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CONSPIRACY OF FORM AND FUNCTION FOR OPTIMIZATION OF LANGUAGE CHANGE

Formal and functional approaches to language have been at odds with each other for some time. However, this state of affairs is not constructive or productive. In this paper I will show that an ongoing morphological change in Japanese, *ra-nuki kotoba* 'ra-deletion language', initiated by functional motivation like economy (communicative efficiency), is guided and shaped most effectively by interacting formal (syntactic/semantic) properties of related constructions. Through the exposition in this paper I would like to demonstrate that there is nothing incompatible between the orientations of formalism and functionalism. The former provides descriptions and explanations for structural possibilities (or delimitation) of language. From these possibilities, certain forms are chosen (or preferred) over others for various purposes (communication, innovation, etc.) according to the principles and generalizations of the latter.

1. Introduction

Generally speaking, formal and functional approaches to language have been at odds with each other for some time now (see the very apt and instructive imaginary conversation between a formalist and functionalist found in Newmeyer (1998, 1–5)). The attitudes of formalists and functionalists towards each other are of indifference at best and utter rejection in some cases. However, as Newmeyer – a staunch advocate of generative enterprise – notes, this state of affairs is not constructive or productive. He states that he has "found a wealth of interesting generalizations and suggestive avenues of research in the work carried out in that [i.e. functionalist] tradition" (Newmeyer (1998, 6)). Further, Newmeyer believes that "what it will take to incorporate many of these [functionalists'] generalizations into a comprehensive theory of language challenges important conceptions held by most mainstream formal linguists" (Newmeyer (1998, 6)).

I concur with Newmeyer fully. In this paper I will show that an ongoing morphological change in Japanese, *ra-nuki kotoba* '*ra*-deletion language', initiated by functional motivation like economy (Haiman (1983))[1] is guided and shaped most effectively by interacting grammatical (syntactic/semantic in particular) properties of related constructions. Through the exposition in this paper I would like to demonstrate that there is nothing incompatible between the orientations of formalism and functionalism. The former provides descriptions and explanations for structural possibilities (or delimitation) of language. From these possibilities certain forms are chosen

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(or preferred) over others for various purposes (such as effective communication, innovation to streamline grammatical organization, etc.) according to the principles and generalizations of the latter.

2. Instability in the Potential Construction

2.1. *The Innovation and Other Related Constructions*

The morphological change in question is concerned with the potential construction (1a) expressed by the verbal suffix *-rare*. Incidentally, homophonic forms of the suffix are also found in other constructions serving diverse constructions such as the direct passives (1b), adversity passives (1c), honorifics (1d), and spontaneous emotion/perception (1e), the last of which is exemplified by a different verb from the rest due to its unique semantics. The verbs *tabe* 'eat' and *kanzi* 'sense' in (1) have vowel final stems. (For some of the sentences in (1), alternative case-marking patterns are available. For example in (1a), the object *sakana* 'fish' can also be marked by the nominative *-ga*, if the subject *Taroo* is marked by the dative *-ni*. We will come back to this in section 3.2 below.)

(1) a. Taroo-ga sakana-o tabe-(ra)re-ru.
Taroo-Nom fish-Acc eat-Pot-Pres
'Taroo can eat the fish.' [potential]

b. Sakana-ga Taroo-ni tabe-*(ra)re-ru.
fish-Nom Taroo-Dat eat-Dir.Pass-Pres
'The fish is eaten by Taroo.' [direct passive]

c. Hanako-ga sakana-o Taroo-ni tabe-*(ra)re-ru.
Hanako-Nom fish-Acc Taroo-Dat eat-Adv.Pass-Pres
'Hanako is adversely affected by Taroo's eating of the fish.' [adversity passive]

d. Sensei-ga sakana-o tabe-*(ra)re-ru.
teacher-Nom fish-Acc eat-Hon-Pres
'The teacher (honored) eats the fish.' [honorific]

e. Watasi-ni(-wa) hissya-no seii-ga
I-Dat(-Top) author-Gen sincerity-Nom
kanzi-*(ra)re-ru.
feel-Spont.Per-Pres
'I sense the author's sincerity.' [spontaneous emotion/perception]

Curiously, we note that it is possible to drop the first syllable [ra] of the suffix *-rare only* for the potentials (1a).[2]

The innovative potential form *tabe-re-ru* 'can eat' is pejoratively labeled by prescriptive grammarians as *ra-nuki kotoba* '*ra*-deletion language' and is considered to be "sub-standard" compared to the "standard" form *tabe-rare-ru*. The innovation, which has existed at least since around the 1920s (Jinnouchi (1998)), is now in progress in an accelerating speed. The table below (adapted from Jinnouchi (1998))[3] indicates the ratios of usage of the innovated potential forms of four exemplar verbs according to age groups.

