

Two types of Japanese nominalizations in the Single Engine hypothesis

Abstract

Recent DISTRIBUTED MORPHOLOGY (DM), the SINGLE ENGINE HYPOTHESIS (Marantz, 2001 and 2002 and Arad, 2003), claims that the formation of lexical category is a syntactic operation. Nouns, verbs and adjectives do not exist as such, but are formed by merger of a root with the functional heads *n*, *v*, and *a*. These are ROOT-BASED DERIVATIONS and differ in several important ways from the formation of words from preexisting categories (Arad, 2003), e.g., deverbal and denominal derivations. This article argues that Japanese contains examples of both types, root-based derivations and category change from preexisting words. The Japanese data, therefore, provides an opportunity to clarify the differences between root-based and lexical category-derived word formation.

Keywords: Distributed Morphology, Phase, The Single Engine Hypothesis, roots, derivational morphology

1. Introduction: Roots and Phases

In this paper I propose analyses for two common Japanese nominalizations within DISTRIBUTED MORPHOLOGY (DM)'s recent SINGLE ENGINE HYPOTHESIS (Marantz, 2001 and 2002 and Arad, 2003). The analysis I propose for Japanese ROOT-BASED NOMINALIZATIONS is crucially based on the claim that lexical formation creates a PHASE in the sense of Chomsky (2001). Phases are points in the derivation of a linguistic

computation where information is semantically and phonologically interpreted. One phase occurs at the formation of lexical category created by simply merging roots with the functional category-defining heads *v*, *n* and *a* (Marantz, 2001 and Arad, 2003):

The first category head merging with the root defines a PHASE (Chomsky, 1999), that is, a stage in the derivation where the element built by the computational system is spelled out both semantically and phonologically (Arad, 2003: 747-8)... Once the root has merged with a head, its interpretation has been decided and is carried upward in the derivation. (ibid: 775).

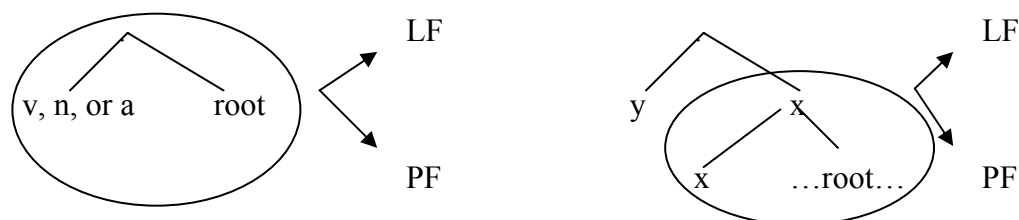
A simple example that demonstrates the plausibility that phases exist at the point of lexical category-formation is the root $\sqrt{\text{digest}}$ in English. When this root merges with the functional head *n* the phonology and semantics is notably different from the semantics and phonology of its merger with the head *v*. Phonologically the noun stresses the first syllable, i.e., *dígest* and it semantically refers to a type of written manuscript; the verb, by contrast, accents the second syllable, i.e., *digést* and semantically refers to a bodily function. This is exactly what one would expect from phase formation at the category-defining level of spell-out. (See Arad, 2003 and Marantz, 2001 and 2002 for detailed arguments)

2. Root-derived derivation vs. lexical-derived derivations

Marantz (2001: 6-7) writes that:

One place to build words is in the domain of a root, attaching a morpheme to the root before attaching a functional head that determines the syntactic category of the word (N, V, Adj). A second place to build words is outside the domain of

functional head that determines syntactic category – the little v’s, n’s, and a’s... Structurally, when a head attaches outside of little x, it sees the features of x locally, not the features, properties, or identity of the root merged with x. So its selectional properties are satisfied by the features of x ...When a head attaches to a root, its selectional requirements must be satisfied by the idiosyncratic properties of the root...



The elimination of the generative lexicon and claim that all generative operations are syntactic is known as the SINGLE ENGINE HYPOTHESIS (Marantz, 2001, Arad, 2003). This is a claim that DERIVATIONAL MORPHOLOGY, like INFLECTIONAL MORPHOLOGY, is syntactic.

3. Special properties of Japanese root-based nominalizations

One common type of nominalization is zero-related to the verb, or more specifically, to the verbal stem, called *renyōkei* in Japanese. An example is the nominalization *oyogi* ‘swimming’, etymologically-related to the verb *oyog-u* ‘swim-NON-PAST’.

Martin (1975: 883) calls this type of nominalization INFINITIVE-DERIVED NOUNS and they are typically considered deverbal (Kageyama, 1999 and Nishio, 1977, among many). In a footnote, Martin (1975: 883) notes:

In a few instances the derivation may have gone the other way historically [i.e., $N > V$, *author*]; ...from the viewpoint of synchronic description, it would appear

not to matter, in fact, to be undecidable.

Based on the semantic relation of many such nominalizations with the verbs they are putatively derived from, I claim these are examples of root-based derivations; there is no derivational relation between the two in either direction, but both noun and verb are formed by merger with a category-defining functional head, *n* or *v*.

