

# A Construction Grammar Analysis of *-ara* in Karuk: its form, meaning, and function

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## 1. Introduction

The purpose of this paper is to examine the uses of the derivational morpheme *-ara* in Karuk using the theoretical framework provided in Cognitive Semantics and Construction Grammar (Langacker 1991; Lakoff 1999; Fried & Östman 2004; Dancygier & Sweetser 2014). Karuk is a language isolate spoken along the Klamath River in Northern California. It is a polysynthetic, agglutinative language comprised of a rich assortment of complex morphological features. Its schematic verb phrase structure contains a number of derivational and inflectional affix slots positioned on either side of the verb base, with derivational affixation occurring on the right of the verb base. Similarly, the schematic noun phrase structure contains a number of derivational affix slots positioned on either side of the noun base used in constructing nominal compounds, adjectives, and adverbs.

William Bright, in his 1957 *Grammar of the Karuk Language*, delineates overarching word classes in Karuk: noun-themes and verb-themes. He defines noun-themes as a class composed of two subclasses: adverbial nouns and non-adverbial nouns. Adverbial nouns are those adjectives and adverbs that may act as adverbial satellites in a syntactic structure, such as postpositional phrases and temporal clauses, while nonadverbial nouns are those nouns that never act as an adverbial base: general nouns such as *tíik* ‘finger’ and *aax* ‘blood,’ and personal nouns such as *asiktávaan* ‘woman’ and *afyiiv* ‘friend.’ Because adjectives and nouns fall under the same overarching syntactic class, they are afforded a freedom in terms of semantic construal. Verb-themes are given no further sub-class distinction.

Bright (1957) also describes *-ara* as three independent derivational suffixes that can be added to both verb and noun-bases to form applicative verb-themes and adjectival noun-themes. I will begin by focusing on constructions involving *-ara* and noun-themes, presenting first a general or prototypical Adjective-Nominal construction followed by special sub-case constructions. I will then describe constructions involving *-ara* with stative and inchoative verb-stems, introducing variations to the general Adjective-Nominal construction. Finally, I will discuss constructions involving *-ara* and verb-stems denoting a caused change of state, presenting both prototypical and special sub-case uses of the general Applicative Verb construction.

## 2. Theoretical Background

In the polysemy of *-ara* in Karuk, the semantics evoked by a nominal form makes a difference in the overall interpretation of the meaning of the word. Shown in Table 1, Adjectivizer *-ara* can attach to any noun, N2, that is non-adverbial and general, as long as the referent noun, N1, has the denotatum of N2 as an intrinsic property. It is not obligatory that N1 be present. It is also the case that *-ara* may attach to N2 when there is an intervening adjectival suffix, such as *-xarah* in the word for ‘mule’ *tivxarahara*.

Schematic representations	Karuk example	English gloss
N1 [N2- <i>ara</i> ]	uhram'athkúritara pipe-fat/grease-having	<i>greasy pipe</i>
[N2- <i>ara</i> ] N1	athkuritara'ahup'ásip fat/grease-having- wooden.cupboard	<i>greasy wooden cupboard</i>
[N2-Adj- <i>ara</i> ]	tivxarahara ear-long-having	<i>mule [lit. ‘having long ears’]</i>
[N2- <i>ara</i> -Adj]	amtaparaxáras dust-having-long-PL	<i>a type of thistle [lit. ‘long lupines’]</i>
[N2- <i>ara</i> ]	axrátara thorn-having	<i>thorny / thorny (thing)</i>

**Table 1.** Noun-*ara* constructions

The semantic relation between N2 and N1 can be described using the principles of frame semantics (Fillmore 1982). Approaches in cognitive semantics have generally defined a frame as a schematized, idealized representation of our knowledge of the world, based on recurring experiences. Each frame represents a coherent system of related concepts, such that in order to understand any one concept, it is necessary to understand the system in its entirety and the introduction of any one concept results in the entire system of concepts becoming available (Fillmore 1976, 1982). For example in Table 1, the compound construction *tivxarahara* meaning literally ‘having long ears’ evokes first the EAR frame (TÍIV), then other conceptual frames including the MAMMAL frame since it is only mammals that have ears and the HEARING frame since it is the prototypical function of ears. The entity picked out by N2, *tivxarah* ‘long ears,’ is uniquely part of the N1 referent frame, ‘mule,’ and is conventionally typical. Additionally, there is a layer of culturally determined saliency governing the assignment of *tivxarah* to ‘mule.’ If it is the case that N2 is non-typical of N1, then N1 may not be omitted. This is exemplified in the compound construction *uhram'athkúritara* seen in Table 1. Unlike mules, who prototypically have long ears, pipes are not prototypically greasy, and so the N1 referent frame is overtly expressed via the nominal form *uhraam*.

Frames are taxonomically related to one another, with varying degrees of generality and specificity. Some frames instantiate more general ones, and some of these

more general frames constitute basic, primary bodily experiences (Clausner & Croft 1999). Frames consist of sets of roles and relations that, in part, form the meaning of a given lexical item (Sullivan 2007). The morpheme *-ara* itself has an image schematic interpretation, meaning that when it attaches to a noun or verb, it acts as a frame-shifter, picking out a salient feature of a nominal referent or bringing to the foreground a backgrounded element in an event. Image schemas represent those general frames that constitute basic, primary bodily experience. More specifically, image schemas are skeletal or schematic conceptual structures arising from imagistic domains that represent the spatial (e.g., Verticality, Center/Periphery) and force-dynamic configurations (e.g., Pressure, Gravity, Force) that affect a human body. Instead of elaborating aspects of the scene, image schemas aid in the structuring of more elaborate concepts, such as frames, in ways linked to experience (Johnson 1987; Lakoff 1987; Lakoff & Johnson 1999; Clausner & Croft 1999).

Metonymy plays a big role in the way Adjectivizer *-ara* constructions are classified. Metonymy is the use of some entity to stand for another entity with which it is correlated. Sometimes the noun being modified isn't present; it is understood. For example, in (5f), the nominal referent of *amtáparas*, meaning literally 'dusty ones,' is understood by speakers of the language to be a particular type of lupine, the silver lupine *Lupinus albifrons*. It is the dusty color of the silvery leaves that stand for the plant as a whole. What is known as frame metonymy (Dancygier & Sweetser 2014) focuses on the metonymic relationship between parts of the same frame (e.g., PART-WHOLE; WHOLE-PART). For instance, referring to one's car as "my wheels" is PART FOR WHOLE metonymy, whereby WHEELS is frame metonymic for the CAR as a whole. In both of these cases, in Karuk and English, a part of the entity is being used to refer to the whole entity. This will be further discussed in section 3.

In addition to the types of Adjective-Nominal constructions we see in Table 1 where *-ara* attaches to a nominal head, below in Table 2 we see Adjectivizer *-ara* attaching to a verb-stem to form an Adjective-Nominal construction. In these instances, the verb-stems to which *-ara* attaches denote either stative or inchoative events. For

Schematic representations	Karuk example	English gloss
Noun1 [Verb- <i>ara</i> ]	uhram'ikxúrikara pipe-to.be.decorated-having	<i>a painted pipe</i>
[Verb- <i>ara</i> ]	aachíhhara to.be.happy-having	<i>happy (one)</i>
	íinkurihara to.get.burned.out-having	<i>burned out (thing)</i>

**Table 2.** Verb-*ara* constructions

example, the [Verb-*ara*] constructions shown in Table 2, *aachíhhara* 'happy,' can be used to refer to a person when he or she has been overcome with happiness. Similarly, an

entity can be described as *iinkurihara* ‘burned out’ if it has undergone that change of state process brought about by an external agent. This active static state or resultant change of state becomes an inherent property of the N1 referent frame, due to the lack of volition on the part of the N1. In other words, the state change is irreversible, and as such, it is treated semantically as an intrinsic property of the referent noun, much like ‘having long ears’ is an inherent property of mules. And, as is the case with nouns, it is the case that if the adjective formed from Verb-*ara* is non-typical of N1, then N1 may not be omitted, as illustrated in Table 2 with the presence of *uhraam* ‘pipe’ the compound construction *uhram’ikxúrikara* ‘a painted pipe.’ This will be discussed in Section 4.1.

There are two kinds of verb-stem *-ara*’s. The first involves a verb-stem that is stative or inchoative, as was discussed above. The second involves verb-stems that denote causative events. When *-ara* attaches to verb-stem denoting a caused change of state, the result is an instrumental applicative interpretation. For example, when attached to the transitive verb-stem *thimyav*, meaning ‘to rub good/polish (something),’ *-ara* adds an instrument canonically used in the polishing process: *thimyâara* ‘to polish (something) with X.’ The instrument noun licensed by *-ara* appears usually to the left of the *-ara*-marked verb-theme. It seems to be the case that there is a conceptual difference between verbs denoting causation and those denoting active static state or change of state when combined *-ara*. This could be attributed to a shift in focus from the resultant state of the entity undergoing the change of state to the causal agentive force carrying out the change of state process. Because causal event structure sometimes involves instruments, it could be a reason why *-ara* picks out the instrument. This will be discussed further in section 4.2.

