaning as *haʻa*, in particular *ʻā* and *kā*; Elbert and Pukui (1979, p. 65 & 68-71) also define these as 'causative/simulative' (though unproductive) and treat them on a par with *haʻa*. In addition, in some cases more than one of these three

[7]These semantic differences are reflected as well in the organization of Elbert & Pukui's dictionary (Elbert and Pukui, 1986). In their work, they include *hoʻo* prefixed forms under the headword of the root (e.g. *hoʻolele* is part of the entry for *lele*). In contrast, *haʻa* prefixed forms have their own entry.

morphemes (*haʻa*, *ʻā*, and *kā*) can occur on the same root, but with slightly different senses. (49) and (50) illustrate the valency increasing uses of prefix *ʻā* and *kā*, respectively.

(49) a. hewa 'mistake'

b. 'āhewa 'to condemn'

(50) a. hinu 'lustrous'

b. kāhinu 'to annoint'

While *haʻa*, *ʻā*, and *kā* are generally in complementary distribution, a limited number of roots take both *ʻā* and *kā* (Elbert and Pukui, 1979, p. 68), usually with a slightly different shade of meaning (51, 52).

(51) a. muku 'cut short'

b. 'āmuku 'to cut off'

c. kāmuku 'to diminish'

(52) a. wili 'to twist'

b. 'āwili 'to mix'

c. kāwili 'to snare'

As with roots prefixed with *haʻa*, roots prefixed with *ʻā* and *kā* can have *hoʻo* as an additional prefix. And, parallel to the *hoʻo-haʻa*+ROOT forms discussed above, *hoʻo* increases the valency of the stem, maintaining the derived meaning, typically deriving a transitive from an intransitive, as in (53) and (54).

(53) a. pono 'proper'

b. 'āpono 'to approve' (intransitive)

c. hoʻāpono 'to approve, accept, justify, find not guilty in a trail' (transitive)

(54) a. huli 'to turn'

b. kāhuli 'to change' (intransitive)

c. hoʻokāhuli ‘to change’ (transitive)

A preliminary attempt at characterizing the data in this section leads to the following conclusions (though several important patters of data will be discussed below, leading to a more complete analysis). First, there are three prefixes (all less productive than *hoʻo*) which are mostly in complementary distribution with each other: *haʻa*, *ʻā*, and *kā*. These three morphemes generally increase the valency of the root to which they attach (though the behavior of these prefixes is more fully specified in the following section). In the rare case that more than one of *haʻa*, *ʻā*, and *kā* can attach to a root, there typically obtains an interpretation that is not fully transparent. At the same time, a different form, *hoʻo*, can co-occur with the three morphemes *haʻa*, *ʻā*, and *kā*, always attached in the ‘leftmost’ position, and with no competing allomorph (setting aside surface phonological alternations).

Within the framework summarized above, I argue that the Hawaiian causative/simulative affixes be understood in terms of root versus non-root attachment. Specifically, *hoʻo* is the outer-attached realization of a type of verbal affix, while the other forms are inner-attached realizations of the same morpheme; direct root attachment can then induce root-conditioned allomorph selection (e.g. *haʻa*, *ʻā*, or *kā*) as well as non-transparent semantics, as discussed above with respect to (48), (53), and (54). The ‘outer’-attaching head is not local to the root, and therefore does not participate in root-conditioned allomorph selection (putting aside purely phonologically conditioned allomorphy). Finally, outer attachment (the *hoʻo* forms), being non-local to the root, always results in transparent semantics.

3.2 Morpho-Syntactic Status of the Hawaiian Causative

In this section, I further consider the status of *hoʻo* and *haʻa* with respect to their status as potential allomorphs and some theoretical considerations for causatives more broadly. While the analysis of *haʻa* (and related forms) pose some complications, I begin with a discussion of *hoʻo*, which patterns with other cognate forms in Polynesian.

For example, Gould et al. (2009) discuss the status of the Niuean prefix *faka*. As illus-

trated in (55), (56), and (57), the core cases of affixation with Niuean *faka* pattern with those of Hawaiian *hoʻo*. Like with Hawaiian, affixation with *faka* can also indicate intention. According to Gould et al. (2009), *faka* selects a vP (which itself may have a vP, aP, or nP complement), along similar lines to the analysis presented here for Hawaiian *hoʻo*.

(55) a. tū 'to stand'

b. fakatū 'to make stand'

(56) a. fī 'enemy'

b. fakafī 'to niggle'

(57) a. Niue 'Niue'

b. fakaNiue 'the Niuean way'

Samoan *faʻa* is extensively discussed by Tollan (2018) and Hopperdietzel (2021), with core cases appearing in (58) and (59) (Tollan, 2018).

(58) a. Sā puna le vai.
PST boil the water
'The water boiled.'

b. Sā faʻa-puna e le teine le vai.
PST CAUS-boil ERG the girl the water
'The girl boiled the water.'

(59) a. Sā siva le teine.
PST dance the woman
'The woman danced.'

b. Sā faʻa-siva e le tamaloa le teine.
PST CAUS-dance ERG the man the woman
'The man made the woman dance.'

As Tollan (2018) points out, Samoan *faʻa* derives causatives from unaccusative, unergative, and middle predicates. However, an important difference between Samoan and Hawaiian is that *faʻa* appears to be more restricted than *hoʻo*, insofar as Samoan *faʻa* does not apply to transitive verbs with ergative case-assigned subjects; while outside the scope of this paper,

these differences may be in part due to the difference in case marking alignment between the two languages. Like Hawaiian *hoʻo*, Samoan *faʻa* introduces a volitional agent.

Similar to the the analysis of *hoʻo* proposed here for Hawaiian, Hopperdietzel (2021, p. 130) argues that Samoan *faʻa* does not select roots based on the following evidence: i) the absence of root-driven allomorphy, ii) the absence of idiosyncratic readings for *faʻa*-prefixed words (contrasted with Samoan prefix *ta*, which Hopperdietzel does analyze as root-selecting), and iii) preservation of meaning for *faʻa* prefixed words under root-selecting nominalization.