(2)

age	10s	20s	30s	40s	50s	60s
mi-re-ru 'can see'	78%	59%	42%	38%	29%	21%
ko-re-ru 'can come'	62%	43%	47%	37%	39%	32%
tabe-re-ru 'can eat'	53%	35%	32%	31%	30%	29%
kangae-re-ru 'can think'	15%	10%	10%	10%	10%	10%

The table shows that (a) the change is dominant among young speakers with a steep rise of usage of the innovated forms between the speakers in their 10s and 20s. (b) The change is not complete in that the innovative usage is not 100% for any age group. And (c) phonologically shorter verbs are more susceptible to the change.

As seen in (3), with consonant final verb stems like *kaw* 'buy' and *nozom* 'hope', the picture is a bit different. In example (3a) the potential morpheme *-(r)e* is not only distinct from that in (1a) above but also from its counterpart *-(r)are* seen with the direct/adversity passives (3b, c), honorifics (3d), and spontaneous emotion/perception (3e) ([r] deletes when the suffixes follow a consonant final verb stem).

(3) a. Taroo-ga sakana-o ka[w]-e-ru.
Taroo-Nom fish-Acc buy-Pot-Pres
'Taroo can buy the fish.' [potential]

b. Sakana-ga Taroo-ni kaw-are-ru.
fish-Nom Taroo-Dat buy-Dir.Pass-Pres
'The fish is bought by Taroo.' [direct passive]

c. Hanako-ga sakana-o Taroo-ni kaw-<u>are</u>-ru.
Hanako-Nom fish-Acc Taroo-Dat buy-Adv.Pass-Pres
'Hanako is adversely affected by Taroo's buying the fish.' [adversity passive]

d. Sensei-ga sakana-o kaw-<u>are</u>-ru.
teacher-Nom fish-Acc buy-Hon-Pres
'The teacher (honored) buys the fish.' [honorific]

e. Watasi-ni(-wa) hissya-no seikoo-ga
I-Dat(-Top) author-Gen success-Nom
nozom-<u>are</u>-ru.
hope-Spont.Emot-Pres
'I long for the author's success.' [spontaneous emotion/ perception]

2.2. *Remarks on Analogy*

According to Matsuda (1993), (1a) and (3a) taken together demonstrate "analogical leveling" in the potential paradigm – the shorter *-(r)e* form for consonant final verb stems is taking over the longer (standard) *-rare* form for vowel final verb stems. As made clear below, calling it paradigm leveling might superficially explain why the change is taking place *now* for vowel final verbs. However, it offers no explanation regarding the causes of the (presumed) identical historical change for consonant final verbs. It is also silent about the uniqueness of the potential paradigm as the sole target of the innovation. As pointed out by one of the reviewers, this argument based on the historical change is controversial and delicate. We will return to the historical issues immediately below.

Before proceeding any further – in response to another reviewer – let us consider, in more depth, the viability of analogical leveling applied to the morphological change under consideration. I would like to point out conceptual and empirical disadvantages of analogical leveling here.

First, as noted by Lehmann (1973, 198), "[e]ssential problems of analogy [including analogical leveling] that require further study include the conditions (a) under which it takes place and (b) by which new patterns get established. We cannot yet provide satisfactory answers." If Lehmann's concern is not adequately addressed, as King (1969, 235) points out, analogy (and analogical leveling) would "become terminological receptacles devoid of explanatory power." These are serious (a bit dated but still valid) conceptual indictments of the notion of analogy (and analogical leveling)

within the context of language change. In many cases, analogy seems to be evoked as a factor for language change in a post hoc and gratuitous manner.