Japanese verbs involved in transitivity-alternations typically contain morphology additional to the root. Nominalizations etymologically-related to such verbs contain the identical morphology. These morphologically-complex nominalizations, root plus non-root morphology, are frequently associated with non-compositional meanings and provide an opportunity to understand the relation between nouns and verbs. This is desirable since there is still uncertainty of their relationship. (See Martin, 1975, above) A corollary of my analysis is that the commonly held view that there are overt transitivity-markers in Japanese is not correct.

The morphologically-complex nominalizations I refer to as root-based nominalizations do not consist of roots alone in the technical sense. As recognized by Marantz (2001), *destroy* is similarly bi-morphemic, consisting of a root $\sqrt{\text{stroy}}$ plus a particle *de*. The Japanese root-based nominalizations discussed in this article have a similar bi-morphemic structure, a root plus a particle. I argue that the non-root morphology is in the domain of the root, below the phase-defining heads. Since the morphology is not phase-defining, Japanese nominalizations conform with the locality domain that allows for reference to the root for semantic interpretation. It is my main task to convince the reader that this is the proper analysis.

Pace Harley (1995 and 1996), Miyagawa (1998) and Pylkkänen (2002), who argue that

the non-root morphology contained in transitivity-alternations are the phonological spell-outs of the abstract morphemes CAUSE and BECOME, which define the phase *v*, I argue the morphology cannot be phase-defining, but occurs lower than the first category-defining head.

Nominalizations containing non-root morphology are not productive, but are usually found in tandem with lexical causatives and unaccusatives derived from the same root. In particular, a nominalization which contains the morpheme *-(s)ase* is not a nominalization formed from the homophonous syntactically-productive causative morpheme¹ (Kuroda, 1993, Miyagawa, 1989 and Harley, 1995).

Similarly, nominalizations that contain a morpheme homophonous with the productive passive morpheme *-(r)are-* are not nominalizations of passives, but are non-productive, often associated with an unaccusative verb that contains the same morpheme². If there are morphemes which mark verbal adicity at the phase-defining category-forming level, homophones of the causative and passive morphemes would certainly be the best potential candidates. Let us look at examples in which the causative and passive morphemes occur as the non-root morphology in a lexical causative and an unaccusative, respectively.

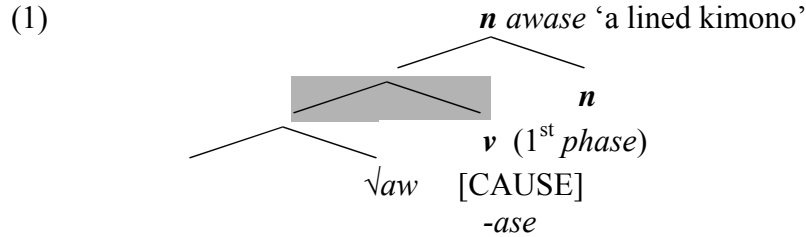
An example of a nominalization using the causative-related morphology is *aw-ase* ‘a lined kimono’; its verbal relative *aw-ase-(ru-_{NON-PAST})* has the meaning ‘to join (things)

¹ It is uncontroversial to claim that there are lexical causatives which, unlike the more common and morphologically idiosyncratic Japanese lexical causatives, are formed with the morpheme *-(s)ase-*, a morphological default (Miyagawa, 1989 and 1998, Kuroda, 1993 and Harley, 1995, among many). Nouns that contain the morpheme *-(s)ase-* include *shir-ase* ‘a notice’ (cf. *shir-ase-ru* ‘to inform’), *yar-ase* ‘a staged event’ (cf. *yar-ase-ru* ‘to make (X) do (something)’)) and *maniaw-ase* ‘a shoddy piece of work’ (cf. *maniaw-ase-ru* ‘to make do with’).

² Examples of verbs and nominalizations containing the passive-like morpheme are *mid-are* ‘disorder’ (cf. *mid-are-ru* ‘become disordered’), *nag-are* ‘a flow’ (cf. *nag-are-ru* ‘to flow’) and *yog-ore* ‘a stain’ (cf. *yog-ore-ru* ‘to become dirty’).

together, introduce’.

Harley (1995 and 1996), Miyagawa (1998), and Pylkkänen (2002)’s analyses claim that the non-root morphology is spelled-out in the phase-defining head *v*. This approach entails a deverbal analysis for the nominalizations under discussion, which would require a nominalizing *n* along the following syntactic lines:



Harley (1995 and 1996), Miyagawa (1998), and Pylkkänen (2002) assume a phonological spell-out of the ABSTRACT MORPHEME CAUSE in *v* is responsible for the causative force contained in lexical causatives. The non-cyclicity of nominalizations is, however, crucial evidence for the analysis I propose in this piece; that is, there is no true marking of adicity and there is no inalienable relation between causative force, for example, and the non-root morphology.