While having properties of non-root-selecting affix, Tollan (2018) argues that Samoan *faʻa* is a voice head with respect to the 'bundling' parameter for verbal heads proposed Pylkkänen (2008), according to which specific languages may realize different verbal properties (voice, causation, transitivity, etc.) on either individual or conflated heads (see also Nie (2020) for extensions of this model). Hopperdietzel (2021) suggests that Samoan *faʻa* has properties of both voice bundling and non-voice bundling languages; the restriction against *faʻa* with transitive verbs that have ergative subjects suggests voice bundling, because *faʻa* introduces causative semantics while also interacting with voice via the restriction on certain transitives.

Samoan *faʻa* has non-bundling characteristics at the morphological level as well, insofar as *faʻa* co-occurs with passive morphology, according to Hopperdietzel (2021). Legate (2014, p. 111-118) shows that Malayo-Polynesian Acehnese also allows causative and passive morphology to co-occur, which she argues is strong evidence against a bundling analysis for Acehnese. Like Samoan and Acehnese, Hawaiian also allows *hoʻo* with the affixal passive in Hawaiian. For example, (60) and (61) illustrate forms with the passive suffix *-C(i)a*. In (60), the base *ʻike* is modified by *hoʻo* resulting in a causative, with the causative form being passivized in (60c). (61) illustrates the same pattern. While I return to a discussion of the Hawaiian passive below, the data here show that *hoʻo* and the passive may co-occur.

(60) a. ʻike 'to see'

b. hōʻike 'to show'

c. hōʻike-a ‘to be shown’

(61) a. ala ‘path; (intransitive) to waken, stay awake; (intransitive) to arise, get up’

b. alahia (pas/imp. of ala)

c. hoʻālahia ‘to awaken; wakefulness; insomnia’

(62) I ka hiki hoʻ-āla-hia nei lā, ē ala mai ʻoe
at the coming to-be.awakened-PAS DIR time, IMP waken DIR you
‘the time to be awakened comes, awake’ (Elbert and Pukui, 1986)

Given the passive data discussed here, and also considering the lack of voice/transitive restriction on *hoʻo* in Hawaiian (unlike in Samoan), I conclude that Hawaiian is not a voice bundling language insofar as the causative is concerned. Therefore, I will gloss this morpheme v_{caus}. Following Hawkins (1979)'s characterization of the thematic properties of *hoʻo*, I take v_{caus} to be associated with an agentive argument in its specifier, and therefore somewhat distinct from transitive/unergative v, which is associated with (at least) agentive and experiencer arguments (in section 4, below, I further explore the relationship between v_{caus} and v). Therefore, the analysis developed here is similar to that proposed by Harley (2017) for other non-bundling languages, according to which “verbalizing v and causativizing Caus are categorically and morphosyntactically distinct.”

With an analysis of *hoʻo* as a non-root selecting allomorph of v_{caus} in place, I now consider the status of *haʻa* and its alternants. Elbert and Pukui (1986) describe as *haʻa* “a prefix similar in meaning to the causative/simulative *hoʻo*”, while (Elbert and Pukui, 1979, p. 68) describe the prefixes *ʻā* and *kā* as also having meanings similar to *hoʻo*. In some cases, the similarity to *hoʻo* is clear in terms of valency increase, as in (65, 66), repeated from above.

(63) a. lele (intransitive verb) ‘to fly, jump; to rush out, as to attack; to disembark; ...’

b. haʻalele (transitive verb) ‘to leave, desert, abandon ...’

(64) a. nui ‘large’

b. haʻanui ‘to brag, exaggerate’

A key point in the framework adopted here, however, is that roots must have minimally one (often null) affix, with roots themselves being underspecified semantically. Under the analysis in which *ha‘a* is a root selecting prefix, it is not attached e.g. to the word *lele* (63a), but rather to a root which is only indirectly visible (i.e. roots cannot stand alone without an affix). Therefore, the representations of the examples above are arguably as in (65) and (66), under an analysis in which *ha‘a* is a root-selecting affix (independent of its status with respect to *ho‘o*). Likewise in (66), *ha‘a* does not increase the valency of *nui* the adjective, but rather $\sqrt{nui}$ the root. For this reason, evaluating the status of a root attached affix is arguably more difficult as compared to outer affixes, which, by definition, attach to stems that have fixed meanings.

(65) a. lele → $[v\ [\sqrt{lele}]]$ ‘to fly, jump; to rush out, etc.’

b. ha‘alele → $[v_{caus}\ [\sqrt{lele}]]$ ‘to leave, desert, abandon, etc.’

(66) a. nui → $[a\ [\sqrt{nui}]]$ ‘large’

b. ha‘anui → $[v_{caus}\ [\sqrt{nui}]]$ ‘to brag, exaggerate’

In order to characterize the difference between e.g. *lele* and *ha‘alele* in (65), I propose that v and v_{caus} are distinct in this grammar. In other words, both (65a) and (65b) represent idiosyncratic interpretations with AFFIX + ROOT structure.

Given the available corpus evidence, it is difficult to exactly specify the semantic contribution of v versus v_{caus}. However, according to Makanani (1973), also cited by Elbert and Pukui (1979), some of the key effects of prefixation with *ha‘a* when compared with a form without the prefix include transitivization (67), and verbalization (including turning a form into an obligatory verb), as in (68)-(70).

(67) a. ka‘a ‘to roll’ (intransitive)

b. ‘āka‘a ‘to peel’ (transitive)

(68) a. kiu ‘spy’

b. ‘akiu ‘to spy’

(69) a. liko ‘leaf bud; to bud’ (verb or noun)

b. hāliko ‘to bud, spring forth’ (verb only)

(70) a. laʻi ‘calm, stillness’ (verb or noun)

b. hālaʻi ‘same as *laʻi*, calm’ (verb only)

In other cases, meanings of verbs may be different without a change in grammatical status, as in (71), (72), and (73). Other core meanings of these prefixes include no change (72a, 72b), as well as the simulative reading discussed above.[8]

(71) a. inu ‘to drink’

b. hāinu ‘to give drink’

(72) a. lewa ‘to float, swing’ (intransitive)

b. haʻalewa ‘same as lewa’

c. kaʻalewa ‘to revolve; to drift’ (intransitive)

(73) a. huli ‘to turn, reverse’

b. kāhuli ‘to change, alter’

As discussed above in connection with (65) and (66), the (a) and (b) examples in the previous pairs of words cannot be compared directly in the framework adopted here; rather, each word consists of a null categorizing prefix (v, n, etc.) in the (a) example and v_{caus} in the (b) example. For the examples in which there is no difference or only a semantic difference between the (a) and (b) forms (e.g. (72a, 72c)), I conclude that the (a) form (with verbalizing v) and the (b) form (with v_{caus}) have their meaning due to idiosyncratic interpretation (given the semantically underspecified nature of roots).