Lastly, image metaphors play a big role in the understanding of *-ara*. Image metaphors involve mappings of images from one domain onto another. Image metaphors differ from conceptual metaphors in that they do not tend to have an experiential basis, and they do not necessarily involve inferential structure or broader categorial generalizations (Lakoff & Turner 1989; Croft 1993; Croft & Cruse 2004). For instance in English, given the reference to the shape a woman’s body as that of an *hourglass figure* (Lakoff & Turner 1989), two mental images arise: a woman and an hourglass. In line with the Invariance Principle (Lakoff & Turner 1989), it is specifically the middle of the hourglass that is mapped metaphorically onto the waist of the woman. In Karuk, we see image metaphors in phrases such as *tapraráh’asara* ‘mallard duck,’ meaning literally ‘watery tule,’ where the green color of the tule is mapped onto the green coloring around the neck and head of a male mallard duck, and the concept of wetness or watery, *ásara*, is mapped onto the shininess of a mallard duck’s feathers.

In this paper I will be using the Construction Grammatical formalism of Fried & Östman (2004). In Construction Grammar, constructions are understood to be learned pairings of lexical and/or grammatical form with semantic and/or pragmatic function, and are regarded as the basic units of a language (Goldberg 1995, 2006; Kay & Fillmore 1999; Langacker 1987; Croft 2001; see González & Butler 2006, Dirven & Ruiz de Mendoza 2008 for a comparison among the different approaches). Within a given grammar, constructions are related through coherent inheritance hierarchies, containing more or less general patterns (e.g., argument structure constructions, phrasal constructions, morphological constructions). Because constructions evoke image schematic meanings, they are organized in much the same way as image schemas are. Therefore, we can

outline the *-ara* family of constructions as having a more general function as a syntactic category-shifter, with several sub-constructions that are more specific, and are specialized with respect to the types of verbs and nouns they can take as input.

With these ideas in mind, I propose that there are two independent prototypical *-ara* morpheme constructions: the Adjectivizer *-ara* construction, which turns nouns and verbs into adjectives, and the Instrumental Applicative *-ara* construction, which adds to verb-stems a valence that profiles an instrument canonically used in that process. Seen in Figure 1, these constructions unify with noun constructions and verb constructions to form two higher-level prototypical constructions: the *-ara* Adjective-Nominal construction and the *-ara* Instrumental-Applicative construction. Each of these general constructions has a radial category network, exhibits an assortment of metonymies, and can be extended metaphorically.

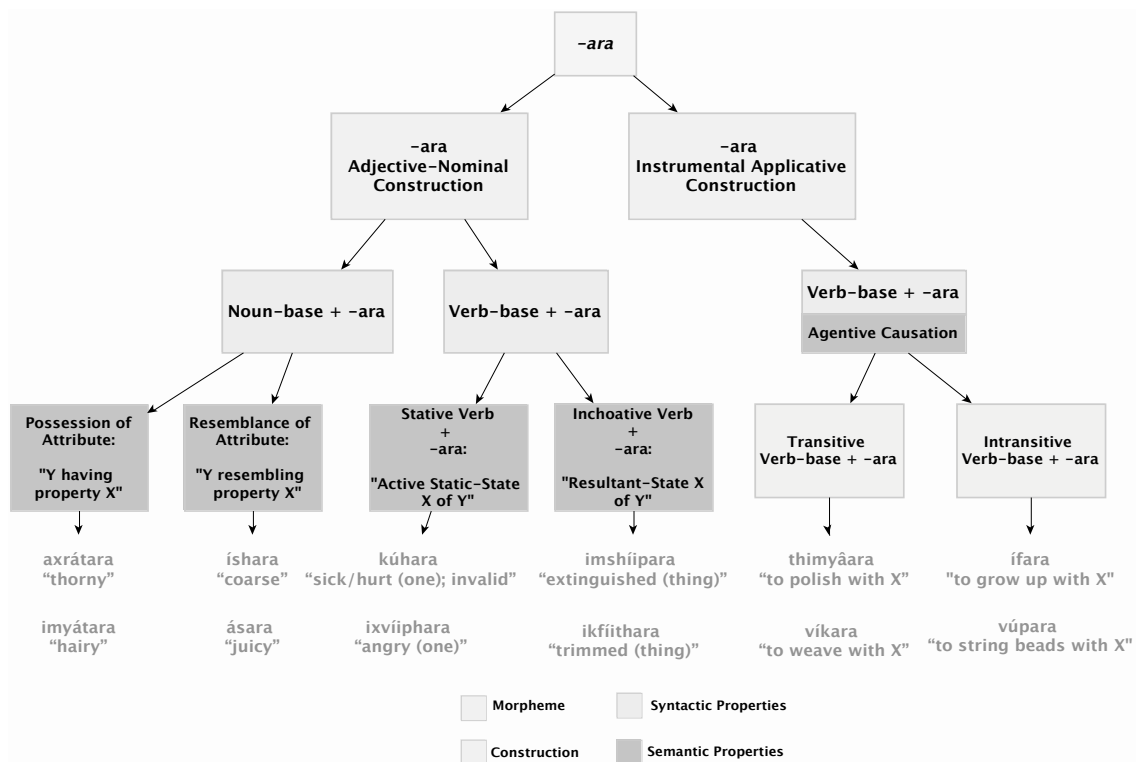


Figure 1. Polysemy structure of *-ara* morpheme

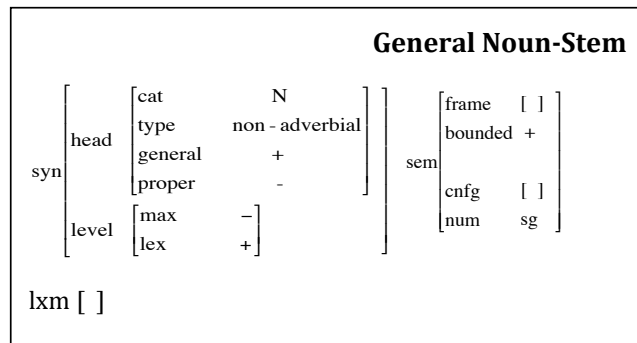
For the rest of the paper, I will focus on detailing the form and function of *-ara* in its attachment to nouns and verbs. First, I outline the formal and semantic specifications constraining the attachment of the derivational suffix *-ara* to nouns and verbs, then present the paradigmatic relationships between *-ara* and those defined sub-schemas of nouns and verbs when forming derivational, compound, and phrasal constructions, and finally provide an overview of the general types of metaphoric extensions correlated with these constructions. I conclude that a robust study of the polysemy of *-ara* must be accounted for with a hierarchical construction morphological representation, in order to

make room for the metonymic and metaphoric extensions of meaning, as well as for shared schematic representations among all meanings of *-ara*.

### 3. Nouns

#### 3.1 Adjective-Nominal Constructions

When attached to a non-derived noun-stem, Adjectivizer *-ara* forms an Adjective-Nominal construction consisting of an adjectival noun-theme with the frame metonymic meaning “Y has X in its frame,” where Y is evoked by N1, which may or may not appear overtly, and X is evoked by N2. Uses of *-ara* in these environments show that *-ara* is constrained in its attachment to only those noun-themes, shown in Figure 2, that are classified in Bright (1957) as non-adverbial and general. The set of expressions in (1) provide lexical examples of this *-ara* Adjective-Nominal construction. The General *-ara* Adjective-Nominal construction<sup>1</sup> is shown in Figure 3.

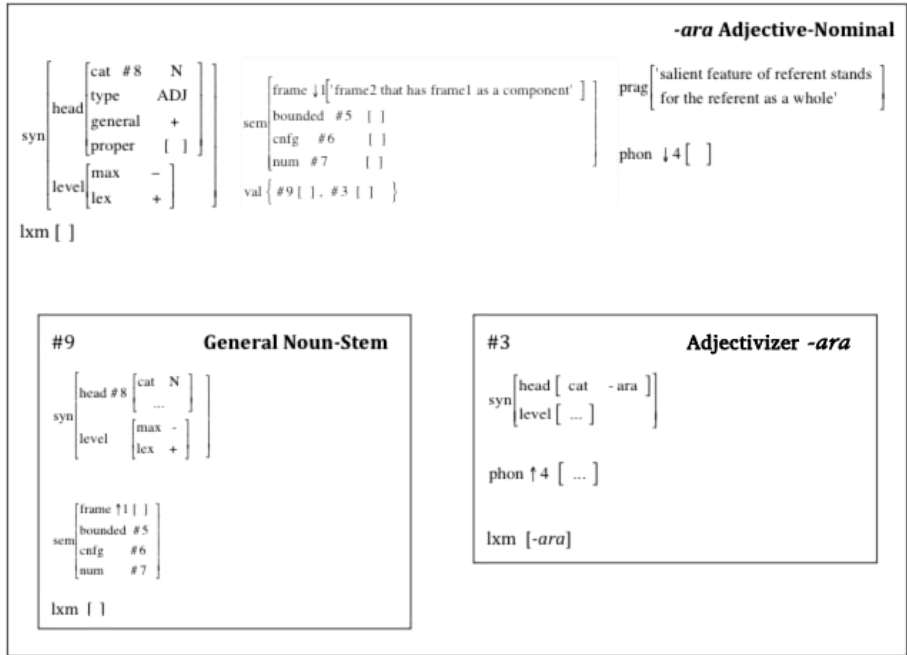


**Figure 2.** General Noun-Stem lexical construction

- |     |                                  |   |  |
|-----|----------------------------------|---|--|
| (1) | (a) <i>axraat</i> ‘thorn’        | > | <i>axrátara</i> ‘thorny’ / ‘thorny (thing)’          |
|     | (b) <i>imyaat</i> ‘hair’         | > | <i>imyátara</i> ‘hairy’ / ‘hairy (thing)’            |
|     | (c) <i>athkúrit</i> ‘fat/grease’ | > | <i>athkúritara</i> ‘fatty/greasy’ / ‘greasy (thing)’ |
|     | (d) <i>iish</i> ‘meat/flesh’     | > | <i>íshara</i> ‘coarse’ / ‘coarse (thing)’            |
|     | (e) <i>xuun</i> ‘acorn soup’     | > | <i>xúrara</i> ‘thick (liquid)’ / ‘thick (thing)’     |
|     | (f) <i>aas</i> ‘water’           | > | <i>ásara</i> ‘juicy’ / ‘juicy (thing)’               |