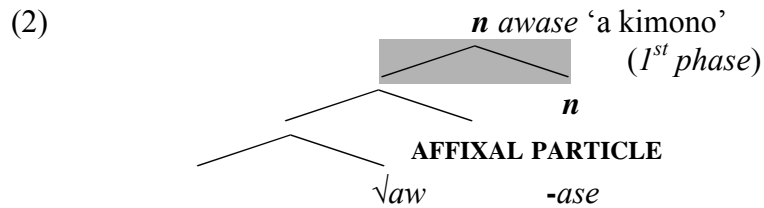
CYCLICITY, the equivalent of Chomsky’s phase (Marantz, 2001), is claim that a cyclic words morphologically-complex ‘word’ is able to derive its meaning from its constituent morphemes via categorial bracketing (Brame, 1973 and Aronoff, 1976). Since the morphology is found in the head of *v*, creating a phase by hypothesis, such nominalizations should be cyclic, but note: \sqrt{aw} ‘meet’ + CAUSE \neq ‘a lined kimono’.

Further, post-phase the meaning should be carried upward by hypothesis (Marantz, 2001 and 2002 and Arad, 2003), but it is not the case that the root \sqrt{aw} - ‘meet’ plus a marker of transitivity, the spell-out of CAUSE, carry the semantics upward to its nominalization

therefore the conditions for deverbal nominalizations according to the single engine hypothesis (Marantz, 2001 *est seq* and Arad, 2003) are not met.

A derivational relation between the noun and the verb amounts to the claim that the nominal semantics are derivable from the verbal semantics or vice versa. However, this is not so; how does one get from ‘join’ to ‘kimono’? So the deverbal analysis seems to be on the wrong track.

The analysis I advocate makes use of AFFIXAL PARTICLES (den Dikken, 1995). (See this author, 2005 and forthcoming):

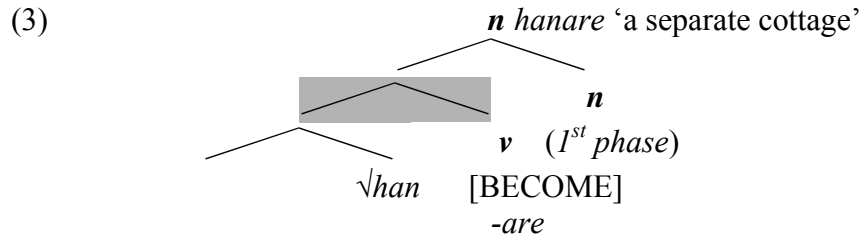


This provides the correct non-phase-defining/ non-cyclic result: \sqrt{aw} ‘meet’ + CAUSE \neq ‘a lined kimono’. The morpheme *-ase* as an affixal particle is not directly associated with a fixed meaning, adicity or with the category-defining head *v*. This justifies the claim that such nominalizations are root-based or more precisely RADICAL-BASED. Radical is the term Harbour (2000) employs for a root plus morphology in the root’s domain³. Semantics of the nominalizations derive from the semantically-underspecified root rather than the verb. Note that the nominalization *aw-ase* ‘a kimono’ is an artifact lacking any of the causative force one might expect if causative semantics are an inalienable property of the morpheme.

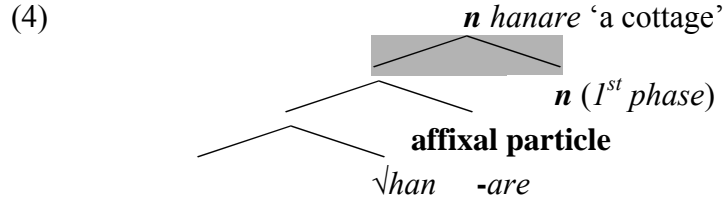
³ The term radical is from Sapir (1921). A radical subsumes both roots and stems.

Similar to nominalizations which contain the causative-like morpheme are those containing homophones of the passive morpheme *-(r)are*. This morpheme and is frequently found in unaccusative verbs.

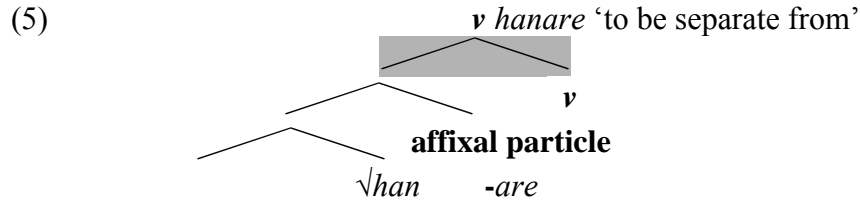
The verb *han-are(-ru-_{NON-PAST})* ‘to be separate from’ has the associated nominalization *han-are* ‘a cottage (separate from the main house)’. Again for Harley (1995 and 1996), Miyagawa (1998), and Pylkkänen (2002), placement of the passive-like morpheme in *v* entails a deverbal nominalization:



