The Morpho-syntax of Hawaiian Valency Morphology

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1. Introduction

Elbert & Pukui (1979) (EP, henceforth) describe two morphemes in Hawaiian, *ho'o* and *ha'a*, characterizing both as 'causative/simulative' prefixes. Although EP claim that *ho'o* and *ha'a* are unrelated in the synchronic grammar which they describe, I argue that these are syntactically conditioned allomorphs, related to distinct cyclic domains, understood within the theory of Distributed Morphology (Halle & Marantz 1993, Marantz 1997). Specifically, the analysis depends on the notion of cyclic domains as characterized by Embick & Marantz (2008) and Embick (2010).

While several patterns of data that EP describe fit a non-allomorphic analysis (especially within their structuralist framework), I present evidence that only one of these prefixes (*ho'o*) co-occurs freely with other valency related morphology, such as nominalizing and passivizing morphemes, whereas the other prefix (*ha'a*) does not. This suggests that *ha'a* is in competition with other valency related morphology within a given domain. The analysis developed here explains this asymmetric distribution and also offers an explanation for the patterns of data which EP cite as evidence against allomorphy. Under the proposal in this paper, *ho'o* and *ha'a* are in complementary distribution, once the structural contribution of (sometimes null) functional heads is taken into consideration.

The data in this paper are drawn from Elbert & Pukui (1979) and (primarily) Elbert & Pukui (1986), from which I developed a corpus of 836 forms involving valency changing morphology. Each entry in the corpus includes a *ho'o* or *ha'a* derived form, and includes information regarding additional morphological processes involved in each derived form. Note also that while *ho'o* and *ha'a* are primarily implicated in valency change (as indicated by the descriptive labels provided by EP), at least *ho'o* is implicated in several non-valency related constructions which I do not discuss here given space limitations.[1]

The structure of this paper is as follows. First, I describe the causative and 'simulative' uses of *ho'o* and *ha'a* as understood by EP. Based on this description, I argue that the labels 'causative' and 'simulative' describe special cases, and that *ho'o* and *ha'a* are best understood as general valency increasers (i.e. increasing the number of arguments associated with the root). Turning the focus away from interpretation and towards the distribution of *ho'o* and *ha'a*, I present EP's analysis whereby these morphemes are not allomorphs. New evidence is then presented which suggests that *ho'o* and *ha'a* are indeed in complementary distribution, and should therefore be understood as allomorphs. Finally, I present a morpho-syntactic analysis of *ho'o* and *ha'a* which also considers aspects of nominalizing and passivizing morphology in Hawaiian as well, deriving the observed distribution patterns.

2. Description

EP characterize *ho'o* as a 'causative/simulative' prefix, with phonologically conditioned allomorphs *ho'o, ho', ho, hō,* and *hō'*.[2] Focusing now on what EP consider to be the causative function of *ho'o*, *ho'o* appears to have a broader domain of application than one might expect as compared with better understood morphological causatives, such as Japanese *-sase* (see e.g. Harley (2008) and references

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[1] For example, Hawkins (1979) describes a use of *ho'o* in which *ho'o*, when prefixed to a transitive verb, emphasises the deliberateness of the agent; according to Aikhenvald (2011), this is a common property of otherwise causative morphemes cross-linguistically.

[2] I follow Hawaiian orthographic conventions, including the macron for long vowels and ' for the glottal stop.

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therein). In particular, *ho'o* can increase valency not only to form causatives from transitive verbs (2), but also to increase the valency of intransitives (1), adjectives (3), and nouns (4); note that I use part of speech labels as a descriptive mechanism here, but analyze part of speech contextually in section 5, below. (The root vowel lengthening in (3) is related to stress domains (Alderete & MacMillan 2015) and not relevant for the current paper).