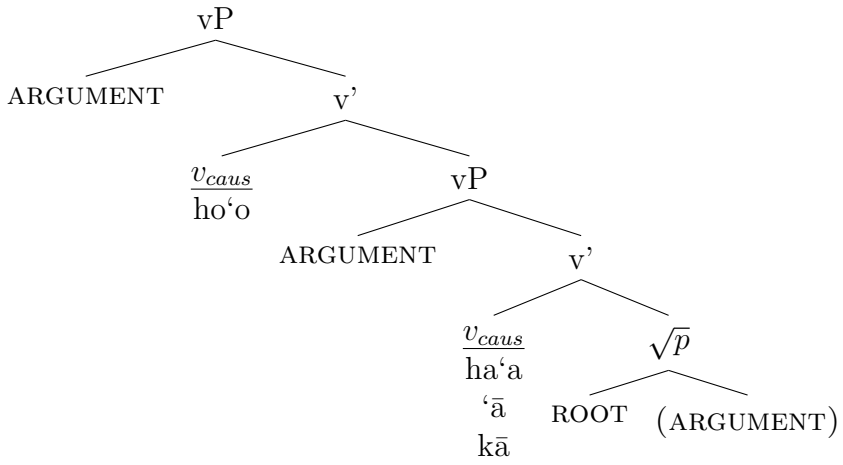
Given the evidence here (including the commentary included in Elbert and Pukui (1979)), I conclude that *haʻa*, *ʻā*, and *kā* are root-selecting allomorphs of a causative verbal head;

[8] One complication for a few of the ‘causative/simulative’ *kā*-prefixed forms is that they are nouns; however Elbert and Pukui (1979, p. 69), describe some of these as “extrememly common,” for example *kāmaʻa* ‘sandals,’ from *maʻa*, ‘to tie.’ Given their description as common forms, I will set these aside as either zero-nominalized or lexicalized exceptions.

grammatically speaking, this causative head adds a specifier, though an understanding of the semantic difference between root-selecting v and v_{caus} requires additional research. At the same time, differences between *ho'o* and the prefixes analyzed here as root-selecting pattern with other analyzes of inner and outer causative attachment in other languages in terms of interpretation and productivity (see e.g. Travis (2000a), Svenonius (2005), and Harley (2008)). Differences between the interpretations of outer-attaching *ho'o* and the inner-attaching forms are due to their differing structure, which I examine in more detail in the section 4; additional evidence for *ha'a* as a root-attached form is presented in section 5 in terms of affix co-occurence restrictions.

Returning now to the analysis of *ho'o*/*ha'a* in terms of inner/outer allomorphs, I argue that there exists one general valency increasing morpheme v_{caus}, with underlying phonology CV(CV) (ignoring length distinctions on the initial V; note that the glottal stop is phonemic in Hawaiian). This one underlying morpheme would then have the outer allmorph *ho'o* and inner allomorphs *ha'a*, *'ā*, and *kā*, with the morpho-syntactic representation in (74), in which specific allomorphs are selected post-syntactically via late insertion in a realizational framework.

(74) (preliminary analysis)



Under such an analysis, v_{caus} would have the insertion rules listed in (75). These insertion rules characterize the fact that *ho'o* is always an outer allomorph in the presence of any one of

haʻa, *ʻā*, or *kā*. Further, as *hoʻo* can attach to v_{caus}, the fact that *hoʻo* yields only transparent interpretation is derived. However, (75) cannot be a complete analysis, because there are many instances in which *hoʻo* appears to attach to the root directly, as in (28-34).

(75) Spell-out of v_{caus} (preliminary analysis)

a. $v_{caus} \leftrightarrow$ hoʻo-/____ $\{v_{caus}\}$

b. $v_{caus} \leftrightarrow$ haʻa-/____ $\{\sqrt{}$kia, $\sqrt{}$koaʻe, $\sqrt{}$lele,...$\}$

c. $v_{caus} \leftrightarrow$ ʻā-/____ $\{\sqrt{}$hewa,...$\}$

d. $v_{caus} \leftrightarrow$ kā-/____ $\{\sqrt{}$hinu,...$\}$

While I will ultimately adopt an analysis along the lines of (74,75) for v_{caus}, several complications remain to be addressed for the analysis of valency increase/causative. These complications involve a more detailed view of the argument structure of words with the relevant prefixes.

4 Extending the Analysis of Valency Increase

While Elbert and Pukui (1979) gloss all of the prefixes discussed thus far as causative or simulative, the argument-structural and semantic properties of these prefixes are more varied than one might expect. According to Hawkins (1979), the term 'causative' as applied to *hoʻo* is misleading, as it does not always have a clear causative reading. In particular, Hawkins (1979, p. 24) notes that with transitive verbs, *hoʻo* often does not add an argument, but rather "shows that the agency of the verb is more deliberate."[9] However, a reading of causative affixes which highlights the intention or deliberate purpose of the agent, without increasing valency, is not uncommon, as noted by Aikhenvald (2011) for a set of typologically diverse languages. For descriptive purposes, I will follow Hawkins (1979) and call this the 'deliberative' reading.

[9]Elbert and Pukui (1979) confirm this reading, citing an earlier version of (Hawkins, 1979).

(76) a. Ua peku ‘o Kale i ke kinipōpō.
PERF kick SUBJ Kale OBJ the ball
‘Kale kicked the ball.’

b. Ua ho‘opeku ‘o Kale i ke kinipōpō.
PERF CAUS-kick SUBJ Kale OBJ the ball
‘Kale deliberately kicked the ball.’ (Hawkins 1979, p.24)

As suggested by Hawkins (p.25), affixation of *ho‘o* always results in the subject being agentive/volitional, regardless of the effect on the number of arguments. For example, (77) (repeated from (38)), illustrates the verb *‘ike* ‘to see’ taking an additional argument as *hō‘ike* ‘to show.’ However, a similar experiencer-type verb, *lohe* ‘to hear,’ becomes agentive ‘to listen’ with the same prefix (78), but without an increase in valency.