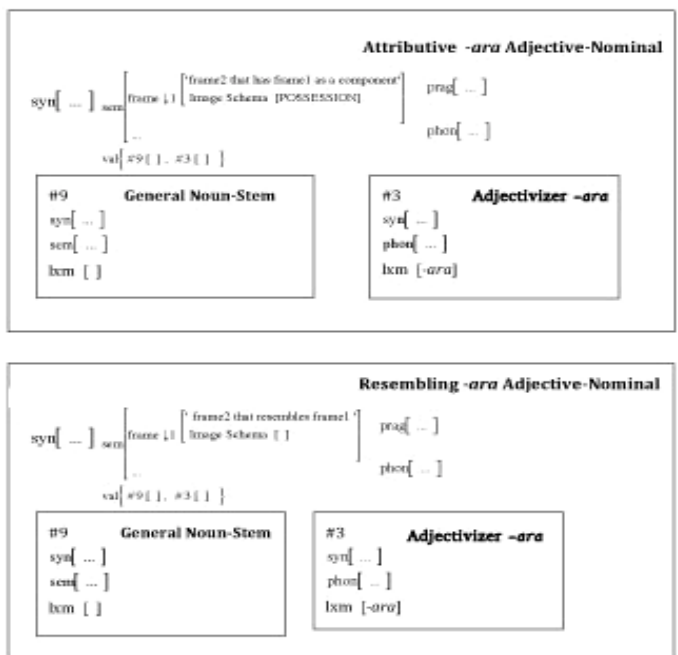
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<sup>1</sup> When unified with a non-derived noun, *-ara* phonologically conditions progressive accentuation, reduction of long vowels in the base noun-theme, and softening of the consonants /m/ and /n/ to /v/ and /r/ respectively. The examples in (1), with the exception of (1c), display morphophonologically conditioned reduction of the long vowel in the noun-stem and progressive accentuation as a result of *-ara* attachment, and in (1d) *xuun* ‘acorn soup’ captures the conditioned softening of /n/ to /r/, resulting in *xúrara* ‘thick’ (Bright 1957).



**Figure 3.** General *-ara* Adjective-Nominal Construction

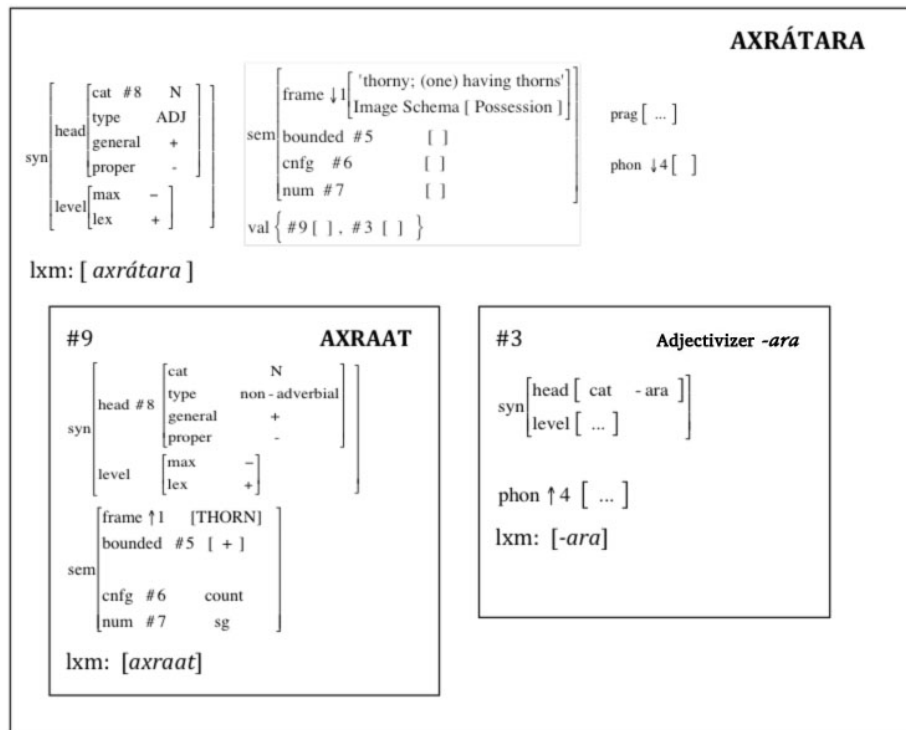
Semantically, there are two emergent sub-cases of the *-ara* Adjective-Nominal construction, shown in Figure 4. The first contributes a simple possession of attribute



**Figure 4.** *-ara* Adjective-Nominal sub-case constructions: Attributive *-ara* Adjective-Nominal construction (top), Resembling *-ara* Adjective-Nominal construction (bottom)

meaning: ‘Frame 2 (N1 referent noun) that has Frame 1 as a component,’ seen in (1a-c). The second involves *-ara* contributing the meaning ‘Frame 2 (N1 referent noun) prototypically resembling Frame 1,’ seen in (1d-f). For both senses, this relation between this newly formed attribute and the nominal referent is atemporal, in the sense that the *-ara* Adjective-Nominal construction formed by a noun-theme and *-ara* relates only the static and inherent nature of the base noun-theme to some second referent noun.

Using the Construction Grammar framework outlined in Fried & Östman (2004), Figure 5 offers an instantiation of the Attributive *-ara* Adjective-Nominal construction.



**Figure 5.** Instantiation of *-ara* Adjective-Nominal construction, possession variant: AXRÁTARA Construct

It is important to note that Figure 2 shows the General Noun-Stem having a positive lexical value, lex [+]. This is due to the fact that noun-stems can and do behave as lexical elements. However, within the General *-ara* Adjective-Nominal construction, the General Noun-Stem shows an unspecified lexical value, lex [ ]. As described in Fried & Östman (2004), this lack of specificity is meant to account for instances where the head itself could either be a simple lexical element, as seen in (1), or a phrasal



(2) (a) *tivxárahara*  
ear-long-**having**  
'mule'

(c) *ishxíkihara*  
meat-rough-**having**  
'sturgeon'

(b) *apmanxárahara*  
mouth-long-**having**  
'Double-breasted Comorant'

(d) *yupsírihara*  
eye-shiny-**having**  
'blind (one)'

constituent, seen in (2). Simply put, having an unspecified lexical value accounts for the potential presence of a modifier. Unlike those examples in (1), where *-ara* attaches directly to the base noun-stem, (2a-b) shows *-ara* directly adjacent to the bound adjectival suffix *-xárah*, meaning 'long.' Similarly in (2c), *-ara* is positioned immediately adjacent to *-xíkih*, meaning 'rough', and in (2d), to *-sírih*, meaning 'shiny.' This illustrates that within the *-ara* Adjective-Nominal construction, the noun-stem to which *-ara* may attach can itself be a noun phrase. Figure 4 shows the Attributive *-ara* Adjective-Nominal construction evoking the POSSESSION image schema.

In a more schematic dimension, the Possessor and Possession roles present in the POSSESSION schema bind with the semantic roles of the Attributive Adjective-Nominal construction: the base noun-theme binding to the Possession role, and the inferred referent available to bind to the Possessor role. It is this underlying dimension that motivates the attributive-type meaning prevalent in these constructions. The inferred referent can be realized explicitly, like those seen in examples (6) and (7), and in these cases a compound lexical construction is evoked.

The *-ara* Adjective-Nominal construction can also be utilized in the formation of Predicate Adjective constructions. For instance, in (3a), the construction *athkúritara* 'fatty' acts as the predicate of the main clause, alongside two subordinate clauses. And in (3b), *ípihar* 'bony' acts as the predicate of the clause, modifying *chámuxich* 'Sucker,' the subject of

(3) (a) *patá kuníthviish, kári xás vúra athkúritara patá kuníshfir pamúmaan*  
NOM-PERF 3PL(:3)-to.pack.home, still then INTENS **fat-having** NOM-PERF 3PL(:3)-to.skin DET-3SG.POSS-skin  
"When they brought it in, (the bear) was **fat** when they skinned its hide."

(b) *kúna chámuxich uum vúra ípihar*  
in.addition sucker 3.SG Intensive **bone-having**  
"But Sucker is **bony**."

the clause. Unlike nominal arguments in Karuk, sentences in (4) show that as predicate adjectives these forms are eligible to receive inflectional affixation, taking tense marking in (4a) and negation in (4b). Person marking in Karuk is limited to only those predicates that are verbal, and so does not appear with these constructions.

- (4) (a) kúnish **aptíkaraheesh**, táayheesh pamúsaan  
 sort.of **branch-having-FUT**, lots-FUT DET-3SG.POSS-leaf  
 “They will be **branchy**, it will have many leaves.”
- (b) pu'ásarhara, sákriiv  
 NEG-**water-resembling-NEG**, hard  
 “It’s not **juicy**, it is rough.”

