Root and deverbal derived nominalizations: Lexical flexibility in Japanese

1. Introduction: Phases and lexical formation

Japanese displays a wide variety of LEXICAL FLEXIBILITY; adjectives become nouns, nouns become verbs, and verbs become nouns. This chapter is a study in the lexical flexibility between verbs and nouns. I discuss two types of nominalizations in Japanese. While the first looks like an example of Ø-derived CONVERSION, I argue it is not. The second is truly deverbal; but not Ø-derived.

The analysis I propose for the first type of Japanese nominalization is crucially based on the claim that lexical formation (Marantz, 1997, 2001 and 2002) consists of categorically-unspecified ROOTS merging with the functional heads *n*, *v* and *a*. This forms a syntactic PHASE in the sense of Chomsky (2001). Phases are points in the derivation of a linguistic computation where information is semantically and phonologically interpreted:

> 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: 75).

A simple example that demonstrates the plausibility that phases exist at the point of lexical formation is the root √*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 functional 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 it refers to a bodily function. This is exactly what would be expected if a phase also exists at the lexical level. (See Arad (2003) and Marantz (2001) and (2002) for detailed arguments)

2. Apparent Deverbal Conversions

A substantial number of Japanese nominalizations are equivalent to the *renyōkei* (called 'infinitive' in the Western literature), a verbal stem, e.g., *oyogi* 'swimming' (cf. *oyogu* to swim), *odori* 'dancing' (cf. *odoru* 'to dance), etc. Martin (1975: 883) refers to such nominalizations as INFINITIVE-DERIVED NOUNS and they are commonly considered deverbal (Kageyama, 1999 and Nishio, 1977, among many). In a footnote, Martin (1975) notes:

> In a few instances the derivation may have gone the other way

> historically; …from the viewpoint of synchronic description, it would appear not to matter, in fact, to be undecidable.

I argue, based on the semantics of such nominalizations that there can be no derivational relation between the two in either direction; while they appear to be conversions; i.e., zero-related changes of category, the semantics tells us otherwise.

The SINGLE ENGINE HYPOTHESIS/MINIMALIST PROGRAM (Marantz, 2001, and 2002 and Arad, 2003) argues that the distinction between root derivations and word-based derivations is responsible for semantically non-compositional and semantically compositional meanings, respectively:

> The ability to assign multiple interpretations is strictly reserved for roots. Once the root has merged with a category head and formed a word (n, v, etc.), its interpretation is fixed and carried along throughout the derivation. This locality constraint is universal and holds across all languages (Arad, 2003: 740).

Japanese verbs participating in transitivity alternations typically show non-root morphology. Nominalizations based on verbs participating in transitivity alternations retain this morphological-marking and are not strictly speaking roots in its standard sense. Harbour (2000) refers to such morphologically-complex pieces as RADICALS, which subsume roots and stems (Sapir, 1921). With this in

mind, let us consider the semantics of several Japanese nominalizations; some formed with transitivizing affixes, others with intransitivizing affixes.

The root √*aw*-, of the paired verbs *a-u* 'meet'/*aw-ase-ru* 'join', together with the causative morpheme *–ase* yields the nominalization *awase* 'a lined kimono'. An analysis that assumes transitivity-marking morphology occurs in the terminal node *v°* (e.g., Harley, 1995 and 1996, Miyagawa, 1998 and Pylkkänen, 2002) is forced to claim that non-compositional nominalization such as *awase* is necessarily a deverbal noun. The semantic relation between the verb *awase-(ru)* 'join' and the nominalization *awase* 'a lined kimono' then conflicts with the predictions of the single engine hypothesis which claims that non-compositionality is decided at the first lexicalizing head.

Examples of non-compositionality between verbal meaning and nominal semantics are not an isolated phenomenon, but a frequent characteristic of nominalizations containing non-root morphology. Consider Table 1, below:

Table 1: Non-compositional morphologically-complex nominalizations

Root	Transitive Verb	Nominalization
√*chir-*	*chir-**as**-u-*$_{\text{TRANS}}$ 'scatter'	*chir**as**hi* 'a leaflet'
√*d-*	*d-**as**-u* 'expel'	*d**as**hi* 'soup stock'
√*nag-*	*nag-**as**-u* 'wash away'	*nag**as**hi* 'a sink'
	Intransitive Verb	
√*tar-*	*tar-**e**-ru* 'sag, droop'	*tar**e*** 'sauce, gravy'
√*kir-*	*kir-**e**-ru* 'be severed'	*kir**e*** 'a piece of cloth'
√*han-*	*han-**are**-ru* 'separate from'	*han**are*** 'a cottage'

The non-compositional semantic relation between verbs and their nominalizations rules out any derivational relation. It therefore follows that such nominalizations are not deverbal. I assume the Ø-HYPOTHESIS which in this context claims all radical-derived nominalizations, both compositional and non-compositional, are derived without reference to the verb.