(77) a. Ua ‘ike ke koa i ka ihe.
PERF see the warrior OBJ the spear
‘The warrior saw the spear.’

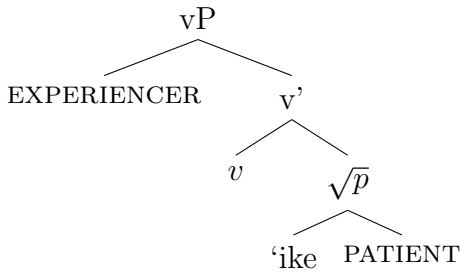
b. Ua hō‘ike ke koa i ka ihe i kona ‘enemi.
PERF CAUS-show the warrior OBJ the spear to his enemy
‘The warrior showed the spear to his enemy.’ (Hawkins 1979, p.24)

(78) a. Ua lohe ka luahine i na manu.
PERF hear the old-woman OBJ the(pl) bird
‘The old woman heard the birds.’

b. Ua ho‘olohe ka luahine i na manu.
PERF CAUS-listen-to the old-woman OBJ the(pl) bird
‘The old woman listened to the birds.’ (Hawkins 1979, p.24)

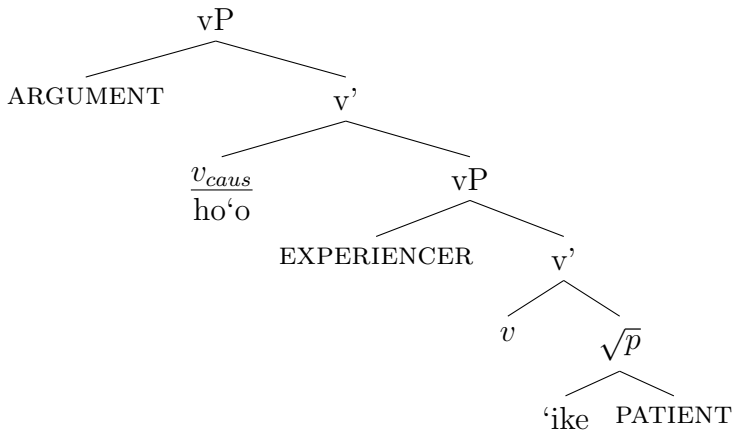
In order to explain the data in (76-78a), I first consider non-deliberative transitives, such as *peku* ‘to kick,’ *lohe* ‘to hear’ and *‘ike* ‘to see.’ Following Marantz (1984), Chomsky (1995), Kratzer (1996), and a substantial body of subsequent research, I assume a representation in which a verbal head v introduces the agent or experiencer argument for a simple transitive (for additional references, see Marantz (1997); Hale and Keyser (2002), as well as Pylkkänen (2008) and references therein). Under such analysis, the argument-structural representation of *‘ike* ‘to see,’ would be as in (79).

(79)



Following the analyses in e.g. Pylkkänen (2008), Harley (2008), and Harley (2017), the representation of *hōʻike*, the derived causative 'to show,' would include an additional causer argument as compared to the structure in (79). This would result in the the following argument-structural representation (not including any subsequent movement operations needed to derive the final word order).

(80)

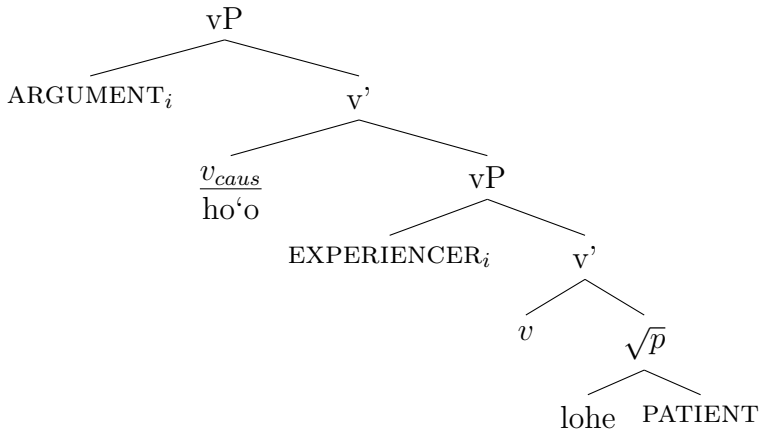


The representations in (79) and (80) provide an analysis for (77), in which affixation of *hoʻo* transparently increases the number of arguments. The structure in (80) is also consistent with the analysis of *hoʻo* in the prior section, insofar as *hoʻo* is in the outer domain and not root attached in (80), with verbalizing v being in the inner domain.

This analysis can be extended to the deliberative use of *hoʻo* if the 'cause-er' argument and the argument of v are co-indexed. For example, in (78), *hoʻolohe* has the meaning 'to listen,' derived from *lohe* 'to hear.' Suppose that, parallel to *hōʻike*, both a causer and an experiencer argument are represented, but in this case the causer argument binds the experiencer argument, such that causer (argument of *hoʻo*) and the experiencer argument

of ‘to listen’ are co-indexed. An example such as (78b) would, roughly, have the meaning ‘the woman caused herself to hear the birds.’ This analysis could therefore be understood as a morpho-syntactic implementation of the model of anticausatives proposed in Koontz-Garboden (2009) and Beavers and Koontz-Garboden (2013).[10] Under this view, the representation of the deliberative is the same as the transparent causative, but with the relevant co-indexation, as in (81); the same analysis extends to (76) ‘to kick deliberately,’ in which case the v is agentive.

(81)



With respect to the co-indexed arguments in (81), the lower argument must be a null reflexive or, if not, it must be omitted from the final representation in order to satisfy Condition C of the Binding Theory. This analysis facilitate the understanding of *ho‘o* as a valency increasing morpheme in both its causative and deliberative uses, thereby unifying the two constructions.[11]

[10]Tyler (forthcoming) examines non-valency increasing causatives from a cross-linguistic perspective, adopting aspects of Bruening (2013)’s analysis of passives. I refer the reader to this paper for additional details of this construction and thank Matthew Tyler for discussion of these examples.