Though productive as predicate adjectives, Adjective-Nominal constructions appear more frequently as either maximal noun phrases or as noun phrase constituents in compound constructions. It is in these constructions that the influence of conceptual metonymy on the grammatical construction becomes clear. In (5) the profiled referent in each instantiation is contextually understood to be a specific indefinite referent and attributor of the noun phrase, though is not realized explicitly in the utterance itself. The expressions in (5a-b), as well as (2a), represent BODY PART FOR ANIMATE BEING metonymy. The salient body part of the bull or stud horse, its ‘testicles,’ and the

(5) Adjective-Nominal Construction: Metonymy

- |  |   |   |
|--|---|---|
| <p>(a) thirixôorara<br/>         thirixôon-<b>ara</b><br/>         testicle-<b>having</b><br/>         ‘bull, stud horse’</p>                  | <p>(d) ipihara<br/>         ipih-<b>ara</b><br/>         bone-<b>having</b><br/>         ‘bony; alive’</p>              | <p>(g) tishrávara<br/>         tíshraam-<b>ara</b><br/>         Scotts.Valley-<b>having</b><br/>         ‘Scotts Valley Shasta’</p> |
| <p>(b) vêehshurara<br/>         vêehshur-<b>ara</b><br/>         horn-<b>having</b><br/>         ‘deer; buck’</p>                              | <p>(e) iptáxapara<br/>         iptáxap-<b>ara</b><br/>         braid-<b>having</b><br/>         ‘Chinese person’</p>    | <p>(h) asaxêevara<br/>         asaxêem-<b>ara</b><br/>         moss-<b>having</b><br/>         ‘mossy; Baldy Peak’</p>              |
| <p>(c) kitaxríhara<br/>         kitáxrih-<b>ara</b><br/>         wing-<b>having</b><br/>         ‘a kind of<br/>         dangerous spirit’</p> | <p>(f) amtáparas<br/>         ámtaap-<b>ara-as</b><br/>         dust-<b>having-PL</b><br/>         ‘type of lupine’</p> |   |

salient body part of a buck, its ‘horns’, comes to stand metonymically for the entire bull or stud horse and buck, respectively, and have become lexicalized. The expression in (5c) represents ATTRIBUTE FOR ATTRIBUTOR, whereby the defining attribute of the mythical spirit ‘wings’ is conventionalized to represent the dangerous spirit in its entirety. In (5d-f) the expressions exemplify instances of DEFINING PROPERTY FOR CATEGORY. In (5d) ‘having bones’ is a defining property of being alive in Karuk, and so comes to stand for a living person. In (5e), the ethnic category ‘Chinese’ is named for its cultural defining property, ‘having braids.’ And, in (5(g-h)) the expressions provide instances of DEFINING PROPERTY FOR PLACE. In (5g) Scotts Valley Shasta is a larger territory that is named for its defining property, having ‘Scotts Valley,’ and in (5h) ‘mossy’ is the defining property used to refer to Baldy Peak.

Expressions in (6) are examples of *-ara* Adjective-Nominal constructions filling noun phrase constituents slots in compound constructions. Both semantic roles present in the corresponding image schema, in this case the POSSESSION schema, are filled by non-adverbial noun-stems. In (6a) a mussel with its shell still intact is a ‘shelled mussel,’ in (6b) a pipe with ash in it is called a ‘sooty pipe.’ The constructions in (7) further illustrate the prevalence of metonymy in these constructions, showing that although both

(6) Compound Constructions:

(a) axthahaxúrarara  
axthaha-xúran-**ara**  
mussel-shell-**having**  
*‘mussel with shell on’*

(c) uhram'athkúritara  
uhraam-athkúrit-**ara**  
pipe-fat-**having**  
*‘greasy pipe’*

(b) uhram'amyêera  
uhraam-amyiv-**ara**  
pipe-soot-**having**  
*‘sooty pipe’*

(d) athkuritara'ahup'ásip  
athkúritara-**ara**-áhup-ásip  
grease-**having**-wooden.cupboard  
*‘greasy wooden cupboard’*

(7) Metaphoric and Metonymic Compound Constructions:

(a) tiv'ásurara  
tiiv-asura-**ara**  
ears-seed.basket-**resembling**  
*‘deaf’*

(d) tapraráh'asara  
tapriha-asa-**ara**  
tule-water-**resembling**  
*‘mallard duck’*

(b) yupin'úruhara  
yúpin-úruh-**ara**  
forehead-round-**having**  
*‘round forehead; woman’s name’*

(e) asvút'iithkara  
asvuut-iithka-**ara**  
ant-feather-**resembling**  
*‘winged ant’*

(c) yupthúkirara  
yuup-thúkin-**ara**  
eye-green-**having**  
*‘having green eyes; panther’*

NP constituents corresponding to the image schematic semantic roles are filled, the intended referent may still need to be inferred from its use. In (7b-c) exemplify BODY PART FOR ANIMATE BEING metonymy as well as frame metonymy, since in each instantiation it is the salient BODY PART, ‘round forehead’ and ‘green eyes,’ that come to stand for the ANIMATE BEING, either a specified indefinite woman or a panther. The expressions in (7a), (7d), and (7e) each provide, in addition to frame metonymy, instances of metaphor. In (7a), a person who is ‘deaf’ is construed as someone who ‘has ears resembling a seed basket.’ Here, ears, like seed baskets, are understood to be containers. The tight stitching of hazel sticks and other materials that prevents seeds

from leaking out of the seed basket is then mapped onto the ear, and it is this metaphor, INABILITY TO HEAR IS THE WEFT OF A BASKET, that allows one to understand the literal expression ‘ears resembling seed baskets’ as meaning ‘deaf.’ In (7d), a ‘mallard duck’ is construed as a ‘wet tule,’ a type of bulrush plant that grows in the freshwater marshes of North America, including those in northern California. In this case, an image metaphor exists whereby the green color of the tule is mapped onto the green coloring around the neck and head of a male mallard duck. The concept ‘wet’ contributes to the image metaphor the shininess of a mallard duck’s feathers due to the preen gland producing oil which makes the feathers waterproof. Finally, the green color of the mallard comes to stand for the entire bird via frame metonymy. The expression in (7e), ‘winged ant,’ also contains image metaphor. Here, the wing of an ant is construed as a feather, and all of the inferred image schematic structure, including a feather’s appearance and behavior while floating in the air, is then mapped onto the head NP of the compound, ‘ant.’ This allows the literal expression ‘ant-feather-resembling’ to be understood as ‘ant with wings resembling feathers’ and finally ‘winged ant.’

## 4. Verbs

### 4.1 Resultant-State Adjective-Nominals

When attached to a verb-stem, *-ara* can act as a nominalizer, whereby the unification of a base verb-stem with *-ara* results in the formation of a General *-ara* Adjective-Nominal construction. Shown in Figure 6, this General *-ara* Adjective-Nominal construction is prototypically formed via an inchoative verb and *-ara*, and incorporates a transitive relationship between an agent that performed the action denoted by the verb and an undergoer that has undergone the process or action. The set of expressions in (8) provide examples of this General *-ara* Adjective-Nominal construction.<sup>2</sup>

- |   |   |  |
|---|---|--|
| (8)(a) <i>yikihi</i> ‘to get (seriously) sick’  | > | <i>yikihara</i> ‘sick (one)’                   |
| <i>kúha</i> ‘to get sick, hurt’                 | > | <i>kúhara</i> ‘sick/hurt (one); invalid’       |
| <i>xúriha</i> ‘to get hungry’                   | > | <i>xúrihara</i> ‘hungry (one)’                 |
| <i>aachíhhi</i> ‘to become happy’               | > | <i>aachíhhara</i> ‘happy (one)’                |
| <i>ikvíit-hi</i> ‘to fall asleep’               | > | <i>ikvíit-hara</i> ‘asleep (one)’              |
| <i>ishpat</i> ‘to break; become broken’         | > | <i>ishpáatara</i> ‘without money; broke (one)’ |
|   |   |  |
| (b) <i>imship</i> ‘to become extinguished’      | > | <i>imshiipara</i> ‘extinguished (thing)’       |
| <i>ishtak</i> ‘to become chipped out’           | > | <i>ishtáakara</i> ‘chipped out (thing)’        |
| <i>iinkurih</i> ‘to get burned out’             | > | <i>iinkurihara</i> ‘burned out (thing)’        |
| <i>ikfith</i> ‘to strip (branches from a tree)’ | > | <i>ikfiithara</i> ‘trimmed (thing)’            |

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<sup>2</sup> When unified with a verb-stem, *-ara* phonologically conditions progressive accentuation an potential lengthening of short vowels in the base verb-theme. The lexical constructs *ishpáatara* ‘without money; broke (one)’ and *ikfiithara* ‘trimmed (thing)’ exemplify the morphophonologically conditioned lengthening of the short vowels in the base verb-theme (Bright 1957).

The Resultant-State *-ara* Adjective-Nominal construction profiles the resultant or end-state of the undergoer of the process. For this construction, the inchoative verbs to which *-ara* may attach prototypically denote in the undergoer either a lasting, more permanent state, signifying that the agent seriously “affects” the entity, or for animate entities a temporary lack of control. In this way, the Resultant-State Adjective-Nominal constructions can be said to be eventive (Levin & Rappaport-Hovav 1995; Goldberg 1991).