(1) a. hele 'to go'
    b. ho'ohele 'to set in motion'

(2) a. 'ai 'to eat'
    b. hō'ai 'to feed'

(3) a. ola 'alive'
    b. ho'ōla 'to save'

(4) a. hale 'house'
    b. ho'ohale 'to house'

EP describe an additional "causative/simulative" prefix *ha'a*, with phonologically conditioned allomorphs *hā* and *ha*. While *ha'a* and *ho'o* are historically related,[3] EP do not analyze *ha'a* and *ho'o* as allomorphs, despite their similar semantic function. For example, as with *ho'o*, prefixation of *ha'a* also increases valency, increasing valency on nominal roots (5, 6) as well as verbs (7).

(5) a. lau 'leaf'
    b. ha'alau 'to produce leaves'

(6) a. kia 'nail, spike'
    b. hākia 'to nail, fasten'

(7) a. 'āpuka 'to cheat'
    b. ha'āpuka 'to cause to cheat'

The 'simulative' meaning of *ho'o* and *ha'a*, according to EP, refers to cases where an idiomatic translation of a stem x plus prefix is "to act like x" (8, 9), turning a noun into an intransitive verb, i.e. increasing the valency. Additional examples of the simulative use of *ho'o* appear in (10) and (11), which illustrate the range of meanings derived by this construction.

(8) a. haole 'white person'
    b. ho'ohaole 'to act like a white person'

(9) a. koa'e 'tropicbird'
    b. ha'akoa'e 'to act like the tropicbird'

(10) a. wahine 'woman'
    b. ho'owahine 'to behave like a woman, to grow into womanhood, to be effeminate'

(11) a. kuli 'deaf'
    b. ho'okuli 'to act deaf or to feign deafness'

Descriptively, (1-11) show that *ho'o* and *ha'a* increase valency generally, and that EP's label 'causative/simulative' describes special cases. For the rest of this paper, I consider only the valency increasing property of *ho'o* and *ha'a*, leaving their semantic analysis for future research. The next sections therefore focus on the distribution of these morphemes, starting with the analysis presented in Elbert & Pukui (1979).

3. Prior Analysis

Despite the similarity between *ho'o* and *ha'a*, EP do not analyze them as allomorphs. Their motivation for treating them as separate morphemes is discussed in this section. First, EP note that both *ho'o* and *ha'a* can occur with the same root, deriving the same meaning (12, 13). For example, the root *ko'o* 'pole' can take either valency increasing prefix. Note that the glosses for (12c) and (13c) given here are exactly as they appear in Elbert & Pukui (1986), e.g. with *ha'ako'o* taken to have the same meaning as *ho'oko'o* 'to prop with a pole.'

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3 I thank Kenneth Cook for discussion of this point.

(12) a. ko'o 'brace, prop, pole'
      b. ho'oko'o 'to prop with a pole'
      c. ha'ako'o (same as ho'oko'o)

(13) a. 'awe 'pack, knapsack'
      b. hō'āwe 'to carry on the back'
      c. hā'awe (same as hō'āwe)

On the surface, (12) and (13) indicate that *ho'o* and *ha'a* have an overlapping distribution, and therefore are not allomorphs (though I will present a counter-argument to this position below).

The second argument EP present against the view that the morphemes under discussion are allomorphs relates to their distribution compared to each other, understood within a structuralist linguistics framework. Specifically, *ho'o* may itself be a prefix to a *ha'a* derived form, yielding the surface order *ho'oha'a*, while the reverse order **ha'aho'o* is unattested. Taking (14) as an example, first *ha'a* may attach to *nui* 'large' to increase the valency, deriving *ha'anui*, 'to brag, exaggerate.' *Ho'o* may then attach to the derived form *ha'anui* to form the causative *ho'oha'anui*, 'to cause to brag.' Although they do not provide an ungrammatical example, the text in EP clearly indicates that having the converse attachment order would be ungrammatical, i.e. **ha'aho'onui* would be ungrammatical under any interpretation (corpus analysis corroborates this observation).