[11]A question which remains open concerns why the deliberative reading is associated with transitive verbs. For example, (Hawkins, 1979) cites the contrast between (i) and (ii), in which the derived form of the intransitive has a simulative reading, whereas the derived form of the transitive has the deliberative interpretation. In the framework pursued here, both the intransitive and transitive versions of ‘hide’ should involve the same v head, as the intransitive entry is unergative (and not unaccusative). Whether the explanation for the difference in *ho‘o* derived forms should implicate the morpho-syntax or the semantics is unclear to me. Nevertheless, in both (ib) and (iib), v intervenes structurally between the valency increasing morpheme and the root, resulting in the outer allomorph selection.

(i) (ia) pe‘e (intransitive) ‘to hide oneself’

The model developed thus far can account for additional examples in which affixation of *ho‘o* does not transparently increase valency. (82) illustrates a stative base, *heo* ‘proud,’ and several forms built from this base. In (82b), *ha‘a* is affixed, resulting in an intransitive. (82c) and (82d), however, are somewhat problematic given the analysis thus far; the form with only *ho‘o* affixed has no argument structural information listed in the dictionary, but, given the translation, I assume that it is – or at least can be – intransitive, and *ho‘o*-affixed forms built on statives, as in this case, are commonplace. Finally, the form with *ho‘o* and *ha‘a* affixed is listed as a ‘causative/simulative,’ and, given the translation, I assume that its primary (perhaps only) use is intransitive.

(82) a. heo ‘proud’ (stative)

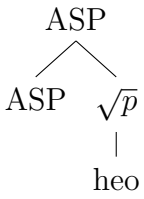
b. ha‘aheo ‘proud, haughty; to strut, to cherish with pride’ (intransitive)

c. ho‘oheo ‘to show off, boast’

d. ho‘oha‘aheo ‘to act haughty’ (listed as ‘causative/simulative’)

To account for this pattern of data, I follow Kratzer (2000) and Embick (2003) in assuming that statives involve an aspect head which is neither eventive nor resultative, i.e. not eventive v (see also Travis (1994) and Harley (1995)). Under this analysis, (82a) has the following representation, in which the aspect head ASP has a null realization.

(83)



With respect to (82c), which has *ho‘o* but, presumably, only one argument, *ho‘o* attaches to ASP directly. This accounts for the single argument for this form, while the causative

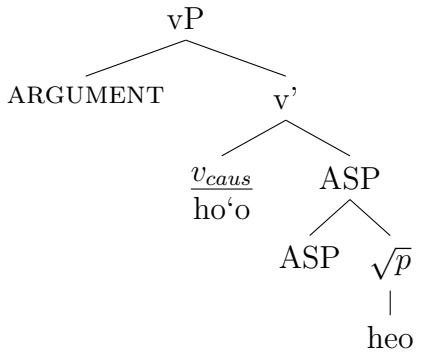
(ib) ho‘ope‘e ‘to hide or pretend to hide’ [v_{caus} [v [pe‘e]]]

(ii) (iia) hūnā (transitive) ‘to hide’

(iib) ho‘ohūnā ‘to hide deliberately’ [v_{caus} [v [ho‘ohūnā]]]

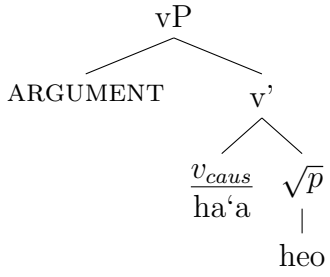
head introduces the eventivity (assuming that causation entails eventivity). The result is the structure in (84).

(84)



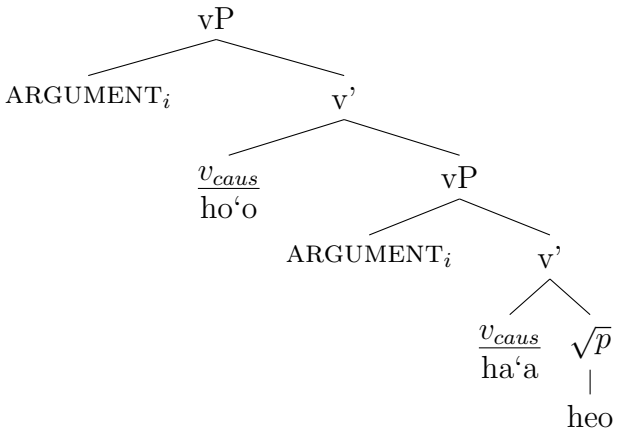
The final two forms to consider from (82) both involve affixation with *ha‘a*. In the situation where *ha‘a* appears as the sole affix, v_{caus} attaches directly to the root, taking the place of v. As with (84), the causative head itself introduces eventivity.

(85)



With respect to (82d), this is listed as a simulative form, according to which it would have a single argument and the semantics associated with simulative forms, i.e. ‘to act like x, to behave like x, or to pretend to be x.’ Simulative forms with *ho‘o-ha‘a* prefixation can be viewed as somewhat parallel to deliberatives. For the deliberative reading, the argument of *ho‘o* binds the null argument of v, whereas for a simulative such as *ho‘oha‘aheo*, the argument of *ho‘o* binds a null argument of *ha‘a*. Roughly, the interpretation associated with (86) corresponds to the agent causing their own self to take on the properties of the root.

(86)



Given the analysis pursued here, a number of morphemes can attach locally to a root; thus far, these have included the non-eventive/resultative aspect head ASP, transitive/unergative v, and the valency increasing morpheme, which is realized as one of the phonologically conditioned allomorphs of *ha‘a*, or, less commonly, *‘ā* or *kā*. When the valency increasing morpheme is in a position that is not local to the root, it is realized as *ho‘o* (or one of its phonologically conditioned allomorphs). The composition of these different morphemes yields a number of readings, including ditransitive causatives, deliberative transitives, and simulatives.