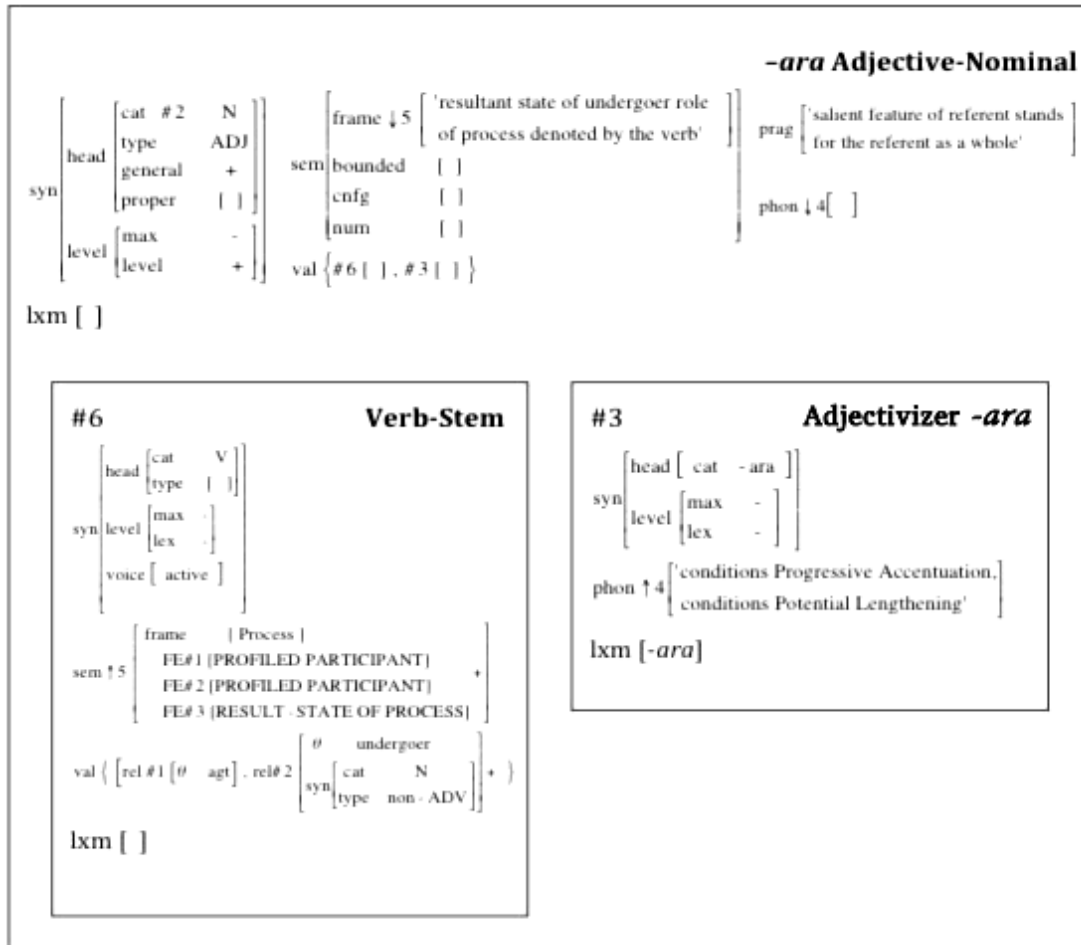
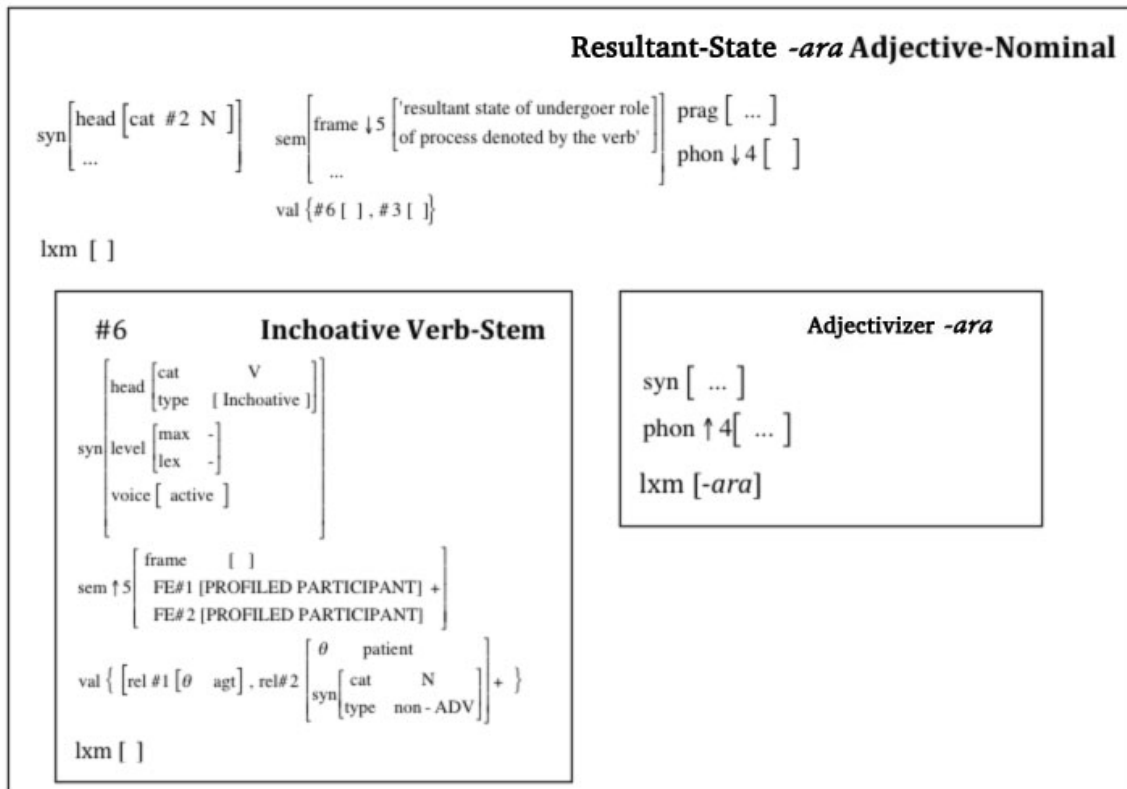


Figure 6. General *-ara* Adjective-Nominal construction with verb-stem

Figures 7 and 8 illustrate these two sub-case constructions: the Resultant-State *-ara* Adjective-Nominal construction and the Stative *-ara* Adjective-Nominal construction. The Resultant-State *-ara* Adjective-Nominal construction conveys a more permanent and defining aspect of the inanimate entity. For instance in (8b), the lexical constructs *ishtáakara* ‘chipped out (thing),’ *linkurihara* ‘burned out (thing),’ and *ikfiithara* ‘trimmed (thing)’ describe resultant states of inferred referents that have undergone permanent changes of state. The Stative *-ara* Adjective-Nominal construction conveys a transient experiential state actively present in an animate entity. For instance in (8a) *xúrihara* ‘hungry (one),’ *aachíchhara* ‘happy (one)’ and *ishpáatarata* ‘without

money; broke (one)' all describe inferred referents who are experiencing a lack of control concerning their active present state at the time of the utterance.

These *-ara* Adjective-Nominal constructions may also license various types of metonymy. Instantiations of the Result-State *-ara* Adjective-Nominal construction involve either RESULTANT EXPERIENTIAL STATE FOR ANIMATE BEING metonymy or EXPERIENTIAL STATE FOR ANIMATE BEING metonymy. In (8a), *yikihara* 'sick (one)' and *ikviit-hara* 'asleep (one)' exemplify RESULTANT EXPERIENTIAL STATE metonymy, since the base verb-stems of each construct are inchoative verbs meaning 'to get' or 'to become,' while *xúrihara* 'hungry (one)' and *aachíhhara* 'happy (one)' exemplify EXPERIENTIAL STATE metonymy, since the base verb-stems are themselves stative, meaning 'to be.' All of the expressions in (8b) are examples of RESULTANT EXPERIENTIAL STATE metonymy, since each of the base verb-stems is an inchoative verb.