Second, as pointed out by McMahon (1994), not much progress has been made regarding the elucidation of the concept of analogy and analogical leveling. According to McMahon, the two exceptional and most promising candidates in this regard are Kurylowicz (1949) and Mańczak (1958), both of whom actually predate Lehmann and King. These two scholars proposed respective sets of generalizations about analogy. McMahon tells us that Kurylowicz does not deal with analogical leveling squarely but Mańczak's second tendency indeed does. The tendency says that alternation within paradigms is more often *abolished* than introduced.

Let us apply Mańczak's second generalization to the current set of data in (1a) and (3a) above. Comparing the two, we can immediately tell that morphological discrepancy between the paradigms is not abolished/leveled, at least not in the surface forms. The potential morphology is not rendered uniform in that both *-re* and *-e* are employed. Would the result be considered leveling nevertheless? How similar to the target form should a leveled form be? How much deletion is sufficient? Would *-are* (as in **tabe-are*) count as leveling? If not, what distinguishes between *-are* and *-re*? Answers to these questions are not available from what Mańczak says (or, for that matter, any other conception of analogical leveling as far as I can see). The empirical problem here, of course, arises from the absence of explicit principles of analogy (and analogical leveling), as the remarks by Lehmann and King tell us.

Alternatively, if the morpheme *-e* is the single underlying leveled potential morpheme (perhaps along the lines of the synchronic analysis of de Chene (1987)), then the analogical process has to be accompanied by insertion of [r]. Such insertion appears to be arbitrary. Why, for one thing, should an inserted consonant be [r] instead of any other?[4] There seems to be no principled reason for the distinction.

On the other hand, as demonstrated in more detail below, if we begin with *-rare*, all we need is [ra]-deletion and [r] of *-re* will be deleted for consonant final verbs due to the fact that Japanese does not allow consonant clusters in general. This automatically accounts for other similar alternations involving the non-past *-(r)u* and causative *-(s)ase* as well (the latter of which would require [s]-insertion in de Chene's system. Why should it be [s]?).

It is important to notice that what is described as a leveling process here is not a random one where two *unrelated* forms become similar. And the concept of analogy as an expository tool captures this state of affairs

well, albeit *informally*. It is fine, then, to appeal to the notion of analogy for expository purposes. However, expository convenience should not be confused with explanation. As made clear below, the current proposal is distinct in this respect – I will offer a systematic way of handling the data that is capable of generating testable predictions.

2.3. *Brief Exposition on Historical Aspects of the Potentials*

The assumption about the history of the potentials in this paper is the following. The morpheme *-raru* (the predecessor of the later *-rare*) established itself around the Heian period (the 8–13th centuries), and later became the original *single* homophonic morpheme for *both* vowel final *and* consonant final verb stems. The morpheme in question was employed by all the five constructions seen in (1) and (3) above. Thus I am touting a single origin hypothesis for the potentials. According to such an idea, during the Edo period (the 17–19th centuries), *-rare* changed to *-(r)e* for consonant final verb stems only in the potentials. [N.B.: The exposition here is not at all intended to be detailed discussion about the history of the potentials. Please consult the work cited and the references therein.]

However, this idea is controversial. According to Kinsui (2002a), there are three types of approaches to the history of the potential construction with consonant final verb stems: (a) the grammaticalization hypothesis, (b) the conjugational conversion hypothesis, and (c) the single origin hypothesis. The former two suggest that the sources of the potentials for consonant final and vowel final verbs are *disjoint*. Thus they can be called a dual origin hypothesis collectively. The central claims of each of the hypotheses are as the following.

The grammaticalization hypothesis (Shibuya (1991), among others) suggests that what used to be an independent verb *e* (or *u*) 'gain' became grammaticalized and became a suffix signifying potentiality: e.g. *yomi-e* → *yome-e* → *yom-e* 'can read'.

The conjugation conversion hypothesis (Sakanasi (1969), among others) supposes a special conjugation conversion suffix, namely *-e*, that attached to a consonant final verb like *yom*, and converted it to a vowel final verb *yom-e*. The resulting form subsequently acquired the sense of potentiality.