The paradox for the single engine hypothesis under the standard assumption that apparent transitivity-marking morphology defines the lexical category *v* is addressed by providing an untraditional analysis of the morphology of alternating verbs in Japanese, I argue for a decompositional approach to Japanese roots following a line of thought advanced by Harbour, (2000).

3. Where's the causative force in the nominalization?

How does one get from the semantics of 'meet' + CAUSATIVE = 'a kimono'? Nominalizations with apparent transitivity markers name artifacts almost exclusively, e.g., *aw-ase* 'a lined kimono' related to *aw-ase-ru* 'to join', *chir-ashi* 'a leaflet' related to *chir-as-u* 'to scatter', *han-are* 'a separate cottage' related to *han-are-ru* 'to be separate' and *kir-e* 'a piece of cloth' related to *kir-e-ru* 'to cut'. All nouns and verbs contain the identical non-root morphology, but in nominalizations, the morphology makes no reference to argument structure. Modifying nouns can only have a possessor reading, e.g., *kanojo-no awase* 'her lined kimono' (Marantz, 1997).

Since the semantics of transitivity-markers makes no semantic contribution to the nominalizations, I claim that causative force in both the verbal and nominal environments is independent of morphological exponence. As in English, causative force in Japanese lexical causatives is exclusively associated with a zero-morpheme, CAUSE. This raises a crucial question that demands an answer. This is the focus of the next section.

4. The Function of the Morphology

If apparent transitivity markers are not the morphological spell-out of the category-defining head *v*, as commonly assumed (e.g., Pylkkänen, 2002,

Miyagawa, 1998, and Harley, 1995 and 1996); if they are not the source of the abstract morphemes CAUSE and STATE, then what is their function? Their roles in the nominal environment place them syntactically between the root and the category-defining head *n*, i.e., they are non-cyclic non-category-defining a property commonly associated with non-compositional semantics given this syntactic analysis (Aronoff, 1976).

den Dikken (1995) argues that apparent valence-changing morphemes with multiply ambiguous functions in Dutch, Indonesian and Sanuma are AFFIXAL PARTICLES.

Consider the affixal particle *ver-* and its function in Dutch:

(1) 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.'

(2) 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.'

(3) Zijn positie op de arbeidsmarkt ***ver***-beterde.
'His position on the job market bettered.'

(4) a. *ver*-$_1$ = applicative affix

b. *ver*-$_2$ = causative affix

c. *ver*-$_3$ = unaccusative affix (den Dikken, 1995: 229-230)

Within Dutch, the affix *ver*- has no unique semantic function, e.g., a bi-unique association with the causative force of verbs. It appears in multiple verbal environments. It therefore, demands an analysis, in den Dikken's view, that avoids accidental homophony. den Dikken's conclusion is that such affixes, apparent transitivity-markers in Dutch, Indonesian and Sanuma, are insightfully analyzed as AFFIXAL PARTICLES (1995: 235-5).

One of den Dikken (1995)'s arguments is based on paraphrase. He notes that example (3) b, above, *Jan* ***ver****-stuurde zijn vrienden uitnodigen voor het feest* 'Jan sent invitations for the party to his friends', with the affixal particle *ver*-, can be paraphrased as *Jan stuurde zijn vrienden uitnodigen voor het feest* ***toe***/***op***, with either of the free particles *toe* or *op* (den Dikken, 1995: 234).

Unlike Dutch and English, Japanese has no free particles. Based on their syntactic functions, however, a plausible candidate for a particle in Japanese is the morpheme *–ku* and its allomorph, the postposition *-ni*.

A number of roots in Jacobsen's Class 3, in addition to forming verbs and nouns, form adjectives which belong to the class which occur with bound morphology, (*keiyōshi*, in Japanese), e.g., √*hiro*-, √*taka*-, and √*tsuyo*-. Their non-

past adjective forms are *hiro-i* ‘wide’, *taka-i* ‘high’ and *tsuyo-i* ‘strong’. As verbs they take the forms *hiro-mar-u* /*hiro-me-ru* ‘widen-$_{\text{INTRAN}}$ /widen-$_{\text{TRAN}}$

As noted by Kageyama (1999: 73), these intransitive/transitive verb pairs have paraphrases in which the bound adjectival morpheme *–ku* is supported by the light verbs *naru* ‘become’ and *suru* ‘do, make’, e.g., *tsuyo-ku naru* ‘X becomes strong(er)’ and *tsuyo-ku suru* ‘make X strong(er)’, cf. *tsuyo-mar-u* and *tsuyo-me-ru* ‘strengthen’, respectively. .So they are paraphrasable.