However the noun *hanare* ‘a cottage’ is not semantically derivable from the verb *han-are(-ru-_{NON-PAST})* ‘to be separate from’ and therefore the morpheme *-are-* in this context is non-cyclic/non-phase-defining; $\sqrt{\text{han-}}$ ‘be separate from’ + BECOME \neq ‘a cottage’. This failure to find the meanings attributed to the passive/anti-causative morpheme in the nominalizations leads to the conclusion that there is no derivational relation between these verbs and nouns. Moreover, there is no bi-unique relation between the morphemes and semantics. This type of nominalization, like that with the causative-like morpheme in examples 1 and 2, is derived from the semantics of the root rather than a semantic relation between the verb and noun. Again, an affixal particle analysis provides the correct result:



The verb, as well, has a proper analysis with an affixal particle rather than a morpheme in the phase-defining head *v*:



Such semantic non-compositionality seen above is a frequent property of nominalizations from the bi-morphemic combination of root plus non-root morphology in Japanese. This again leads to the conclusion that the semantics of the nominalization derive from the semantic under-specification of the root.

Non-cyclicity is often a property of nominalizations that contain morphology additional to the root. The nominalizations in Table 1 are further examples of the non-cyclic semantically non-compositional type:

Table 1

| Root | Verb-<small>INTRANS</small> | Verb-<small>TRANS</small> | Nominalization |
|----------------|---|--|--------------------------------------|
| <i>√ko(y)-</i> | <i>ko-e-(ru)</i> - <small>NON-PAST</small> ‘to become fat’ | <i>koy-as-(u)</i> - <small>NON-PAST</small> ‘to fatten’ | <i>ko-e</i> ‘manure’ |
| <i>√nag-</i> | <i>nag-e-(ru)</i> ‘to flow’ | <i>nag-as-(u)</i> ‘to make flow’ | <i>nag-ashi</i> ‘a sink’ |
| <i>√d-</i> | <i>d-e-(ru)</i> ‘to exit’ | <i>d-as-(u)</i> ‘to expel’ | <i>d-ashi</i> ‘soup stock’ |
| <i>√sag-</i> | <i>sag-ar-(u)</i> ‘to be lowered’ | <i>sag-e-(ru)</i> ‘to lower’ | <i>(o)sag-ari</i> ‘hand-me-downs’ |
| <i>√mag-</i> | <i>mag-ar(-u)</i> ‘to bend’ | <i>mag-e-(ru)</i> ‘to bend’ | <i>mag-e</i> ‘a topknot, chignon’ |

4. Non-root morphology = Affixal particles!?

To eliminate accidental homophony in Dutch, among several other languages, den Dikken (1995: 227-268) poses his affixal particle analysis. Where apparent transitivity-markers have several functional roles within the transitivity system, yet are phonologically homophonous, a PARTICLE analysis is the most economical. den Dikken notes that particles fall into two broad classes, ARGUMENT-CHANGING PARTICLES and ASPECTUAL PARTICLES (ibid: 33).

For den Dikken (1995) argument-changing bound morphemes which are associated with the marking of multiple valences are affixal particles. An example from Dutch is the morpheme *ver-* (den Dikken, 1995: 229-230):

- (6) a. Jan stuurde uitnodigen voor het feest aan zijn vrienden.
‘Jan sent invitations for the party to his friends.’
b. Jan **ver**-stuurde zijn vrienden uitnodigen voor het feest.
‘Jan sent his friends invitations for the party.’
- (7) a. Jan maakte zijn positie op de arbeidsmarkt beter.
‘Jan made his position in the job market better.’
b. Jan **ver**-beterde zijn positie op de arbeidsmarkt.
‘Jan bettered his position in the job market.’
- (8) a. Zijn positie op de arbeidsmarkt **ver**-beterde.
‘His position on the job market bettered.’
- (9) a. *ver*₋₁ = applicative affix
b. *ver*₋₂ = causative affix
c. *ver*₋₃ = unaccusative affix (den Dikken, 1995: 229-230)

To assign *ver-* a fixed meaning would unnecessarily multiply “accidental homophony” in Dutch. The same reasoning applies to Japanese. The Japanese morpheme *-e* functions quite similarly to the affixal particle *ver-*:

Table 2: *-e-* as marker of intransitivity

| Root | Intransitive | Transitive | Morphological Class |
|--------------|--------------------------------------|---|-----------------------|
| √ <i>ama</i> | <i>ama-e-ru</i> ‘be dependant on’ | <i>ama-(y)akas-u</i> ‘spoil (a child, e.g.)’ | Class 13 ⁴ |
| √ <i>bar</i> | <i>bar-e-ru</i> ‘come to light’ | <i>bar-as-u</i> ‘expose’ | Class 8 |
| √ <i>tok</i> | <i>tok-e-ru</i> ‘dissolve’ | <i>tok-Ø-u</i> ‘dissolve’ | Class 1 |