The single origin hypothesis (Yuzawa (1970), among others) takes *-rare* as the common potential morpheme for both consonant final as well as vowel final stems. Though it is not explicated by the proponents, the potential morphology for consonant final verbs was presumably achieved by an equivalent process proposed in this paper, namely with *ra-nuki* '*ra*-deletion' and consonant cluster reduction: e.g. *yom-(r)are* → *yom-(r)e*.

As pointed out by Kinsui, since each hypothesis above has strengths as well as weaknesses both empirically and conceptually, a verdict has not been reached as to which one of the three competing hypotheses is superior. This makes me feel justified about my appeal to the last hypothesis, at least tentatively.

Moreover, viewing the hypotheses under discussion from a synchronic perspective of *ra-nuki kotoba* is quite interesting. In this regard, Kinsui (2002b) notes the following two points. First, if present day *ra-nuki kotoba* has any connection whatsoever with the potential morphology of consonant final verbs, the supposition of the diachronic morpheme *-e* – one of the central components of the dual origin hypotheses above – forces us to treat *-re* of *ra-nuki* for synchronic vowel final verbs as an instance of morphological reanalysis. Proponents of such reanalysis must come up with some independent evidence/motivation for it (cf., a similar problem encountered by the synchronic [r]-insertion of de Chene seen above). Neither conceptual nor empirical evidence/motivation has been offered.

Second and more significantly, after examining various properties of synchronic *ra-nuki kotoba*, Kinsui goes on to say that, among the three diachronic hypotheses above, the single origin hypothesis has the best chance of survival. He directs our attention to the fact that, when attaching to the *ka-hen* '*ka*-irregular' as well as consonant final verbs, both the potential morpheme *-(ra)re* and the passive morpheme *-rare* require the same stem-type, namely *mizen-kei* 'irrealis form': e.g., *k-o-re* 'can.come' (potential) and *yom-a-re* 'be.read' (passive). If there had been an independent morpheme like *-e* responsible for the potential morphology of consonant final verbs, why was it the case that it attached exclusively to the irrealis stem of the *ka-hen* verb? And was it a mere coincidence that both potential and passive morphemes were hosted by irrealis stems? Again there is no explanation available from the perspectives of the dual origin hypotheses. The irrealis combination is significant evidence pointing to the fact that the potentials (with *ra-nuki*) and the passives share a very close morphological affinity. Kinsui stresses the importance of investigating the (history of) potentials in conjunction with other (homomorphic) morphemes seen in (1) and (3) above.

Given the discussion above, it seems plausible to suppose the common potential morpheme *-rare* that already existed in the Edo period even before the new (current) consonantal potential pattern came into existence. Yuzawa (1970) indicates that pre-*ra-nuki* potential forms like *yom-(r)are* were already ambiguous in four ways (including potentiality but excluding spontaneous perception for this particular verb) just as in (3) above.[5] To arrive at the right surface morphology for both consonant final and vowel

final stems, all we have to suppose is deletion of segments (giving rise to *-are*, *-re*, and *-e*) for one reason or another such as economy, syllable structures, etc.

We can, then, tentatively consider the development of potential morphology for consonant final verb stems in the Edo period as a diachronic counterpart of synchronic (the 20–21st centuries) *ra-nuki kotoba*. It is intriguing to witness that virtually identical processes of morphological change can take place two/three centuries apart from each other with a demarcation line drawn by vowel vs. consonant finality of verb stems.

3. Proposal

So far the following partial functional explanation is widely assumed for the synchronic change in (1a) – and, presumably, for the result of the diachronic change in (3a) as well: (a) deletion of a syllable is economical (albeit minimally) in such a way that it reduces articulatory effort, and (b) *ra-nuki kotoba* sets apart the potentials, disambiguating at least one construction from the others, relieving the morpheme *-rare* of the hefty semantic burden of covering five separate constructions. In a nutshell, the morphological change enhances communicative efficiency. Though this functional scenario basically sounds reasonable, it gives rise to – but certainly does not offer any answers for – the following questions. Q_1: If reduction in articulatory effort and constructional disambiguation are the main concern, why doesn't the change affect *all* of the constructions seen in (1) (or diachronically in (3)), resulting in *complete* morphological diversity with five distinct shorter morphemes respectively? Q_2: Why does *ra-nuki* process apply (diachronically or synchronically) *selectively* to the potentials alone?