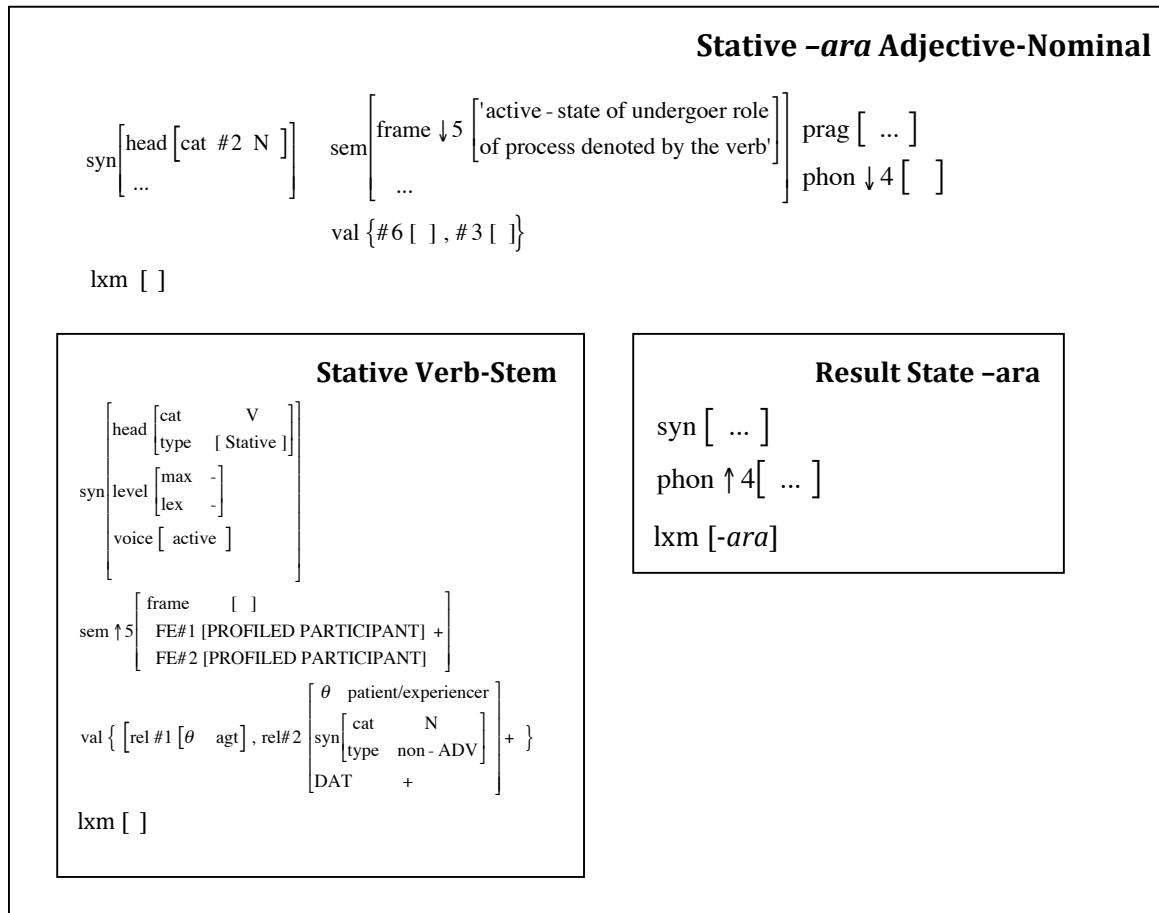


**Figure 7.** *-ara* Adjective-Nominal sub-case construction: Resultant-State *-ara* Adjective-Nominal construction

These *-ara* Adjective-Nominal constructions can be instantiated at the sentential level in the form of a core argument of the primary verbal predicate, taking either determiner prefix marking or plural suffix marking, or in the form of a predicate adjective, either as a primary nonverbal predicate or as a depictive secondary predicate of the primary verbal predicate. The sentences in both (9) and (10) illustrate the base verb-stem to which *-ara* may attach acting as the main verbal predicate, in (9a) and (10a), and the base verb-stem unified with *-ara* in the Adjective-Nominal construction, in (9b) and (10b).

(9) (a) naa vúra nayíkihiti  
 1SG.PRON INTENS 3SG(:1SG)-**be.sick**-DUR  
 "I am sick."

(b) ithasúpaa vooparampúkikti payíkihar  
 all.day that.way-3SG(:3)-cook.with.hot.stones-REDUP-DUR DET-**be.sick**-having(-ed)  
 "All day long he steams **the sick person**."



**Figure 8.** -ara Adjective-Nominal sub-case construction: Stative -ara Adjective Nominal construction

In (9a) and (10a), the referent participants of *yikihi* and *kíha* are understood to be animate, given the semantic constraints contributed by each verb, and, that animate being is understood to be the undergoer, either the patient or experiencer, of the active state denoted by the verb. This is shown via inverse person marking on the verb, denoted by the prefix *na-*. In fact, it appears that it is in only those instances where a stative or inchoative verb-base can take inverse person marking that *-ara* can unify to form the Resultant-State *-ara* Adjective-Nominal construction. In (9b) and (10b) the Stative *-ara* Adjective-Nominal construction is unified with the determiner *pa-*, forming the

(10) (a) kári xás uxus, " tá **nakúha**, xâatik vúra nipváruprav."  
 then then 3SG(:3)-think PERF 3SG(:1SG)-**be.sick/hurt**, it's.better INTENS 1SG(:3)-ITER-come.out  
 "And she said, "I'm sick, let me go out!"

(b) yánava **pakúhar** utháaniv  
 behold DET-be.sick/hurt-**having(-ed)** 3SG(:3)-to.lie  
 "Behold **the sick one** was lying there."

specified definite forms *payikihar* and *pakúhar*. For each of these constructs, the referent lacks agentivity. In (9b), *payikihar* is the passive participant OBJ of transitive verb *parámpuk* "to cook with hot stones," and in (10b) *pakúhar* is the subject of the unaccusative verb *thaaniv* "to lie, be dead" but lacks agentivity and control over their current state (Levin & Rappaport-Hovav 1995).

The occurrences of inanimate *-ara* Adjective-Nominal constructions at the sentential level are, as of now, less frequent in occurrence than those whose referent is animate. The sentence in (11) provides an example of one such instance. In this case, the Resultant-State Adjective-Nominal construction *ikfiithar*, shown in Figure 9, is acting as a noun phrase constituent in a possessive construction. What is interesting about this construction is that *ikfiithar* is anthropomorphized and so assumes both an animate role previous to reference time and inanimate role at reference time. Nevertheless, the contextual referents are understood to have no control over their current "standing" position as described by the verb.

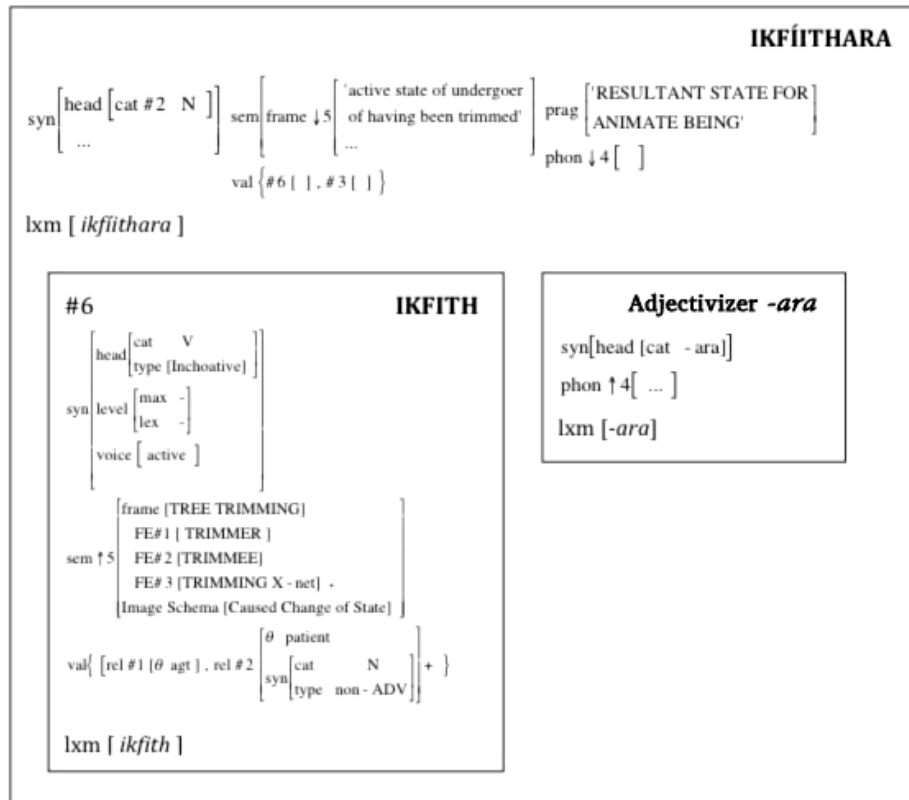
As mentioned above, the Result-State *-ara* Adjective-Nominal can act as a predicate adjective at the sentential level, as either a primary nonverbal predicate, seen in (12), or as a depictive secondary predicate of the primary verbal predicate, seen in (13). In (12), the Stative *-ara* Adjective-Nominal construct, *ixviiphara*, combines with the

(11) vaa káan uvêehriv, mukun'**ikfiithar** pámita mukunkeechíkyav  
 that there 3SG(:3)-be.standing, 3PL.POSS-**to.strip-having(-ed)** DET-PAST 3PL.POSS-sweetheart  
 "There they stood, the '**trimmed trees**' of their former sweethearts."

(12) **ixviipharas** vúra, páy yíthuk kun'úumanik  
 be.angry-DEVERB-**having(-ed)**-PL INTENS this elsewhere 3PL(:3)-go.to-ANC  
 "They were angry, and they were transformed."

plural marker *-asa* to form *ixviipharas* "angry ones." In this way, the plural suffix acts as a definite marker, distinguishing the subset of individuals who were "angry" from the larger indefinite set. In (13), the constructs *aachíchhar* "happy (one)" and *ikvíit-har*





**Figure 9.** Instantiation of Result-State Adjective Nominal sub-case construction: IKFÍTHARA construct

“asleep (one)” act as depictive secondary predicates, modifying in each case the subject of the main clause verb. In each case, the predicate adjective expresses an eventuality or state pertaining to one participant in the main clause, assigning a property to one participant of the main predicate. This is reflected in its Figure/Ground configuration. So, for (13(a)), the subject of the primary verbal predicate is actively experiencing running around while in the backgrounded active state of “being happy.” And, in (13b), the subject of the primary verbal predicate is actively experiencing laughter while in the backgrounded active state of “being asleep.”

(13) (a) ta'ítam kunpáxtiivpuna, **aachíhhar** vúra kunpihmarápiithva  
 so 3PL(:3)-ITER-play.game(athletic)-PL be.happy-**having(-ed)** INTENS 3PL(:3)-ITER-run.around(pl.)  
 “So they played again, they ran around again **happily**.”

(b) hâari úksahti **ikvít-har**  
 sometimes 3SG(:3)-to.laugh-DUR to.sleep-**having(-ed)**  
 “Sometimes he laughs **in his sleep**.”