Table 3: *-e-* as marker of transitivity

| Root | Intransitive | Transitive | Morphological Class |
|--------------|---|--------------------------|---------------------|
| √ <i>ag</i> | <i>ag-ar-u</i> ‘rise’ | <i>ag-e-ru</i> ‘raise’ | Class 3 |
| √ <i>ak</i> | <i>ak-Ø-u</i> ‘open’ | <i>ak-e-ru</i> ‘open’ | Class 2 |
| √ <i>wak</i> | <i>wak-are-ru</i> ‘become separated’ | <i>wak-e-ru</i> ‘divide’ | Class 15 |

Table 4: *-e-* as applicative marker

| Root | Transitive | Di-transitive | Morphological Class |
|----------------|-------------------------------|------------------------------|---------------------|
| √ <i>sazuk</i> | <i>sazuk-ar-(u)</i> ‘receive’ | <i>sazuk-e-(ru)</i> ‘grant’ | Class 3 |
| √ <i>azuk</i> | <i>azuk-ar-(u)</i> ‘keep’ | <i>azuk-e-(ru)</i> ‘entrust’ | Class 3 |
| √ <i>os(V)</i> | <i>osow-ar-(u)</i> ‘learn’ | <i>oshi-e-(ru)</i> ‘teach’ | Class 16 |

Note also that morphological-marking is not a necessary feature of causative force in Japanese lexical causatives:

Table 5

| Root | Intransitive | Transitive |
|--------------|------------------------------------|---------------------------------|
| √ <i>war</i> | <i>war-e-(ru-NON-PAST)</i> ‘break’ | <i>war-(u-NON-PAST)</i> ‘break’ |
| √ <i>tok</i> | <i>tok-e-(ru)</i> ‘dissolve’ | <i>tok-(u)</i> ‘dissolve, melt’ |
| √ <i>hag</i> | <i>hag-e-(ru)</i> ‘be peeled | <i>hag-(u)</i> ‘peel’ |
| √ <i>nuk</i> | <i>nuk-e-(ru)</i> ‘fall out’ | <i>nuk-(u)</i> ‘pull out’ |

⁴ I use the morphological classes of Jacobsen (1992) as a convenient and recognized point of reference without implying that they are correct or complete.

These facts, taken together with the roles of non-root morphology in the nominalization data, raise questions for the standard view exemplified by Harley, Miyagawa, and Pytkänen, that morphology occurring in *v* is the phonological spell-out of the abstract morpheme CAUSE.

The relation of root to the non-root affix in Japanese is similar to the relation found in LATINATE ROOTS in English (Aronoff, 1976), e.g., the roots *ceive* and *mit*, which cannot form lexical categories without affixal particles, e.g., *per*, *re-*, *con-* and *de-*. (See Harbour (2000) who notes the argument-changing function of the affixal particle *de-* in English) Japanese affixal particles allow roots that would not otherwise lexicalize to project lexical categories. Again, this is reminiscent of the Dutch affixal particle, *ver-*, and justifies the claim that the non-root morphology in Japanese is affixal particles. Concerning Dutch affixal particles:

The overwhelming majority of *ver-* prefixed verbs whose roots are adjectival or nominal don't exist as verbs with *ver-* chopped off ... *ver-nietigen* [*is*, author] 'destroy', but **nietigen* doesn't exist as a verb (Marcel den Dikken, personal communication).

The non-root morphology in Japanese verbal alternations similarly plays a more fundamental role in the language rather than being mere exponents of verbal adicity.

Ten of the fifteen regular morphological classes identified in Jacobsen (1992: 258-268) contain roots that do not lexicalize without the additional non-root morphology; remaining classes are cases where either the lexical causative or unaccusative is morphologically-marked with Ø-morphemes. An analysis of the non-root morphology as affixal particles is consistent with the properties of the Japanese morphology.

This then explains the ability of nominalizations which contain affixal particles to be semantically non-compositional; the locality domain between the root and the category-defining head *n* is not disrupted by *v*.

Aronoff, in an observation on English latinate roots and their particles, notes:

Though it is more likely that one could attribute more commonality of meaning to occurrences of some of these prefixes [*affixal particles, author*] ...there is no general meaning which can be assigned to them. Thus one might try to assign *re-* a meaning ‘back’ and a large number of the verbs of the form *re=X* have something to do with back. What about *receive*, though? (1976: 14).

The logic behind the attribution of meaning to affixal particles would seem to be this: a morpheme, we are told, is the smallest *meaningful* linguistic unit (Bloomfield, 1933). (But see Aronoff, 1976, for discussion) Attribution of meaning to affixal particles seems related to their meaning when attached outside of a lexical category. For example *re-* in English, when attached to a verb consistently has the meaning of ‘again’, e.g., *re-apply*. In the same way that *de-* outside a category often has the meaning ‘of, from’, e.g., *de-verbal*. But assigning regular meaning to these pieces when they function as the means to lexicalize a non-lexicalizing root, e.g., *re-ceive* or *de-ceive*, seems to be an exercise in futility.