With regard to the morphological innovation in question, this paper suggests that, in a nutshell, linguistic cost is the least (i.e., most economical) if the potentials are singled out as the sole target of the morphological change rather than the other constructions employing the homomorphic suffixes. In other words, to achieve the desirable goal of constructional disambiguation (along with a little saving on articulatory effort), all we need to do is alter the morpheme *-rare* for the potentials *alone* (with regard to vowel final verb stems synchronically). Let me substantiate this in what follows.

3.1. *Balancing Economy and Opacity*

First, I am assuming that the change described above is indeed motivated by functional considerations. It seems to be reasonable (but by no means necessary) that language tends to minimize both articulatory effort and excessive (lexical) ambiguity in one way or another to render communication more efficient.

Japanese, in general, exhibits a strong tendency to reduce formal complexity, particularly length. As noted by Tsujimura (1996), for example, compounds are often reduced to series of two moraic units:[6] e.g. *gaikokugo daigaku* 'foreign language university' → *gai-dai* and numerous others. This alone, of course, is not evidence for the particular type of segmental reduction seen with *ra-nuki kotoba*.

Continuing with compound formation with two morphemes, we find instances where the first syllable of a second member is deleted, indicating the fact that morphology-driven elimination of a single syllable (or mora) is not uncommon. Kubozono (1995) gives examples like (4). (Though the motivation for syllable elimination here may be distinct from its counterpart for *ra-nuki*, what is significant is the identity of the formal mechanism involved.)

(4) a. gorira 'gorilla' + kuzira 'whale' → gozira 'Godzilla'
b. o 'tail' + sippo 'tail' → oppo 'tail'

Moreover, there are examples that seem to be similar to the type of morphological reduction as *ra-nuki*. The data in (5) (Kubozono (1999)) demonstrate that one syllable is eliminated between two morphemes (or the resulting forms are one syllable shorter than the originals whatever the process at work might be), presumably just to reduce articulatory effort without any semantic effect.

(5) a. tabe-te-ok-u 'eat-Completive-Pres' → tabe-tok-u
b. kai-te-ok-u 'write-Completive-Pres' → kai-tok-u
c. tabe-te-age-yoo 'eat-Benefactive-Vocative' → tabe-tage-yoo
d. kai-te-age-yoo 'write-Benefactive-Vocative' → kai-tage-yoo

What is shown in (6) is similar to (5) where the reduction of the mono-syllable morpheme [i] is observed between two morphemes.

(6) a. tabe-te-i-ru 'eat-Progressive-Pres' → tabe-te-ru
b. koware-te-i-ru 'break-Completive-Pres' → koware-te-ru

But (6) is particularly interesting with regard to *ra-nuki*. It is well know that, without the reduction of [i], activity verbs like *tabe* (7a, b) in this

construction can be ambiguous between progressive and completive readings (Tsujimura (1996)). However, with the reduced form lacking [i] in (7c), the interpretation is *exclusively* progressive (at least to my ear).

(7) a. Taroo-ga gohan-o ima tabe-te-i-ru.
Taroo-Nom meal-Acc now eat-Progressive-Pres
'Taroo is eating a meal now.'

b. Taroo-ga gohan-o moo (sudeni) tabe-te-i-ru.
Taroo-Nom meal-Acc already eat-Completive-Pres
'Taroo has eaten a meal already.'

c. Taroo-ga gohan-o ima/moo (sudeni)
Taroo-Nom meal-Acc now/already
tabe-te-ru.
eat-Progressive-Pres
'Taroo is eating a meal now/already.'
≠ 'Taroo has eaten a meal now/already.'

Thus, in addition to saving in articulatory effort, the reduction of the monosyllable morpheme [i] gives rise to a semantic narrowing when applied to activity verbs used in the *te-iru* construction (but not achievement verbs like *koware* 'break' which will be completive regardless of the application of [i]-deletion in this context). In this way, employing segmental/morphological reduction, either *ra-nuki* or progressive [i]-deletion, can be motivated on the basis of semantic disambiguation.