The most crucial to the AFFIXAL PARTICLE HYPOTHESIS (Volpe, 2005) I argue for is that:

> 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*, MV] 'destroy’, but **nietigen* doesn't exist as a verb (Marcel den Dikken, personal communication).

Affixal particles are required for lexical formation. If the morphological markers associated with transitivity in Japanese are affixal particles of the type postulated by den Dikken, we need to find affixal morphemes with multiple functions in the transitivity-marking system and cases where the roots have no word-forming capacity without affixes, the notable properties of Dutch affixal particles.

I focus on the Japanese morpheme *–e-*, which is found as an apparent transitivity-marker with multiple functions in seven of Jacobsen (1992)’s fifteen

semi-productive morphological classes. Like den Dikken (1995: 230)'s affixal particle *ver-* in Dutch, in Jacobsen's Classes 1, 9, and 13, it seems to mark intransitivity:

Table 2: Class 1: *-e-* / *-Ø-*

Intransitive	**Transitive**
*hag-**e**-ru* 'peel off'	*hag-u* 'peel off'

Table 3: Class 9: *-e-* / -as-

Intransitive	**Transitive**
*ak-**e**-ru* 'dawn'	*ak-as-u* 'spend the night'

Table 4: Class 13: *-e-* / *-akas-*

Intransitive	**Transitive**
*ama-**e**-ru* 'act dependent on'	*ama-(y)akas-u* 'spoil'

In Classes 2, 3, 14 and 15 it behaves as a marker of transitivity:

Table 5: Class 2: *-Ø-* / *-e-*

Intransitive	**Transitive**
ak-u 'open'	*ak-**e**-ru* 'open'

Table 6: Class 3: *-ar-* / *-e-*

Intransitive	**Transitive**
ag-ar-u 'rise'	*ag-**e**-ru* 'raise'

Table 7: Class 14: *-or-* / *-e-*

Intransitive	**Transitive**
kom-or-u 'be fully present'	*kom-**e**-ru* 'fill with'

Table 8: Class 15: *-are-* / *-e-*

Intransitive	**Transitive**
sut-are-ru 'fall into disuse'	*sut-**e**-ru* 'throw away'

In a sub-class of Class 3 (*jūjūdōshi* 'verbs of giving and receiving'), the presence of the morpheme introduces an applicative argument:

Table 9: Sub-class of Class 3 – Transitive / Di-transitive Alternations

Transitive	Ditransitive
sazuk-ar-(*u*) 'receive'	*sazuk-**e**-*(*ru*) 'grant'
azuk-ar-(*u*) 'keep'	*azuk-**e**-*(*ru*) 'entrust'
osow-ar-(*u*) 'learn'	*oshi-**e**-*(*ru*) 'teach'

Indeed in Classes 3, 9, 13, 14, and 15, the roots alone have no lexicalizations as verbs or nouns without the attachment of the closed-class morphology to the roots. This is fully the case in ten of Jacobsen (1992)'s fifteen alternating-classes.

The single morpheme *–e-* has multiple functions within the Japanese verbal system, in fact, the very same functions as the morpheme *ver-* in Dutch. To the multiply ambiguous morpheme *–e-*, one may also add the morpheme *–Ø-*. In Classes 1, 4, and 12, *Ø* is associated with transitive verbs, in Classes 2 and 8 it is associated with intransitive verbs. If we include the ambiguous morpheme Ø as an affixal particle, we cover all of Jacobsen's classes.

Since Japanese roots have no lexicalizations without the attachment of affixal particles, I draw an analogy with BOUND LATINATE ROOTS in English, e.g., *–ceive* and *–mit*, (Aronoff, 1976: 11-14), which also have no lexicalizations without the attachment of affixal particles, e.g., *re-*, *con-*, and *per-*. As is the case with bound latinate roots, the majority of Japanese alternating roots do not form lexical items

without affixal particles. Therefore, the crucial function of the putative transitivity-markers is sanctioning the formation of lexical formation.