In the same way, the Japanese morphemes *-(s)ase* ‘causative’ and *(r)are-* ‘passive’ attached to the category verb have consistent meaning and therefore the tendency is to give similar meanings to their affixal particle ‘cousins’⁵.

⁵Roberts and Roussou (2003), a study of the syntactic path of GRAMMATICALIZATIONS conclude that the path of grammaticalizations is consistently from lower to higher functional nodes. If this is the case, then the Japanese affixal particles are not borrowed from causative- or passive-like morphemes to form

5. Japanese deverbal nominalizations

A second type of common nominalization in Japanese is deverbal. It crucially depends on a specific verbal argument structure for its legitimacy as a nominalization. These deverbal nouns consist of a verb-stem plus an overt nominalizing suffix *-mono*.

The morpheme *mono* has several uses which need to be distinguished. First, it exists as a free morpheme with two basic meanings, ‘a concrete object’ 物, and ‘a person’ 者. Making use of these two meanings, it is frequently found in compounds other than the deverbal nominalization I am concerned with.

One common compound is based on the ‘concrete object’ meaning; another makes use of its meaning as ‘a person’. Examples of the first type are *Kurosawa-mono* ‘something produced by the movie director, Kurosawa’, *kankoku-mono* ‘a product of South Korea’ and *sentaku-mono* ‘laundry (lit. something that is washed)’. Examples of the second type are *inaka-mono* ‘a country bumpkin’, *baka-mono* ‘a foolish person’ and *waka-mono* ‘a youth’.

Note that the function common to such compounds is the modification of *mono*, either the ‘person’ or ‘concrete object’ meaning of the noun; *waka-mono* is ‘a person who is young’, *Kurosawa-mono* is ‘a product of Kurosawa’.

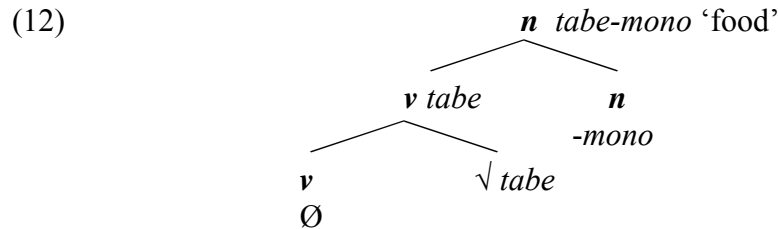
The nominalizing use of *mono* I want to focus on derives its meaning compositionally from the verb stem it is paired with: “something/someone that is V-en” A common deverbal noun *tabe-mono* ‘food’, for example, is derived from the verb stem *tabe* ‘eat’; it takes an internal argument in its argument structure and concreteness is a semantic

transitive and intransitivizing morphemes (Shibatani, 1990: 236), but are the reverse; the causative and passive morphemes are grammaticalizations of affixal particles.

requirement of internal arguments⁶. Literally, *tabe-mono* means ‘something that is eat-en’ or ‘food’. Slightly more formally:

Semantics: [*something/someone that is X-en*]

$[N_i V_j]_{VP} \rightarrow [V\text{-stem}_j + mono_i]_N$ iff N is VP internal and concrete. Derivationally:



Example 12 shows the noun *tabe-mono* ‘food’ is formed from the categorically unspecified root \sqrt{tabe} merging with the phase-defining head *v*; the verbal meaning is now necessarily carried upward in the derivation according to the hypothesis advocated by Marantz, 2001 and Arad, 2003. (See below) Further merger with *n* results in an overt morpheme *-mono*, a phonological spell-out of the head *n* for such nominalizations.

Note that the semantics for deverbal nominalizations in which an internal argument is required entails that unergative deverbal nominalizations do not exist. This is borne out by the fact that **naki-mono* (cf. *nak-u* ‘to cry’), **hashiri-mono* (cf. *hashir-u* ‘to run’), **aruki-mono* (cf. *aruk-u* to walk) and the like, are indeed not possible.

There are two apparent exceptions worth mentioning here: *hataraki-mono* ‘a hard working person’ (cf. *hatarak-u* ‘work’) and *warai-mono* ‘the butt of a joke’ (cf. *wara-u* ‘laugh’). Recall the modifying relation of compounds other than deverbal nominalizations. The compound *hataraki-mono* can be understood as the modification of

⁶ In addition to *mono* ‘concrete thing’, there is a morpheme *koto* ‘abstract thing’ used for deverbal nominalizations where the internal argument is not concrete, e.g., *negai-goto* ‘a wish’ from the verb *nega-u* ‘to wish for’ and *narai-goto* ‘things studied’ from the verb *nara-u* ‘to learn’. Interestingly, the verb *kangae-ru* ‘to think, ponder’ allows both: *kangae-goto* ‘thoughts, *kangae-mono* ‘a puzzle’. The *n* in these deverbal nominalizations is sensitive to the concreteness of the verbs internal argument.

mono's use as a person, i.e., 'a person who works'. It is therefore a compound rather than deverbal nominalization despite its use of a verb stem.