Second, though communicative efficiency is indeed a significant impetus for the change under consideration, *ra*-deletion involves an unpredictable alteration of a morphological shape. Such a process, in the absence of phonological predictability/regularity between the variants (i.e., [ra] and [Ø] are in free variation), necessarily causes a disturbance in an *idiosyncratic* and *unrecoverable* (lexical) sound-meaning relationship. As noted by Haiman (1983), structural reduction motivated by economy induces opacity. In this connection, it is interesting to note what Chomsky (1995) speaks of form-meaning relationships, mirroring Haiman's point: π (sound) and λ (meaning) of a linguistic expression (π, λ) satisfying output conditions respectively at PF and LF interfaces are required to be compatible. In particular, π and λ have to be based on the *same* lexical choices so that the correspondence between the two can be transparent.

The situation with *ra*-deletion would come under a similar requirement holding between the form (*-rare*) and meaning (potentiality) of a lexical

item (i.e., a derivational morpheme). An overt unpredictable (lexical or otherwise) change in a word/morpheme form via deletion, addition, etc., is opaque and costly, and will be minimized if possible. Nevertheless, if functional motivation (disambiguation and structural reduction to achieve enhanced communicative efficiency) is unsuppressable, an innovation can still take place provided that the change(s) would induce minimal opacity.

Specifically, there are four possibilities for segmental reduction involving the potential morpheme *-rare* that we ought to examine: (a) [are], (b) [re], (c) [e], and (d) [Ø]. Possibility (d) immediately disqualifies due to overwhelming opacity. Possibility (a) does not bring hardly any reduction in articulatory effort. It appears that at least one *full* syllable needs to be eliminated as seen from (5) and (6) above. Possibility (c) does not hold up since, according to Kubozono (1999), the basic syllable in Japanese (or universally) is of the type CV *not* V. Kubozono points out that children acquire CV syllables *prior to* V syllables or any other types of syllables cross-linguistically, and language impaired patients lose V syllables *before* CV syllables disappear from their speech. Also, in her cross-linguistic comparisons of syllable types, Blevins (1995) lists several languages (Hua, Cairene, Sedamg, Klamth, Totonac) as missing V syllables but there is *no* language that is reported to lack CV syllables. These facts seems to punctuate the fundamentality of CV syllables.[7] A candidate without any problem is possibility (b) which is the actual reduced potential morpheme.[8]

3.2. *Conspiracy of Grammar and Function*

The assumptions given in the previous subsection offer justification for the fact that it is *only one* construction out of five that is affected by the change. This answers Q_1 raised at the beginning of this section. Affecting *only one* construction (i.e., a single morpheme-meaning relationship expressing potentiality) is the *least* costly/opaque choice to make, when necessitated by functional considerations. However, an answer to Q_2 above – the reason why it is the potentials that *selectively* undergo the change – is not an automatic consequence of the functional assumptions above.

There is, however, an additional factor that turns out to play a significant role in providing a clue to Q_2, namely grammar-function interactions. With regard to grammatical aspects of Japanese, there are *independent* properties that already disambiguate some (but importantly *not all*) of the different constructions in (1) above. ((1) is repeated below as (8) with minimal changes reflecting alternative case markers.)

First, the spontaneous emotion/perception (8e) is unique since only verbs

of emotion or perception such as *nozom* 'hope' or *kanzi* 'feel' can be used with it, hence it is lexical semantically disambiguated from the rest.

Second, the honorifics (8d) are distinct from the passives (8b, c) and *partially* distinct from the potentials (8a) in that they never have a dative NP-*ni* agent.

(8) a. Taroo-ga/-ni sakana-ga/-o tabe-(ra)re-ru.
Taroo-Nom/-Dat fish-Nom/-Acc eat-Pot-Pres

'Taroo can eat the fish.' [potential] (N.B.: SUBJ-*ni* is ok only with OBJ-*ga*)

b. Sakana-ga Taroo-ni tabe-rare-ru
fish-Nom Taroo-Dat eat-Dir.Pass-Pres

'The fish is eaten by Taroo.' [direct passive]

c. Hanako-ga sakana-o/*-ga Taroo -ni tabe-rare-ru.
Hanako-Nom fish-Acc/-Nom -Dat eat-Adv.Pass-Pres

'Hanako is adversely affected by Taroo's eating the fish.' [adversity passive]

d. Sensei-ga/*-ni sakana-o/*-ga tabe-rare-ru.
teacher-Nom/-Dat fish-Acc/-Nom eat-Hon-Pres