A final complication for the analysis of *ho‘o* and *ha‘a* involve simulative forms derived by prefixation of *ho‘o* or *ha‘a* directly on the root (in contrast to the pattern with *ho‘o-ha‘a-*ROOT observed for (82d)). Examples (88)-(90), repeated from (32-34) and (41), illustrate this pattern of data.

(87) a. kuli ‘deaf’

b. ho‘okuli ‘to act deaf or to feign deafness’

(88) a. haole ‘white person’

b. ho‘ohaole ‘to act like a white person’

(89) a. wahine ‘woman’

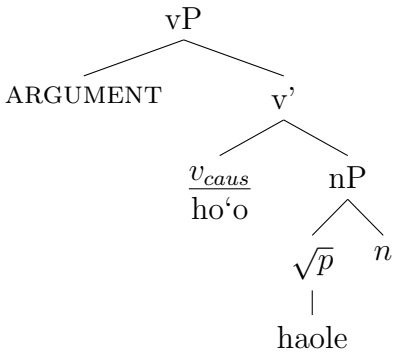
b. ho‘owahine ‘to behave like a woman, to grow into womanhood, to be effeminate’

(90) a. koa‘e ‘tropicbird’

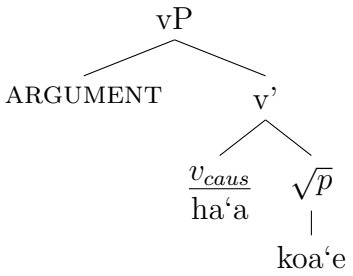
b. ha‘akoa‘e ‘to act like the tropicbird’

For these simulatives, I take (87) to follow from the analysis of statives, involving the head ASP, discussed above in connection with (82a). The rest of this data set, however, involves prefixation of *ho‘o* or *ha‘a* on nouns. In order to account for these data, I adopt the analysis of Embick (2003) and Embick and Marantz (2008), according to which n is a cyclic, category defining head on a par with v. Given that these simulatives have only one argument, a natural way to model this data is to let the causative morpheme either select the root directly (as proposed above for e.g. (85)), in which case the *ha‘a* allomorph obtains, or to allow the causative morpheme to select nP, in which case the surface form is *ho‘o*. According to this analysis, the representations of (88) and (90) would be as in (91) and (92), respectively.

(91)



(92)



4.1 Interim Summary

Thus far, I have argued for an analysis of *hoʻo*, *haʻa*, and related forms in which these are all allomorphs of one valency increasing morpheme. As the selectional properties and semantics of these forms are exceptionally broad compared to more cross-linguistically familiar cases of causatives, I have treated the underlying morpheme as an agentive, general valency increasing type of verbalizer, labeled v_{caus}, for the purpose of morpho-syntactic analysis. The key idea advanced here is that *hoʻo* is to be treated as an outer allomorph of the valency increasing morpheme, with *haʻa*, *ʻā*, and *kā* being inner allomorphs.

The descriptive literature on Hawaiian has implicated these allomorphs in a number of constructions, including causatives, deliberatives, and simulatives. These different constructions are modeled here via the combination of various morpho-syntactic properties, including the presence of functional heads such as v, ASP, n, null arguments and coindexation, and inner and outer domains for allomorph selection. The outer domain spell-out of v_{caus} is reflected in (93a), which includes the property of v_{caus} selecting v_{caus} (reflecting *hoʻo-haʻa-*ROOT forms); following Nie (2020), I assume that v_{caus} cannot occur more than twice due to independent limits on argument licensing. The other realizations of v_{caus} all reflect root selection.

(93) Spell-out of relevant morphemes

a. $v_{caus} \leftrightarrow$ hoʻo-/____ {v_{caus}, v, n, ASP}

b. $v_{caus} \leftrightarrow$ haʻa-/____ {$\sqrt{}$kia, $\sqrt{}$koaʻe, $\sqrt{}$lele, $\sqrt{}$ROOT,...}

c. $v_{caus} \leftrightarrow$ ʻā-/____ {$\sqrt{}$hewa, $\sqrt{}$ROOT,...}

d. $v_{caus} \leftrightarrow$ kā-/____ {$\sqrt{}$hinu, $\sqrt{}$ROOT,...}

e. $v \leftrightarrow \emptyset$-/____ {$\sqrt{}$ROOT}

f. ASP $\leftrightarrow \emptyset$-/____ {$\sqrt{}$ROOT}

g. $n \leftrightarrow$ -$\emptyset$/____ {$\sqrt{}$ROOT}

The model in (93) explains some longstanding generalizations in the descriptive literature

(Elbert and Pukui, 1979; Hawkins, 1979; Elbert and Pukui, 1986), insofar as *hoʻo* attaches to a range of functional heads, with the other valency increasing allomorphs selecting roots. One such generalization is that *hoʻo* is far more productive than any of *haʻa*, *ʻā*, and *kā*; this productivity is explained by the fact that the *hoʻo* form may be selected by a range of functional heads. This is further reflected in Elbert and Pukui (1979)'s claim (confirmed via corpus search) that *hoʻo* can be a prefix for any one of *haʻa*, *ʻā*, and *kā*, but never the other way around. Additionally, only *haʻa*, *ʻā*, and *kā* can yield idiosyncratic interpretations, whereas affixation with *hoʻo* is always transparent. At the same time, the fact that Elbert and Pukui (1979) call both *hoʻo* and *haʻa* 'causative/simulative' prefixes is captured here by their analysis as allomorphs of one underlying morpheme, in contrast to Elbert and Pukui (1979)'s own analysis in which these are separate morphemes.

The primary way that these prefixes differ is with respect to their ability to trigger causative semantics, in the 'make' or 'let' causative sense of the word. *Hoʻo*, but apparently not *haʻa*, can derive forms that are expressed by lexical causatives in English, such as 'feed' (29) and 'show' (77); also, many *hoʻo* forms are glossed in Elbert and Pukui (1986) in the form "to cause to [ROOT]", as in (45c), (46c), and (65b).