(14) a. nui 'large'
      b. ha'anui 'to brag, exaggerate'
      c. ho'oha'anui 'to cause to brag'

(15) a. nini 'to pour'
      b. hanini 'to overflow'
      c. ho'ohanini 'to cause an overflow'

Within the structural linguistics framework of EP, (14) and (15) is taken as evidence against allomorphy, because each morpheme has its own 'slot' in the preverbal domain.

4. Morphological Competition

Despite EP's evidence against allomorphy, I argue that *ho'o* and *ha'a* are allomorphs, based on a distribution pattern not discussed by EP, namely the distribution of these morphemes with other valency related morphology, such as nominalizing and passive affixes. The crucial observation is that *ho'o*, but not *ha'a*, co-occurs with nominalizing and passive morphology, suggesting that *ha'a* competes with other valency related morphology in a given cycle.

For example, *ho'o*, but not *ha'a*, freely co-occurs with stems that have the nominalizing suffix *-na*. Since nominalization reduces valency, the addition of *ho'o* plus the nominalizer on a verb derives an intransitive (16,17).

(16) a. kahu 'to pray in chant'
      b. kahuna 'priest'
      c. ho'okahuna 'to ordain a *kahuna*'

(17) a. 'ike 'to see [transitive]'
      b. 'ikena 'view, seeing, knowing'
      c. ho'ikena 'to see, know [intransitive]'

In addition, *ho'o*, but not *ha'a*, also freely co-occurs with the passive suffix, *-Cia/-a* (18, 19), which, like nominalizing *-na*, is valency reducing. Crucially, *ha'a* does not co-occur with nominalizing *-na* or passive *-Cia/-a*. In (18), for example, affixation of *ho'o* to the transitive *'ike* derives a causative, whereas the root plus *ho'o* and the passive together yields the passive of a causative. Likewise, both *ho'o* and the passive suffix attach to the nominal root *wa'a* in (19), deriving an intransitive.

(18) a. 'ike 'to see'
      b. hō'ike 'to show'
      c. hō'ikea 'to be shown'

(19) a. wa'a 'canoe, trench'
      b. ho'owa'alia 'to be dug out'

This pattern of data indicates that *ho'o* and *ha'a* may in fact be in complementary distribution, despite the evidence to the contrary which was discussed in section 3. In the next section I develop an analysis which reconciles the conflicting patterns of data, such that *ho'o* and *ha'a* are in complementary distribution once (sometimes null) functional heads are taken into account.
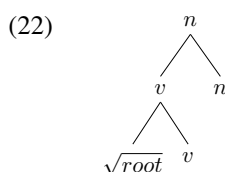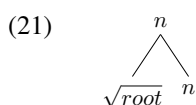
5. Morphological Analysis

5.1. Theoretical Framework

To account for the above data, I adopt the model of verbal morpho-syntax proposed in Marantz (1997), Hale & Keyser (2002), Pylkkänen (2008), and Harley (2008) (among others), in which multiple v heads are implicated in different verbal constructions. I also adopt the notion of cyclic domain for morpho-syntax as proposed in Embick & Marantz (2008) and Embick (2010).

An example from English nominalization illustrates the model of cyclic domains relevant for this paper. Embick (2010) argues that a single n is implicated in English nominalizations of the type illustrated in (20). Assuming that functional heads such as n and v are cyclic, the root-conditioned allomorph obtains when it is in the same cycle as the root (20a), whereas a different allomorph (uniformly spelled out as *-ing*) obtains when n occurs in a different cycle. Borrowing the terminology of Embick & Marantz (2008), n is in an 'inner domain' in (20a) and n is in an 'outer domain' in (20b). The relevant syntactic configurations are illustrated in (21) and (22), respectively.

(20) a. n root-conditioned allomorphs: marri-*age*, refus-*al*, confus-*ion*

      b. n elsewhere allomorph *-ing*: marry-*ing*, refus-*ing*, confus-*ing*

(21)

$$
\begin{array}{c}
n \\
\diagup \diagdown \\
\sqrt{root} \quad n
\end{array}
$$

(22)

$$
\begin{array}{c}
n \\
\diagup \diagdown \\
v \quad\quad n \\
\diagup \diagdown \\
\sqrt{root} \quad v
\end{array}
$$

Under this analysis, the data in (20) represent a two-way distinction; the different surface realizations of n for the root conditioned allomorph (20a) is an independent, morpho-phonological process. In other words, the distinction between types in (20) represents a case of morph-syntactic allomorphs, whereas the differences within (20a) represents an independent process not relevant for this paper.