The nominalization *waraimono*, however does not fit the modifying compound pattern; it is not 'a person who laughs', but a 'person who is laughed at', conforming to the deverbal pattern. Hiroaki Tada (pc) suggests that the verb 'laugh' tolerates internal argument in becoming 'laugh at'. This view seems correct and explains the apparent paradox.

While root-based semantics may be semantically non-compositional when merged with the first category head as the examples of Table 2 show, derivation from a preexisting category sees only as far as its complement, a lexical category. In the deverbal Japanese case, the nominalization sees the argument structure of *v*, its complement, and if syntactic-semantic requirements are satisfied, a legitimate nominalization is formed.

Examples of this type of Japanese deverbal derivations are shown below in Table 7:

Table 7

| Stem | Verb | Deverbal Nominalization |
|---------------|------------------------------|---------------------------------------|
| <i>nomi</i> | <i>nom-u</i> 'to drink' | <i>nomi-mono</i> 'a drink' |
| <i>tabe</i> | <i>tabe-ru</i> 'to eat' | <i>tabe-mono</i> 'food' |
| <i>nise</i> | <i>nise-ru</i> 'to imitate' | <i>nise-mono</i> 'a fake' |
| <i>wasure</i> | <i>wasure-ru</i> 'to forget' | <i>wasure-mono</i> 'a forgotten item' |

Interesting to note in these cases, there are no root-based nominalizations extant.

Kageyama (1999) has argued that it is a phonological restriction crucially related to the number of mora.

6. Root-based nominalizations and their interaction with deverbal nominalizations

Cases where root-based derivations and deverbal nominalizations are the source of doublets from a common root are of interest and allow some insight into the crucial differences between the two. In many cases there are dramatic non-compositional semantic differences between the verbs and the root-based nominalizations while deverbal nominalizations always remain semantically predictable.

Not all roots meet the argument structure and semantic requirements of the deverbal morpheme *-mono* while forming root-derived nominalizations so doublets of the type shown in Table 8 are scarce:

Table 8

| Verb | Root-derived nominalization | Deverbal nominalization |
|---|-----------------------------------|---|
| <i>aw-ase-(ru)</i> -NON*PAST 'to join' | <i>aw-ase</i> 'a lined kimono' | <i>awase-mono</i> 'a joined thing' |
| <i>kabur-(u)</i> 'to wear on the head' | <i>kaburi</i> 'a head' | <i>kaburi-mono</i> 'a thing worn on the head' |
| <i>nor-(u)</i> 'to ride in' | <i>nori</i> 'enthusiasm' | <i>nori-mono</i> 'a vehicle' |
| <i>hara-u</i> 'to pay' | <i>harai</i> 'payment' | <i>harai-mono</i> 'things to be disposed of' |

In these cases, there are the expected semantic distinctions between the root-based nominalizations and deverbal nominalizations; the first often semantically non-compositional and unpredictable, the second compositional and predictable from the verbal meaning.

The final example seems to deviate from the pattern, non-compositional root-based nominalization vs. compositional deverbal nominalizations, but in fact, the verb *hara-u* has as its core meaning 'to take care of necessary matters' although by semantic extension has come to mean 'to pay' in contemporary Japanese.

Additionally, there is no requirement that root-based nominalizations be semantically idiosyncratic; the hypothesis merely posits ‘special meaning’ as a possibility for roots (Marantz, 2001). On the other hand, derivation from preexisting lexical categories, by hypothesis, can never be non-compositional (*ibid.*).

An example from Japanese that makes this point is the root-based nominalization *uri* ‘sales’ (cf. *ur-Ø-u* ‘to sell’). Its deverbal nominalization *uri-mono* means ‘something that is sold, goods for sale’. The root-based nominalization, *uri*, refers to the sales of a company, a store, etc. This close relation between verb and root-based nominalizations should not be unexpected since they are derived from a common root. The deverbal nominalization semantics, on the other hand, is mandated by the syntactic-semantics requirements of deverbal nominalizations in Japanese.

7. Summary

In this piece I have made use of data from two common types of Japanese nominalizations to test certain fundamental predictions of derivational morphology in the DM single engine hypothesis. I have argued that the infinitive-derived nominalizations of Martin (1975) are, in fact, derivationally-unrelated to verbs; neither the verb nor noun is basic, but a non-categorical root is their source.

In order to reach this conclusion, I have argued for a new approach to the morphology of alternating verbs; that homophonous morphemes with multiple functions in the transitivity system such as the Japanese morpheme *-e-* are better analyzed as affixal particles. This leads to the view that all apparent markers of adicity in Japanese are affixal particles. This provides the non-root morphology with the non-phase-defining

analysis necessary to explain the non-compositional semantics found in many of these nominalizations. Additionally, I have provided a preliminary analysis of the deverbal nominalizing morpheme *-mono*.