In order to further examine this semantic element of valency increase, a corpus search of Elbert and Pukui (1986) reveals the gloss "to cause to [ROOT]" for forms with *hoʻo* (and its phonologically conditioned allomoprhs) 145 times; these occur as *hoʻo*+ROOT or *hoʻo*+*haʻa* (or other causative alternant)+ROOT. Only one instance of the gloss "to cause to" remains in the dictionary, for the word *hoʻi*, where it is glossed as "To leave, go or come back; to cause to come back." (Hawkins, 1979, p.25) specifically refers to this form in her discussion of *hoʻo* as one (possibly the only) intradirective verb without a *hoʻo-* form. She speculates that the phonological similarity between *hoʻo* and *hoʻi* might be the cause of this gap.

By comparison, there are no instances of this gloss for forms with *haʻa* or any of its phonologically conditioned allomorphs in Elbert and Pukui (1986). A complicating factor in the descriptive literature involves one exception to the generalization described here, which is

given in Elbert and Pukui (1979)'s grammar (but not Elbert and Pukui (1986)'s dictionary) for *ha-ʻāpuka*, where this word is glossed as 'to cause to cheat' (Elbert and Pukui, 1979, p. 68). However, in the dictionary (Elbert and Pukui, 1986, p. 45), the same form is glossed as 'same as *hoʻāpuka*.' Fortunately, for this entry a full example is given, which I repeat here in (94), where I include glosses and a literal translation in addition to the biblical translation given in the text. In (94), the relevant form appears in a passivized relative clause, with the sole argument (outside the relative clause) being *ka waiwai* 'the wealth.' Given that this clause is passivized, an additional argument is suppressed, meaning that, from this evidence, *ha-ʻāpuka* only has two arguments (i.e. if it were in active voice), and does not have CAUSER-CAUSEE argument structure.

(94) E hele liʻiliʻi ka waiwai i ha.ʻāpuka wale ʻia.
PRES become little the wealth that HAʻA.swindle easily PASS
'Wealth gotten by vanity shall be diminished.' [Lit. ≈ Wealth that is easily swindled becomes diminished.]

From this, in conjunction with corpus search on the dictionary, I conclude that only *hoʻo*-forms can have CAUSER-CAUSEE argument structure. This argument-structural property of *hoʻo*, in conjunction with its productivity and transparent semantics, is predicted by a model in which *hoʻo* is an outer valency increasing allomorph, where it functions similarly to other examples of outer-domain causatives (see e.g. Folli and Harley (2005), Pylkkänen (2008) and Harley (2017)).

At this point, the analysis developed thus far provides a formal model for the observed properties of the morphemes under discussion (both the causatives and nominalizers). The following section will present further evidence for this proposal, illustrating the interaction of v_{caus} with nominalization. The interaction of *hoʻo* and *haʻa* with nominalizing morphology suggests the same analysis of inner and outer domain allomorphy discussed above.

5 Interaction of Nominalizers and Valency Increasers

The data on nominalization, discussed in section 2, illustrates that *-na* and *ʻana* can be fruitfully analyzed in terms of outer and inner attachment, such that *-na* is an inner, or root attached, allomorph of *n*, whereas *ʻana* selects a larger structure, namely vP. In this section, I argue that the Distributed Morphology approach to inner versus outer attachment offers a minimally stipulated analysis when considering the interaction of nominalizers and causatives. In particular, there is no restriction on the distribution of *hoʻo* (and its phonologically conditioned allomorphs) with respect to *-na* and *ʻana*. In contrast, corpus searching shows that *haʻa* (and its phonologically conditioned allomorphs) does not co-occur with *-na*, which is expected if both are *haʻa* and *-na* are root-selecting morphemes.

Given the analysis developed here thus far, it would be expected that *ʻana* co-occurs with both *hoʻo* and *haʻa*, as both valency increasers occur within vP, while *ʻana* selects vP. This prediction is borne out by examples such as (8), in which *hoʻo* co-occurs with *ʻana*, such that the entire *hoʻo*+VERB unit (along with the associated arguments) is nominalized. (95) illustrates a similar pattern of data, this time with a *haʻa* prefixed verb.

(95) lākou haʻanui ʻana ma ka mea lapuwale
their CAUSE-brag NOM PREP the thing vain
'their speaking great swelling words of vanity'

Hoʻo also co-occurs with *-na*. In (96), for example, the verb 'to pray in chant' is nominzalized with *-na*, deriving noun 'priest' (under this analysis, cyclic *n* attaches to the root directly in (96b), meaning that, properly speaking, the root (not verb) is nominalized). When valency is increased by the addition of *hoʻo* to the nominalized form, the meaning of the nominalized form is verbalized, meaning 'to ordain a priest' (96c), suggesting that *-na* is a closer or earlier attachment as compared to *hoʻo*. Within the theory pursued here, this is evidence that *-na* is an inner or root-attached morpheme, deriving a somewhat idiosyncratic meaning (i.e. given the range of meanings associated with *-na* nominalized forms, it seems possible, though counter-to-fact, that (96b) could have meanings such as 'prayer' or '(lay)

worshipper' – the actual interpretation further illustrates the unpredictable nature of *-na* affixed forms). Example (97) illustrates the same pattern of data; according to Elbert and Pukui (1986), (97c), but not (97a) can have the meaning 'to know', which references the meaning of the *-na* derived nominal.

(96) a. kahu 'to pray in chant'

b. kahuna 'priest'

c. hoʻokahuna 'to ordain a *kahuna*'

(97) a. 'ike 'to see'

b. 'ikena 'view, seeing, knowing'

c. hoʻikena 'to see, know'

Corpus searching on Elbert and Pukui (1986) reveals an interesting gap, namely that *-na* nominalized forms do not co-occur with *haʻa* (or any of its phonologically conditioned allomorphs). In order to search the corpus, regular expression searching was used to find all forms that meet the following two conditions: i) beginning with *haʻa* or any of its phonologically conditioned allomorphs, and ii) also ending with *na*, searching the entire (text normalized) dictionary, including headwords and all examples. Because this search included all words beginning with the common sequence *ha*, one of the allomorphs of *haʻa*, 117 results were found (including headwords and any duplicates in examples). However, cross-checking the results with the dictionary revealed that none of the results include the relevant morphemes (i.e. the results included forms beginning with the sequence *ha*, though none of these sequences were *haʻa* allomorphs).