5.2. Hawaiian Derivations

For the analysis of Hawaiian, I assume (at least) the v types v_{be} (inchoative), v_{agent} (transitive), v_{pass} (passive) and v_{incr}, which is the underlying morpheme realized alternatively as *hoʻo* or *haʻa*. I introduce the label v_{incr} for expository purposes, abstracting away from the interpretation of the relevant morpheme and focusing only on its distribution in this paper. Adopting the Distributed Morphology framework, I assume that morphemes enter the syntactic derivation without phonological features, and are realized as specific vocabulary items post-syntactically (i.e. 'late insertion'). Additionally (again within the Distributed Morphology framework), I assume that roots enter the derivation without syntactic category features, and must therefore be associated with functional heads (e.g. v, n) within the syntax.

Following Embick & Marantz (2008) and Embick (2010), I assume that v and n are cyclic, such that root conditioned allomorphs occur when the relevant morpheme (here, n or v_{incr}) occurs in the same cycle (or 'inner domain') as the root. In Hawaiian, *haʻa* is the root conditioned allomorph of v_{incr}, while *hoʻo* is the non-root conditioned allomorph (v_{be} and v_{agent} are spelled out as $\emptyset$). For n, $\emptyset$ is the root conditioned and *-na* is the non-root conditioned allomorph. For clarity, I repeat these specifications of the relevant morpheme types and their realizations in (23).

(23) For Hawaiian, where n & v are cyclic:

      a. v_{incr} is a general valency-increasing morpheme

      b. for v_{incr}: *haʻa* is the root conditioned allomorph, *hoʻo* elsewhere

      c. for nominalizing n: $\emptyset$ is the root conditioned allomorph, *-na* elsewhere

      d. v_{pass} is always spelled out as *-Cia/-a*

      e. v_{be} and v_{agent} are always spelled out $\emptyset$

To begin the analysis with a derivation from transitive to intransitive, as in (24) (all Hawaiian data in this section are repeated from above), the root initially merges with v_{be} in the inner domain, with v_{incr} in the outer domain, where it is spelled out as *ho'o*. This derivation is illustrated in (25).

(24) a. hele 'to go'
      b. ho'ohele 'to set in motion'

(25) a. [hele v_{be}] = hele
      b. [v_{incr} [hele v_{be}]] = ho'ohele

Focusing now on interactions between v_{incr} and other valency related morphology, I first follow Hale and Keyser (2002) in analyzing a simple transitive such as (26) as having v_{agent} in the inner domain of the root. The nominalization of this requires n in the outer domain, spelled out as *-na* (according to (23)). Valency increase via v_{incr}, in an additional outer domain, is spelled out as *ho'o* (26c). A derivation from transitive to passive to a causative passive works similarly, with v_{pass} attaching to transitive *'ike* and v_{incr} again attaching to an additional outer domain (27).

(26) a. ['ike v_{agent}] = 'ike 'to see [transitive]'
      b. [['ike v_{agent}] n]= 'ikena 'view, seeing, knowing'
      c. [v_{incr} [['ike v_{agent}] n]]= ho'ikena 'to see [intransitive]'

(27) [v_{incr} [['ike v_{agent}] v_{pass}]] = hō'ikea 'to be shown'

As for the contrast between *ho'o* and *ha'a* prefixes for what EP call the simulative, consider a possible derivation for (28) as compared to (29). While these data superficially indicate that *ho'o* and *ha'a* are not in complementary distribution, interaction with a silent n head can derive complementarity. For example, in (28, 30a), the root merges with n, and v_{incr} merges with the root-n complex; n is in the inner domain, spelled out as $\emptyset$, and v_{incr} is in the outer domain, spelled out as *ho'o*, deriving *ho'ohaole*. In other words, v_{incr} is attached to a true nominal in this case. By contrast, in (29, 30b), v_{incr} attaches directly to the root, yielding the *ha'a* form; crucially, v_{incr} is able to directly select either the root or a root-n complex in this analysis.