More generally, I have tried to show that derivational morphology is wholly the product of syntax, in line with the tenets of the single engine hypothesis. The single engine hypothesis (Marantz, 2001 and 2002 and Arad, 2003) claims that there is only one generative operation in human language. That is NARROW SYNTAX. Assuming this view, there is no need to postulate a lexicon as an additional generative component devoted specifically to word-formation. This should be a desirable result in a theory of grammar that pursues minimalism as its guiding principle.

One of the main conclusions is that root-based nominalizations need not be roots in the technical sense; that is, “what remains when all morphological information has been stripped from a form” (Aronoff, 1994: 34). The non-root morphology is affixal particles in the sense of den Dikken, (1995) rather than transitivity-markers, therefore non-category defining. I maintain there is no true morphological marking of valency in Japanese verbs.

The crucial point for this type of nominalization is semantic non-compositionality, which by hypothesis, can only occur at the first category-defining head. Non-root morphology in Japanese verbal alternations allows for non-compositional semantic relations between verb and noun. If such non-root morphology in Japanese were truly phase-defining, there could not be non-compositional relations between verb and noun as demonstrated above. (See Table 2) Assuming the non-root morphology is non-phase-defining, together with the compositionality found in the deverbal nominalization data, the predictions of the DM

single engine hypothesis concerning derivational morphology in the syntax are borne out by the Japanese data.

References

- Arad, Maya (2003). "Locality Constraints on the Interpretation of Roots: The Case of Hebrew Denominal Verbs." *Natural Language and Linguistic Theory* 21: 737- 778.
- Aronoff, Mark (1976). *Word Formation in Generative Grammar*. MIT Press, Cambridge, MA.
- Aronoff, Mark (1994). *Morphology by Itself*. MIT Press, Cambridge, MA.
- Bloomfield, Leonard (1993). *Language*. Holt and Rinehart, New York.
- Brame, Michael (Ed) (1972). *Contributions to Generative Phonology*. University of Texas Press, Austin Texas.
- Brame, Michael (1972). "The Segmental Cycle." Brame, Michael (Ed) (1972). *Contributions to Generative Phonology*. University of Texas Press, Austin Texas.
- Chomsky, Noam (2001). "Derivation by Phase." Kenstowicz, Micheal (Ed) (2001). *Ken Hale: A life in language*. MIT Press, Cambridge, MA.
- den Dikken, Marcel (1995). *Particles: On the syntax of verb-particle, triadic, and causative constructions*. Oxford University Press, Oxford and New York.
- Harbour, Daniel (2000). "Radical Decomposition." manuscript, MIT.
- Harley, Heidi (1995). *Subjects, Events, and Licensing*. Ph.D. Dissertation, MIT.
- Harley, Heidi (1996). "Sase Bizarre: The Structure of Japanese Causatives." Koskinen, P. (Ed) Proceedings of the 1995 Canadian Linguistics Society meeting, *University of Toronto Working Papers in Linguistics*.

- Jacobsen, Wesley (1992). *The Transitive Structure of Events in Japanese*. Kuroshio, Tokyo.
- Kageyama, Taro (1999). *Keitairon to Imi* ('Morphology and Meaning'). Kuroshio, Tokyo.
- Kenstowicz, Michael (Ed) (2001). *Ken Hale: A life in language*. MIT Press, Cambridge, MA.
- Kuroda, Shige-Yuki (1993). "Lexical and Productive Causatives in Japanese: An Examination of the Theory of Paradigmatic Structure." *Journal of Japanese Linguistics* 15: 1- 81.
- Marantz, Alec (2001). "Words." *West Coast Conference on Formal Linguistics*, Santa Barbara.
- Marantz, Alec (2002). "Words and Things." handout, *Australian Linguistics Institute*, Canberra.
- Martin, Samuel E. (1975). *A Reference Grammar of Japanese*. Yale University Press, New Haven, CO.
- Miyagawa, Shigeru (1989). *Syntax and Semantics 21: Structure and Case-Marking in Japanese*. Academic Press, San Diego, CA.
- Miyagawa, Shigeru (1998). "(s)ase as an Elsewhere Causative and the Syntactic Nature of Words." *Journal of Japanese Linguistics*: Volume 18, pgs. 67 -110.
- Nishio, Tatsuji (1977). "*Dōshi ren'yōkei no meishi-ka-ni kansuru ichi kosatsu*" ('Concerning nominalizations of Japanese verb stems'). manuscript, Meiji Gakuin, Tokyo.
- Poser, William (1983). *The Phonetics and Phonology of Tone in Japanese*. Ph.D. dissertation, MIT.
- Pylkkänen, Liina (2002). *Introducing Arguments*. Ph.D. dissertation, MIT.

- Roberts, Ian and Anna Roussou (2003) *Syntactic Change: A Minimalist Approach to Grammaticalization*, Cambridge University Press, Cambridge and New York.
- Sapir, Edward, (1921). *Language*. Harcourt, Brace, Jovanovich, New York.
- Shibatani, Masayoshi (1990). *The languages of Japan*. Cambridge University Press, Cambridge and New York.