Expressions in (14) and (15) are examples of Result-State *-ara* Adjective-Nominal constructions filling noun phrase constituents slots in compound constructions. In (14) the head constituent of the compound construction, positioned at the left edge of the

compound, is modified by the Result-State *-ara* Adjective-Nominal construction, positioned to at the right edge of the compound. So, in (14a) *uhraam* is modified by the adjective nominal construct *ikxúrikara* meaning “decorated,” resulting in the compound

(14) Compound Constructions: Inanimate Referent

- |   |  |
|---|--|
| <p>(a) <i>uhram'ikxúrikara</i><br/>         pipe-to.mark/decorate-<b>having(-ed)</b><br/> <i>'a painted pipe'</i></p>   | <p>(c) <i>uhram'ímtaakara</i><br/>         pipe-to.be.a.gap.burned-<b>having(-ed)</b><br/> <i>'a pipe with a gap burned in the edge of the bowl'</i></p> |
| <p>(b) <i>ikooréeshtaakara</i><br/>         stone.pipe.bowl-to.chip-<b>having(-ed)</b><br/> <i>'a stone pipe bowl, a piece of which has been chipped out'</i></p> |  |

construct *ikooréeshtaakara* ‘decorated pipe’ or ‘painted pipe.’ In (14b), *ikoorá* is modified by the adjective nominal construct *ikshtaakara*, forming the compound construction meaning “chipped out stone pipebowl.” And in (14c), *uhraam* is modified by the adjective nominal construct *ímtaakara*, forming the compound construct *uhram'ímtaakara* meaning “gapped-out pipe.” In each of these constructs, it is understood that some agentive force, backgrounded in the semantics of the verb frame, has acted upon the undergoer, in these cases *uhraam* and *ikoorá*, resulting in the attributive end-state of the participant, as denoted by the End-State *-ara* Adjective-Nominal constructs.

In (15), the referent participant is understood to be animate, as constrained by either the base verb-stem of the base Verb-Stem construct or the external General Noun-Theme construct. Like (14), the head constituent of the compound construction, positioned at the left edge of the compound, is modified by the Result-State *-ara* Adjective-Nominal construction, positioned to at the right edge of the compound. In (15a), the noun *ishkiit* ‘luck’ is modified by the Adjective-Nominal construct *mahara*, meaning ‘seen/found (thing),’ and together it forms the construct *ishkítmahara* meaning ‘lucky.’ Because ‘lucky’ is an attribute specific to a human, the intended referent is understood to be animate. In (15b), *apmaan* ‘mouth’ is modified by *ishtaakara* ‘gapped (thing),’ forming the construct *apmaníshtaakara* meaning ‘harelipped.’ Because

(15) Compound Constructions: Animate Referent

- |   |  |
|---|--|
| <p>(a) <i>ishkítmahara</i><br/>         ishkiit-mah-<b>ara</b><br/>         luck-to.see/find-<b>having(-ed)</b><br/> <i>'lucky'</i></p> | <p>(c) <i>ahéemshiipara</i><br/>         fire-be.extinguished-<b>having(-ed)</b><br/> <i>'widower' [lit.'one whose fire has been extinguished'.]</i></p> |
| <p>(b) <i>apmaníshtaakara</i><br/>         mouth-to.make.a.gap-<b>having(-ed)</b><br/> <i>'harelipped' [lit. 'mouth-gapped']</i></p>    |  |

animate entities are those that have mouths, it is speculated that this construct is constrained semantically to refer only those referents that are animate. And, in (15c), *áah* ‘fire’ is modified by the construct *ímshii para* ‘extinguished (thing),’ forming the construct *ahéemshii para* meaning ‘thing whose fire has been extinguished’ or ‘widower.’ (15c) offers an example of metaphor and metonymy, whereby the union of two persons spirits or souls is frame metonymic for a marriage, and is itself construed as a fire, MARRIAGE IS A FIRE, and BECOMING A WIDOW IS EXTINGUISHING A FIRE. For these compounds in (14) and (15), it is evident that the referent participant of the Result-State *-ara* Adjective-Nominal construction is intended to be undergoer of the action denoted by the verb-base. Therefore, the frame element of the verb is co-indexed with the external general noun-theme in the compound.

#### 4.2 Instrumental Applicative Verb-Themes

When attached to a verb-stem, *-ara*, shown in Figure 10, can also act as a simple instrumental applicative marker, having a meaning often translated as “with.” It can be described as a “true” applicative in the sense that it increases the valence of the verb-stem by one, either transitivity an intransitive verb or adding a third core argument to a transitive verb. Though *-ara* can combine with intransitive and transitive verbs, as an instrumental applicative suffix *-ara* seems to appear most often in transitive verb-stems. It introduces as its core argument, in Figure 11, a peripheral but salient participant specific to the event denoted by the verb with the semantic specification of instrument, material, and/or means. The set of expressions in (16) provide examples of this Applicative *-ara* Verb-Theme construction.<sup>3</sup> Figure 12 gives a constructional analysis of the general Applicative *-ara* Verb-Theme construction.

(16)

(a) **Instrument:**

<i>ikchura</i> ‘to grind (something)’	>	<i>ikchú r a r a</i> ‘to grind <b>with X</b> ’
<i>ikrav</i> ‘to grind/pound (something)’	>	<i>ikrá v a r a</i> ‘to pound <b>with X</b> ’
<i>thimyav</i> ‘to rub good/polish (something)’	>	<i>thimyâ a r a</i> ‘to polish <b>with X</b> ’

(b) **Instrument as Material:**

<i>vik</i> ‘to weave (something)’	>	<i>vík a r a</i> ‘to weave <b>with X</b> ’
<i>inhîishrih</i> ‘to tie (something) down’	>	<i>inhîishrih a r a</i> ‘to tie down <b>with X</b> ’
<i>vup</i> ‘to string beads’	>	<i>vú p a r a</i> ‘to string beads <b>with X</b> ’

(c) **Instrument as Means:**

<i>ikava</i> ‘to buy (something)’	>	<i>iká v a r a</i> ‘to buy <b>with X</b> ’
<i>if</i> ‘to grow up’	>	<i>í f a r a</i> ‘to grow up <b>with X</b> ’
<i>ixtívhi</i> ‘to play (athletic games)’	>	<i>ixtívhi a r a</i> ‘to play (athletic games) <b>with X</b> ’

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<sup>3</sup> Phonologically, *-ara* conditions progressive accentuation (Bright 1957).

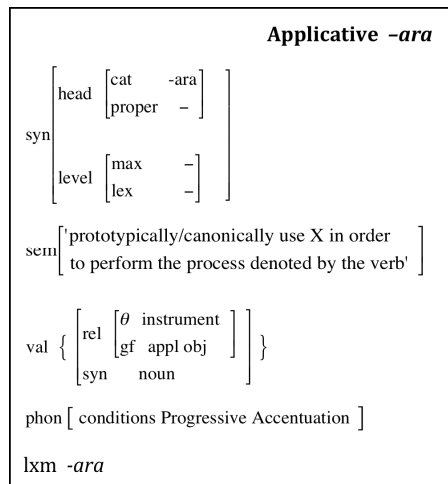
For each instantiation of the construction at the sentential level, the subject consists of an animate, volitional entity who makes use of the instrument or material denoted by *-ara* in order to perform the action denoted by the verb. Each transitive-instrumental event results in a change-of-state of the undergoer of the action. For example, in (17a),

(17) **Instrument:**

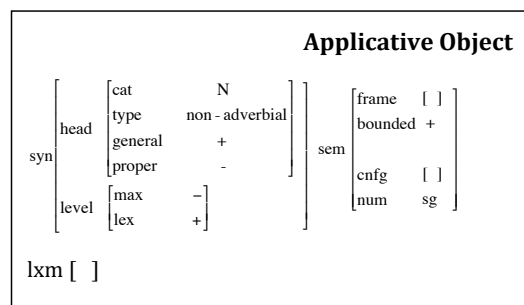
(a) *vaa kumá'ii paxuuskúnish, chimchîikar kunthimyâaratih*  
 "That is why it is so smooth, because they polish it **with scouring rush.**"

(b) *iknavaná'anamahach tá kunikchúraratih*  
 "They pound it (tobacco) up **with a little pestle.**"

the agentive subjects use the instrument licensed by *-ara*, *chimchîikar* meaning 'scouring rush,' to change the exterior surface of the object denoted by the verb. And in (17b), the instrument profiled by *-ara*, *iknavaná'anamahach* 'little pestle,' is used by the agentive subject to change the shape of the object denoted by the verb, 'tobacco,' by grinding it.