This analysis is in line with the recent "radical decomposition" of roots in DM by Harbour (2000), who argue that roots such as √*destroy* are, in fact, bi-morphemic cross-linguistically, decomposable into a root √-*stroy* and a particle *de*-. (See Harbour (2000) for Hebrew)

Chomsky and Halle (1968: 371) give affixal particles the special phonological boundary =, as opposed to the universal boundaries + and #. *Destroy* is thus analyzed as *de=stroy*. In other words, despite the morphological complexity of root=affixal particle, it does not create a phonological cycle, i.e., it is non-phase-defining. If it is non-phase-defining, it follows that there may be semantic anomalies associated with morphemes of the root=affixal particle type. If the Japanese morphemes containing roots and affixal particles have a = boundary then it follows that they are not semantically interpreted until they later merge with a phase-defining morpheme, *n*, *v*, or *a*. Nothing crucial relies on whether Japanese root and affixal particles have the special boundary =, but merely that they be non-cyclic, i.e., non-phase-defining.

Cycles in phonology depend on labeled bracketing (Aronoff, 1976: 25), i.e., the categorial labels verb, noun and adjective. Labeling for complex morphological pieces entails that the meaning of the word can be

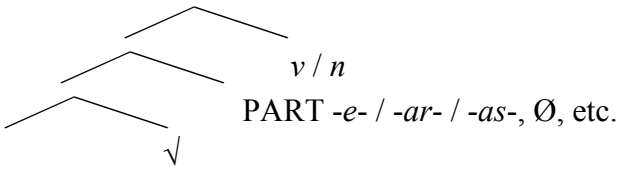
compositionally derived from the meaning of its constituent parts (Aronoff, 1976 and Brame, 1974). In other words, the meaning of the noun *awase* 'kimono', if bracketed, should be derivable from its parts *√*aw*- 'meet' + *ase*-CAUSE. This is obviously not the case and the conclusion that the closed-class morphology is non-cyclic, i.e., non-phase-defining, follows.

All Japanese nominalization of the class under discussion here, by this criterion, are non-cyclic, non-bracketed and non-phase-defining: √*chir*- 'scatter' + -*as*-CAUSE ≠ 'leaflet'; √*nag*- 'flow' + -*as*-CAUSE ≠ 'a sink'; √*d*- 'exit' + -*as*-CAUSE ≠ 'soup stock'; etc.

Given a non-cyclic affixal particle analysis, we now have an explanation for the frequent non-compositional semantic relation between Japanese verbs and their root-related nominalizations that contain affixal particle.

I assign the following structure to Japanese radicals:

(5)



Crucially, affixal particles being non-cyclic must be below the phase-defining heads *v* and *n* in order to account for the non-compositional semantic interpretations they may have. In fact, this is expected since non-compositionality is strongly associated with non-cyclicity (Aronoff, 1976: 26).

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'.

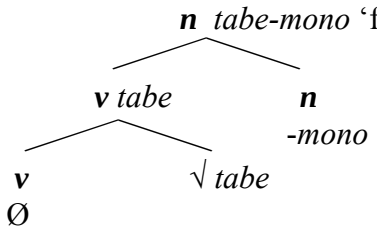
The nominalizing use of *mono* I want to focus on derives its meaning compositionally from the verb stem it is paired with: "something/someone that

can be 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 requirement of internal arguments[1]. 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:

(6)



Example (6) shows the noun *tabe-mono* 'food' is formed from the categorically unspecified root √*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.

[1] 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. (Thanks to Hiroaki Tada for bringing this to my attention)

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 *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 by 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 9:

Table 9

Stem	Verb	Deverbal Nominalization
nomi	*nom-u* 'to drink'	*nomi-mono* 'a drink'
tabe	*tabe-ru* 'to eat'	*tabe-mono* 'food'
nise	*nise-ru* 'to imitate'	*nise-mono* 'a fake'
wasure	*wasure-ru* 'to forget'	*wasure-mono* '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 morae.

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 10 are scarce:

Table 10

Verb	**Root-derived nominalization**	**Deverbal nominalization**
aw-ase-(ru)-NON-PAST 'to join'	*aw-ase* 'a lined kimono'	*awase-mono* 'a joined thing'
kabur-(u) 'to wear on the head'	*kaburi* 'a head'	*kaburi-mono* 'a thing worn on the head'
nor-(u) 'to ride in'	*nori* 'enthusiasm'	*nori-mono* 'a vehicle'
hara-u 'to pay'	*harai* 'payment'	*harai-mono* '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 category-changing constructions, two common types of Japanese nominalizations that are not conversions. 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.

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); 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. If correct, this is a desirable result in a theory of grammar that pursues minimalism as its goal.

Finally, the data from Japanese supports the claim that lexical flexibility is a pervasive property of human language.

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