'The teacher (honored) eats the fish.' [honorific]

e. Watasi-ni(-wa) hissya-no seii-ga
I-Dat(-Top) author-Gen sincerity-Nom

kanzi-rare-ru.
feel-Spont.Emot-Pres

'I sense the author's sincerity.' [spontaneous emotion/perception]

Third, the addition of the extra adversity subject NP *Hanako-ga* (which does not fill any semantic role of the predicate *tabe* 'eat' proper)[9] and/or the retention of accusative Case assignment (impossible for the direct passives) discriminates the adversity passives (8c) from the direct passives (8b) and the potentials (8a).

At this point the remaining constructional ambiguities – modulo the choice of the case markers – are: on one hand the direct passives (8b) vs. the potentials (8a) when the agent *Taroo* is marked by the dative *-ni* and the patient *sakana* 'fish' by the nominative *-ga*, and on the other hand the honorifics (8d) vs. the potentials (8a) when the agent *Taroo* or *sensei* 'teacher' is marked by the nominative *-ga* and the patient *sakana* by the accusative *-o*. But, thanks to *ra-nuki*, the potentials are distinguished from

both the direct passives and the honorifics morphologically. Since the direct passives and the honorifics have already been sorted apart, each construction is uniquely identified either by morphology or other grammatical factors (lexical properties inclusive).

It is not difficult to see that regardless of which construction (except for the potentials) is first affected by some change in its verbal morphology, the potentials *must* be teased apart *morphologically* from the direct passives and/or the honorifics at one point or another. Moreover, as shown above, an attempt to disambiguate the five constructions in (8) by appealing to morphology (again excluding the potentials) is *superfluous* since syntactic and/or lexical semantic properties already exist that *independently* (i.e., free of any additional linguistic cost) achieve such a task. Then, it turns out that the morphological change via *ra-nuki* effected *exclusively* for the potentials is the *most* economical choice to make when disambiguating (8). Viewed this way, language change is at a crossroads of function and grammar – the balancing between the two is achieved by the concept of economy.

One of the reviewers is of the opinion that the remaining constructional ambiguity (without *ra-nuki*) described above is not so much of a problem, given the possibility that context of actual use would dissolve such ambiguity effectively. Performance-wise, this sounds quite plausible. Competence-wise, however, the remaining ambiguity persists and remains unescapable. Though I will not attempt to settle the competence vs. performance dispute here, I wish to point out the following. Suppose that dissolving of the constructional ambiguity (i.e., enhanced communicative efficiency) were not the motivation behind the innovation in question; the only remaining conceivable reason for it would be analogy (and analogical leveling). But, as I pointed out above, an analogy-oriented explanation must be augmented with a solid conceptual foundation to be a viable explanatory alternative to the present proposal. Meanwhile, given the absence of an explicit and comprehensive theory of analogy, the view expressed in this paper is worthy of serious consideration.

4. Closing Remarks

Let me close by summarizing the current proposal and pointing out the implications of it. I have shown that a seemingly peculiar pattern of functionally motivated morphological change (*ra-nuki*) can be explained as a *necessary* and *automatic* consequence of an interaction of independent grammatical properties and functional considerations. The interaction is crucially mediated by the concept of economy. Such an analysis, then,

suggests that economy should be given the status of being a significant linguistic (not merely syntactic) principle that takes into account all the relevant independently available linguistic (both formal and functional) factors. It has been demonstrated that functionally driven morphological disambiguation can be achieved, as envisaged by Newmeyer (1998), without giving up the essential core of a generative framework. Generative grammar of Japanese offers all the relevant syntactic/semantic characteristics of the five constructions in (8) involving the homomorphic suffix *-rare*. When motivated by functional factors such as economy and constructional disabiguation, a morphological change zeros in on the potentials taking full advantage of the generative characteristics. Moreover, supposing a close interaction between formal and functional factors is unavoidable, if an adequate account is to be furnished for the selective innovation in the potentials vis-à-vis other superficially similar constructions.