(28) a. haole 'white person'
      b. ho'ohaole 'to act like a white person'

(29) a. koa'e 'tropicbird'
      b. ha'akoa'e 'to act like the tropicbird'

(30) a. [v_{incr} [haole n]] = ho'ohaole
      b. [v_{incr} koa'e] = ha'akoa'e

Theory choice becomes crucial here, because within Distributed Morphology, part of speech is not lexically specified, but contextually determined by functional heads. For this reason, (30a) and (30b) can differ structurally but yield a similar interpretation. If, alternatively, the root morphemes in (30a) and (30b) were lexically specified as nouns, it would be unclear how to derive the observed surface forms under the analysis where *ho'o* and *ha'a* are allomorphs.

As with (30), a root such as *ko'o* (31) can take either allomorph, which is also taken as evidence against complementarity by EP. However, complementary distribution can again be derived by reference to n, specifically due to whether or not n is merged into the inner domain. When n occurs in the inner domain, v_{incr} occurs in the outer domain (32b), but v_{incr} can occur in the inner domain as well, in the absence of n (32c).

(31)   a.   koʻo 'brace, prop, pole'

     b.   hoʻokoʻo 'to prop with a pole'

     c.   haʻakoʻo (same as hoʻokoʻo)

(32)   a.   [koʻo n] = koʻo

     b.   [v_{incr} [koʻo n]] = hoʻokoʻo

     c.   [v_{incr} koʻo] = haʻakoʻo

Finally, consider the causative (33c), which EP also take to be evidence against an analysis in which *hoʻo* and *haʻa* are allomorphs. Recall that when multiple v_{incr} morphemes are used, the surface order must always be *hoʻohaʻa* (including any phonologically conditioned allomorph of *haʻa*), but not **haʻahoʻo*. Within EP's structuralist framework, this is taken as evidence that each (independent, for EP) morpheme has its own slot in the pre-verbal domain. Under the analysis proposed here, the structure of (33c) is (34), in which a v_{incr} morpheme occurs in both the inner and outer domain.

(33)   a.   nui 'large'

     b.   haʻanui 'to brag, exaggerate'

     c.   hoʻohaʻanui 'to cause to brag'

(34)   [v_{incr} [v_{incr} nui]] = hoʻohaʻanui

Given the logic of the current proposal, the surface distribution of *haʻa* and *hoʻo* with respect to each other is derived; *haʻa* must always be attached to the root on the surface whenever v_{incr} occurs twice.

6. Conclusion

This paper argues that *hoʻo* and *haʻa*, both understood as 'causative/simulative' prefixes in the descriptive literature, are best understood as valency increasing morphemes, such that the 'causative' and 'simulative' uses are special cases of the more general function. Corpus analysis suggests that *hoʻo* and *haʻa* are syntactically conditioned allomorphs, contrary to the standard analysis given in Elbert & Pukui (1979). In particular, *haʻa*, but not *hoʻo*, competes with other valency related morphology in the root-conditioned (inner-most) cycle; the valency related morphology relevant for this competition includes passive, nominalization, and v_{incr} itself, i.e. the underlying morpheme realized as *hoʻo* or *haʻa* depending on syntactic context. Under an analysis which takes into account the role of (often silent) functional heads, understood within the Distributed Morphology framework, complementary distribution between *hoʻo* and *haʻa* can be derived, accounting for the morphological competition described above between valency related morphology. In addition, this proposal also accounts for the patterns of data cited as evidence against complementary distribution in the prior literature. The morpho-syntactic approach adopted here therefore offers a principled explanation for the Hawaiian data and extends the empirical coverage of the Distributed Morphology theory.

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