**Figure 10.** Applicative *-ara* morpheme construction



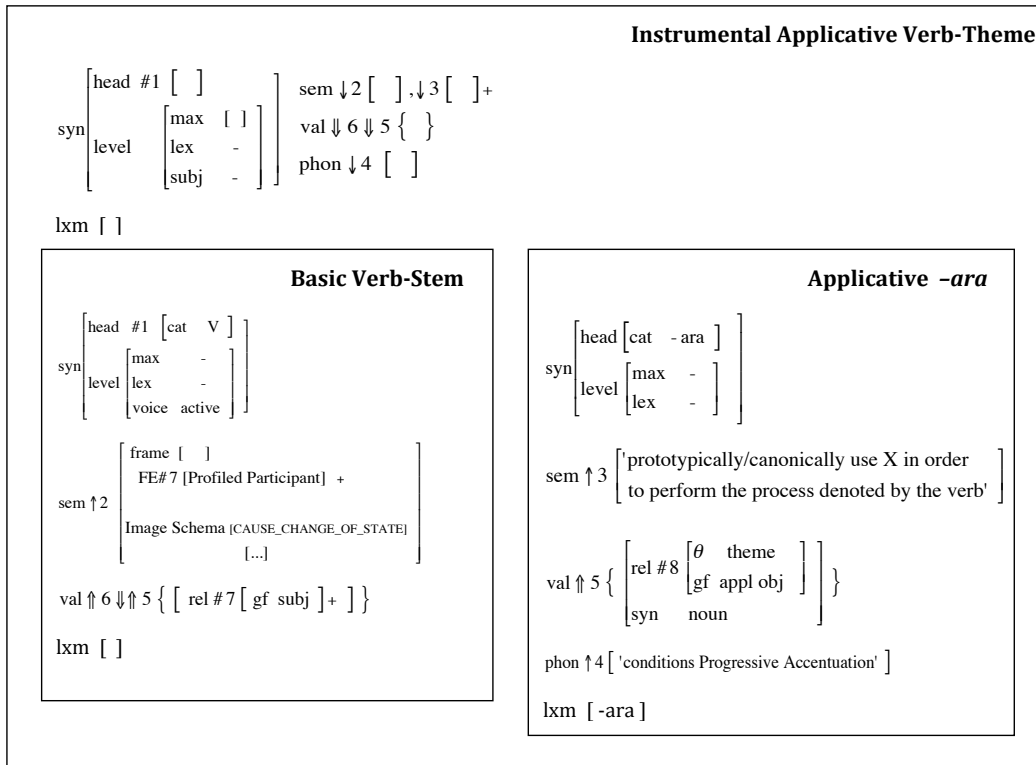
**Figure 11.** General Applicative Object construction

Sentences in (18) exemplify the same subject-control relation between the agentive subject of the verb-theme and the instrument, in this case the instrument understood as a material, profiled by *-ara*. For this sub-case of instrument, the material acts as the instrument that facilitates the process denoted by the verb and is part of the final product. In (18a), the Applicative *-ara* Verb-Theme construct *víkara*, meaning ‘to weave with’, shown in Figure 13, takes as its applicative object *sárip* ‘hazel sticks,’ to

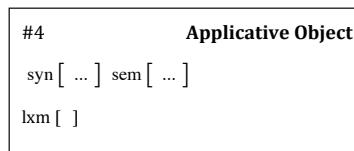
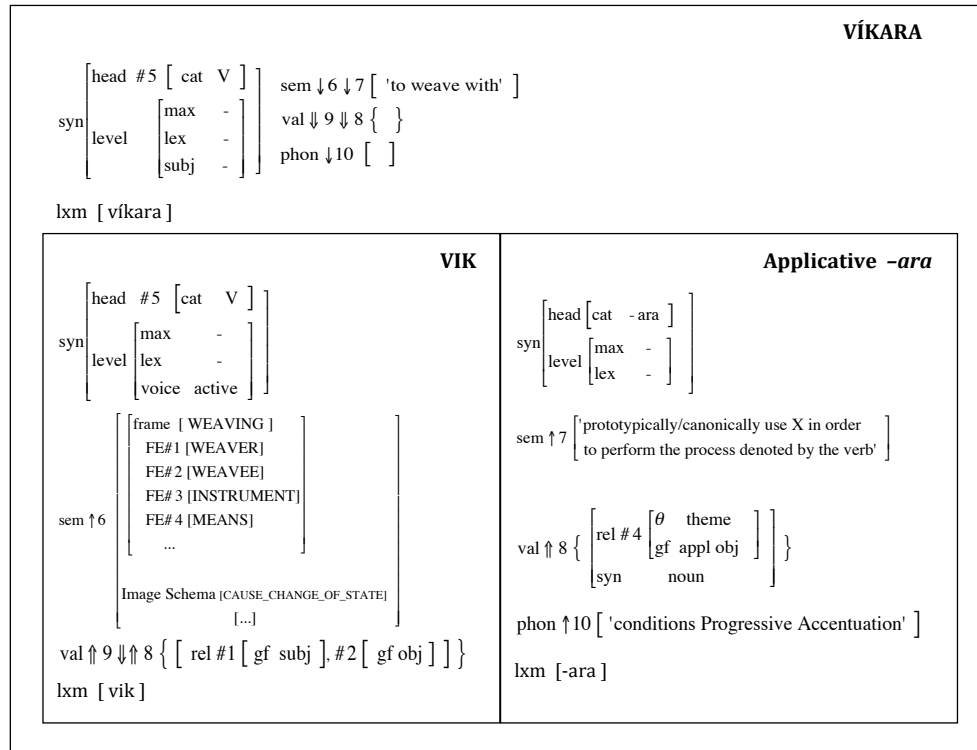
(18) **Instrument as Material:**

(a) **payváheem sárip** vúra káakum kunv́ikarati  
 “Nowadays people weave it **with hazel sticks.**”

(b) **aan** unh́iishriharahiti  
 string 3SG(:3)-tie.down-**with**-ESS-DUR  
 "It **has a string** tied on it."



**Figure 12.** General Applicative *-ara* Verb-Theme construction



**Figure 13.** Instantiation of Applicative *-ara* Verb-Theme construction: VÍKARA construct

describe the weaving of a basket, the undergoer of the verb process. And, in (18b), *aan* ‘string’ is the applicative object of the Applicative *-ara* Verb-Theme construct *inhīshrihara*, meaning ‘to tie down with.’ The undergoer of the action is promoted to subject position by the ESSIVE suffix *-ahi*, yet the action is still understood to have had an agentive causative force that resulted in the string being tied to the object. For both applicative objects licensed by *-ara* in (18), the object has not only facilitated the change of state of the object denoted by the verb, but has itself become part of the final state of that object.

(19) **Instrument as Means:**

(a) pu'ikyáakaamhara pa'araráhih, pámit vúra voo'ífaratihah **pararáhih**  
 “The Indian language isn't hard if you're raised **with the Indian language.**”

(b) kári xás kúuk upáathma yítha, tá kuníxtiivhar vaa **pasah'áhup**  
 “And one threw it to (another), they played **with that driftwood.**”

For intransitive-instrumental events such as *ifara* ‘to grow up with’ and *ixtiivhar* ‘to play (athletic games) with,’ shown in (19), the result of the event seems to be the enablement of the event, whereby having physical access to an instrument results in the event’s occurrence. However, an alternative assessment would be to consider these two cases instances of self-agentive cause, whereby the animate being’s bodily action is itself the final and relevant state (Talmy 2000). This would mean that in (19a), having access to the ‘Indian language’ allows one to learn it more easily, so being ‘raised with the Indian language’ is the relevant change-of-state by which one is able to speak the Indian language. And in (19b), having the ‘driftwood’ is necessary to the achieve in the agents’ the resultant state of ‘playing the athletic game.’

Because *-ara* seems to be constrained in its usage to only those base verbs-stems that denote causal processes or events in which the instrument is subject-controlled, this means that *-ara* will only profile entities for which force is directed. As a result, these applicative instrument entities will never fit the prototypical archetype agent. Because agentive control of an instrument is subsumed in the broader verb classes to which *-ara* may attach, it can be predicted then that *-ara* will never be used to license an agent of the action, and so will never refer to the onset or source of an event process. Instead, focus is expected to shift to the endpoint, targeting the goal: either a change of state or resultant state of the argument internal to the verb, and any argument licensed by *-ara* should be central to the process. This means that potential future uses of the Instrumental-Applicative *-ara* Verb-Theme construction should in theory be constrained to only those base verb-stems that are goal-oriented, denoting caused change of state.

## 5. Discussion

The morpheme *-ara* can attach to non-adverbial noun-stems to form new noun-themes. When combined with a noun-base, *-ara* forms an *-ara* Adjective-Nominal construction that provides an atemporal relation between itself and a referent that either prototypically possesses that characteristic or resembles the canonical characteristic of the noun-base.

The morpheme *-ara* can also attach to verb-stems, denoting states, activities, and accomplishments. For each process, the attachment of *-ara* to the verb-stem evokes a construction that profiles an atemporal state related to the verb, and links that state to some referential entity exhibiting that state. When *-ara* unifies with a stative verb, the *-ara* Adjective-Nominal construction profiles the active static state denoted by the verb in its entirety, and links that state to some referential entity that is actively in that state characteristic of the verb-base. When *-ara* unifies with an inchoative verb, the atemporal relation profiles the resultant-state of the causal event denoted by the verb, and links that state to some referential entity that is in that state characteristic of the verb-base.

There also exists a set of agentive verb-stems, transitive and intransitive, to which *-ara* can attach that form an Applicative Verb-Theme construction. Unlike any of the previous environments, instead of deriving a noun-theme, the morpheme *-ara* adds a valence to the verb-theme with the semantic role, instrument.

Putting aside the applicative use of *-ara* for a moment, it becomes evident that all of these 'senses' have a shared meaning. The morpheme used with the noun-base derives

the same meaning as the stative and inchoative forms. Similarly, the morpheme used with the stative and inchoative verb-bases could just as easily derive these same meanings. The morpheme *-ara* can turn verbs into nominal adjectives, and nouns into nominal adjectives. Because all adjectives and nouns are noun-themes, an adjective can just as easily and comprehensibly be used to refer to an entity, animate or inanimate. Therefore, it appears that the functional purpose of *-ara* in the language is that of a syntactic category-shifter, or frame-shifter. Arguably, the applicative *-ara* also has this property: by changing the valence of the verb, it adds focus to an otherwise backgrounded element of the frame. It does this via frame metonymy in the semantics. And, it is these frame-metonymic shifts that build the polysemy patterns across categories.

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