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Notes

[1] For example, assimilation like palatalization (e.g. /dɪd yu/ → [dɪǰ yu] in *did you*) can be seen as economization in articulatory gestures. Economy here corresponds to what Zipf (1935) calls "principle of least effort." With the advent of Minimalism in generative grammar (Chomsky (1995)), the concept of "economy" – with ancillary/related notions like "last resort," "procrastinate," "optimality," etc. – is in the limelight. The notion of economy envisaged by Chomsky, however, is restricted to a syntactic domain and can be viewed as a sub-case of the general usage here.

[2] With respect to *ra*-deletion for vowel final verb stems, there are different opinions as to what is the exact underlying form of the suffix in question. Some (e.g., de Chene (1987)) suppose *-e* and [r]-insertion and others (e.g., Kuroda (1960)) *-rare* and [ra]-deletion. Along

with Kuroda, I assume that *-rare* is the underlying form in this paper. An argument against the former is given in note 5 below. I will indicate morpho-phonological adjustments informally with parentheses or brackets when necessary.

[3] Jinnouchi reports synthesized results of several nation-wide sociolinguistic surveys concerning the innovation (in the 1980–90s), such as the surveys carried out by the Agency for Cultural Affairs. For descriptions of the geographical distribution of the relevant data as well as more detailed generation-wise comparisons regarding the usage of *ra-nuki kotoba*, see Inoue (1998).

[4] In addition to the arbitrary nature of [r]-insertion, there is an additional shortcoming in de Chene's synchronic account. The account proposes a rule like: $\emptyset \rightarrow r / V]_{VS}$ _ V. This says that [r] is inserted between vowels that sandwich a boundary of a "verb stem" (VS). But, as noted by de Chene, there are counter examples like *mi-e-ru* 'is.in.a.visible.state' (with no [r]-insertion before *-e*) and *nomi-akas-u* 'drink.and.spend.all.night' (with no [r]-insertion before *akas*). For these de Chene appeals to a dubious distinction between "stem" and "root" on the basis of the opposition between "derivational" vs. "non-derivational" affixes. According to de Chene, forms like *mi-e* and *nomi-akas* are not "verbal stems" but a "verbal root" which renders them immune to [r]-insertion. The reason is that *-e* and *akas* are "derivational" morphemes. But this story would be plausible only to the extent that de Chene can adequately distinguish what he considers to be derivational and non-derivational. Bound morphemes like *-e* and free morphemes like *akas* count as derivational rather non-uniformly but *-(r)are* and *-(s)ase* would not. This sounds totally ad hoc – there is no independent evidence offered.

[5] Curiously enough, there are a limited number of dialects of Shikoku (Kochi and Ehime Prefectures in particular) that still retain the original potential morpheme *-(r)are even* for consonant final verb stems (Shibata (1988)). In these dialects, for example, the potential forms of consonant final verbs like *hair* 'enter', *ok* 'put', *tor* 'take' are *hair-are*, *ok-are*, *tor-are*, respectively (cf., the standard counterparts like *hair-e*, *ok-e*, *tor-e*). These dialects are exceptional in that they rejected the morphological innovation motivated by economy (detailed below) for some unknown reason.

[6] In Japanese (C)V, /n/, and the first half of a geminate can be a mora.

[7] From a phonetic perspective, Shirota (1993) – another proponent of the basic CV syllable in Japanese – notes that what appears to be simply V syllables often do have a glottal stop before them (especially under careful pronunciation). Gravitation towards CV syllables is evidenced here as well.

[8] What remains to be explored is the factor for the deletion of the first syllable (*not* the second one) of the morpheme *-rare*. It may be that, as suggested by Peter Sells (p.c.) deleting the first syllable [ra] creates a well-formed (derived) verb like *tabe-re* ending in [e], while deletion of the second one [re] gives rise to an ill-formed verb like **tabe-ra*. Lexically and synchronically, Japanese regular verbs end either in [e]/[i] or a consonant.

[9] For the purpose of this paper, I remain neutral about how such addition is carried out. It can be accomplished by a lexical process that (a) adds the adversative passive morpheme to the stem *tabe* 'eat' and (b) augments the argument structure of the verb with a new argument (see Fukushima (1999)). Alternatively, as done in various transformational approaches the adversity passive morpheme *-rare* can be considered to evoke S-embedding and takes an (adversity) subject of its own.

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