For example, the only result of the corpus search beginning with *haʻa* and ending with *na* is *haʻawina* ('lesson, assignment, task, gift'), which is treated as monomorphemic in the dictionary (both in the entry for the lemma and in the absence of any root *wina* or *wi*). As another example, the search also found *hanaina* ('feeding'), which is indeed a nominalization

with *-na*, but with the monomorphemic root *hānai* ('to feed; to foster').[12]

At the same time, the gap in the corpus cannot be explained by a general rule forbidding the co-occurence of valency-related suffixes with the prefix *ha'a*. Hawaiian data with the passive suffix illustrate that *ha'a* as well as *ho'o* can co-occur with the passive affix. The passive in Hawaiian is complicated, as the language has both a passive affix and, separately, a more common free particle passive, sometimes both appearing in the same sentence.[13] Here, I only consider the suffix passive, *-Cia*. Elbert and Pukui (1979) label this suffix as 'passive/imperative;' while I only consider passive uses here, I retain their original gloss in the following examples.

To illustrate this affix, consider (98), in which the root takes the inner causative allomorph (98b) and then both the inner causative prefix and the passive suffix in (98c), the latter of which is illustrated in a sentence by (98d). The same passive form built from *wa'a* can also take the the outer causative *ho'o* as in (98e), in which the meaning of the base is visible as compared with the inner causative allomorph form in (98b).

(98) a. wa'a 'canoe, trench'

b. 'āwa'a 'long, narrow excavation; to dig a ditch or furrow'

c. 'āwa'ahia (pas/imp. of āwa'a)

d. Papaioa 'āwa'ahia ka lani
long-reef be-furrowed the high-chief
'the high chief is a furrowed reef' (chant)

e. ho'owa'alia 'to be dug out'

At the same time, a similar data set appears in (99), with the key difference being that *ho'o*, which I have argued to be the outer causative allomorph, co-occurs with the passive suffix (*-Cia*). Along similar lines, the base *lele* (discussed above in connection with (48)) can take the inner causative allomorph *ha'a* in conjunction with the passive suffix, as in (100).

[12]Note that, as discussed in connection with (4), the vowel length change for this example is typically of nominalizations with *-na*.

[13]See e.g. Chung and Seiter (1980) for discussion of the passive in Polynesian and its potential implication for the case marking split within Polynesian.

(99) a. ala ‘path; (intransitive) to waken, stay awake; (intransitive) to arise, get up’

b. alahia (pas/imp. of ala)

c. ho‘ālahia ‘to awaken; wakefulness; insomnia’

d. I ka hiki ho‘ālahia nei lā, ē ala mai ‘oe
at the coming to-be-awakened DIR time, IMP waken DIR you
‘the time to be awakened comes, awake’ (prayer)

(100) a. lele (intransitive verb) ‘to fly, jump, to rush out, as to attack; to disembark ...’

b. ha‘alelea (pas/imp. of ha‘alelea)

The examples with the passive suffix illustrate that both *ho‘o* and the forms that I have argued to be inner v_{caus} forms (*‘ā*, *ha‘a*) co-occur with the passive suffix, unlike the apparent restriction on inner v_{caus} forms with the inner n allomorph *-na*; in other words, there is no general prohibition on the co-occurence of a valency-related suffix (such as the passive) with either causative prefix. Within the analysis developed here, this makes sense given that the passive is selected by vP, and not a root directly. While there is no restriction on multiple ‘outer’ affixation, yielding forms with the structure *ho‘o*-ROOT-*Cia*, the passive does not compete for root attachment with the inner allomorph of v_{caus} either, allowing forms such as *ha‘a*-ROOT-*Cia* as well.

In the context of this data, it is striking that the dictionary reveals an absence of *-na* nominalized forms that also include *ha‘a* (and its phonologically conditioned allomorphs), given the prevalence of *-na* nominalizations involving *ho‘o* (and its phonologically conditioned allomorphs). This pattern of data, however, has a ready explanation given the analysis thus far. Specifically, both *-na* and *ha‘a* are root-selecting allomorphs of their respective underlying morphemes (nominalization and valency increase, respectively). Since there is only one root-selecting position within the Distributed Morphology framework adopted here, the corpus gap discussed is, in fact, the predicted state of affairs, insofar as only one of *ha‘a* or *-na* (but not both) can select the root. Under the analysis of Elbert and Pukui (1979), in which *ho‘o* and *ha‘a* are separate morphemes, these corpus results must be stipulated.

6 Conclusion

In this paper, I have pursued two parallel goals. One of these goals involves the morphological analysis of two valency related domains in Hawaiian. With respect to the causative, I argued that a set of surface forms – *hoʻo*, *haʻa*, *ʻā*, and *kā* – are allomorphs of one underlying morpheme. This analysis, if on track, represents a new understanding of this data set, insofar as the primary prior analysis, Elbert and Pukui (1979), presents *hoʻo* as being a distinct morpheme. Likewise, I argued that the nominalizers *ʻana*, a free particle, and the suffix *-na* are also allomorphs of one underlying nominalizing morpheme.

In both domains, the crucial difference between the surface forms is related to whether or not the underlying allomorph is local to the root, also known as the inner or root selecting domain. Both nominalizer *-na* and the set of causatives *haʻa*, *ʻā*, and *kā* have similar properties, such as yielding potentially idiosyncratic interpretations and being root adjacent. The forms that realize the outer, non-local position in the word structure also share properties; the causative prefix *hoʻo* and nominalizer *ʻana* are semantically transparent and more productive.

The second goal of this paper is to pursue a morpho-syntactic analysis of these data, according to which word formation is understood in terms of syntactic principles. In the tradition of Distributed Morphology accounts of valency-related morphology, this approach entails that word formation is part of the syntax, and not understood as a process that happens in a separate structure-building component of the lexicon (see e.g. Alexiadou (2009), Arad (2003), Harley (2008, 2009), and Pylkkänen (2008), among others). Evidence for this approach includes corpus results showing an absence of forms that include both the inner nominalizion allomorph (the suffix *-na*) and the inner causative allomorph (the prefix *haʻa*). Under the approach adopted here, the gap in the corpus is expected, and follows from general principles of morpho-syntactic structure, insofar as only one allomorph can select the root.

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