How to Build and Update Fuzzy Phrase Structure for a Head-final Language Incrementally: The Syntax of [V], [N] & [V or N][1]

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1. Introduction: The Syntax of [V], [N] & [V or N]

In this paper as well, I adopt a COMMON SENSE VIEW OF LANGUAGE: namely, SYNTAX is a DYNAMIC system in our mind which processes linguistic information from left to right incrementally (Kempson et al. 2001, Cann et al. 2005, among others; cf. Chomsky 1965, 1981, 1986, 1995, etc.). In so doing, here, I attempt to show: (i) how for HEAD-FINAL languages such as Japanese, syntax constructs and updates fuzzy linguistic representation step by step, by parsing a string of words in the course of left to right sentence processing; furthermore, (ii) Japanese syntax appears to be very well designed for such dynamic language use (cf. Hoshi 2021a–c, 2022a–b, among others).

It has been well established, in my view, that HEADS play significant roles in language: (i) PREDICATIVE HEADS provide syntax with important information as to how syntax should construct phrase structure for semantic interpretation; on the other hand, (ii) FUNCTIONAL HEADS, such as case or tense markers, provide significant information for syntactic licensing. In strictly head-final languages such as Japanese, however, such heads necessarily come last. A question thus arises as to how for such head-final languages, syntax parses a string of words, building phrase structure for semantics and carrying out syntactic licensing step by step in the course of left to right information processing.

To attempt to answer this question, here, as in Hoshi (2021a–c, 2022a–b, etc.), I adopt (1), which I believe to be the spirit of Dynamic Syntax (cf. Kempson et al. 2001, Cann et al. 2005, etc.; cf. Phillips 1996, 2003, etc.):

(1) While parsing a string of words one by one from left to right, syntax keeps hypothesizing upcoming linguistic representations together with their LABELS, which must subsequently be licensed.

Here as well, for Japanese, i.e. a typical head-final language, I adopt the hypotheses in (2a–b), where CASE MARKERS play a central role in building FUZZY linguistic representation.

(2) In the course of left to right sentence processing,
    a. case markers such as *-ga*, *-o*, or *-no* in Japanese help syntax to hypothesize upcoming fuzzy phrase structures together with their CATEGORIAL LABELS, which must subsequently be UPDATED (cf. Kempson & Kiaer 2010, etc.; cf. Saito 1985);
    b. such case markers themselves must also be licensed later by a variety of phrase-final HEADS.

To be more precise, as in Hoshi (2022a–b), I adopt (3a–c) for INCREMENTAL CATEGORIAL LABELING, assuming that fuzzy phrase structures constructed by case markers in accordance with (3a–c) are updated later by phrase-final updaters, i.e. predicative heads:

(3) a. Case markers such as *-ga* or *-o* help syntax to hypothesize that phrases such as NP-*ga* or NP-*o* are immediately dominated by a fuzzy [?V] projection.[2]
    b. The genitive case marker *-no* helps syntax to hypothesize that genitive case marked phrases such as PP-*no* or CP-*no* are immediately dominated by a fuzzy [?N] projection.
    c. The genitive case marker *-no* helps syntax to hypothesize that NP-*no* is immediately dominated by a fuzzy [?V or ?N] projection.[3]
etc.

I also adopt (4a–d) for INCREMENTAL CASE LICENSING:

(4) The nominative case *-ga* and the genitive case *-no* are structural Cases in Japanese, whereas (in most

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[2] Kempson & Kiaer (2010) claim that the nominative case maker *-ga* in Japanese always marks the external argument within a predicate phrase. I disagree with this claim, and I adopt (3a), whereby not only an external argument, but also an internal argument can be attached by the nominative case *-ga* in Japanese (see 8b, 10c, 15b, 17c, 25, 26d, 34 & 35d).

[3] The assumption in (3c) is adopted, because in Japanese, a genitive case marked NP can be licensed either by a N projection (see 4b) or a V/T projection (see 4c).

cases,)[4] the accusative case -*o* and the dative case -*ni* are inherent cases:

   a. a nominative case marked NP, NP-*ga*, is licensed, once it is c-commanded by T or temporal nouns such as [$_N$ *ori*] 'occasion';

   b. a genitive case marked phrase, XP-*no*, is licensed, once it is immediately dominated by an N projection;

   c. either a nominative case marked NP or a genitive case marked NP is licensed, once it is c-commanded by adnominal T (cf. Saito 2001, p. 271)[5] ;

   d. the accusative case -*o* and the dative case -*ni* are inherent cases linked to particular semantic arguments of a predicate.[6]

In this paper, as in Hoshi (2021a–b, 2022a–b, etc.), I dissociate morphology from syntax, revising the proposal as below:[7][8]

		morphological labels	*chameleon-like* *syntactic label*
(5)	a. adjectival noun		
	(*kirei* 'beautiful'):	AN	[V or N]
	b. adjective		
	(*utukusi* 'beautiful'):	A	[V or N]
	c. verbal noun		
	(*syokuzi* 'eat'):	VN	[V or N]
	d. verb		
	(*tabe* 'eat'):	V	[V or N]
			(cf. Hoshi 2021a–b, 2022a–b, etc.)

Under the proposal in (5a–d), the four predicates in Japanese, i.e. adjectival noun, adjective, verbal noun, and verb, have distinct morphological labels, viz. AN, A, VN and V (cf. Kageyama 1982, 1993, Ito & Sugioka 2002, etc.). Importantly, however, all these predicates have the identical, FLEXIBLE syntactic label, [V or N]. The proposals in (3a–c) and (5a–d) thus imply: (i) initially, a case marker in Japanese helps syntax to build fuzzy (WEAK), [?V], [?N] or [?V or ?N] projection without its predicative head (see 3a–c); (ii) at a later point of left to right sentence processing, those four predicative heads come and enrich such weak phrase structure, by providing in a flexible manner a syntactic label, i.e. [V], [N] or [V or N], in accordance with structural context (see 5a–d). To put it differently, under the proposal, first, headless [?V], [?N], or [?V or ?N] projections are built by Japanese case markers based on (3a–c); later, the CHAMELEON-LIKE syntactic category, [V or N], in (5a–d) enters the empty head position of such a fuzzy projection, by choosing an appropriate syntactic label, i.e. [V], [N], or [V or N], in accordance with structural environments.[9]

Finally, in this paper, I assume the following three types of SYNTACTIC C-SELECTION such as the ones in (6a–c).[10][11]

(6) In the syntactic component,

   a. Lexical items which c-select [V] are: tense markers such as [$_T$ *i*] or [$_T$ *ru*], light verbs

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4   The reader is referred to Abe (2015) for this qualification.

5   In this paper, I adopt (4c). It might, however, be the case that T licenses the nominative case -*ga* optionally; and the adnominal feature on T optionally licenses the genitive case -*no*, triggering 'nominative-genitive conversion' in Japanese (cf. Hiraiwa 2001, etc.; cf. Kuroda 1988, 1992, etc.).

6   Given Chomsky (1995) type 'Configurational Theta Theory,' (4d) implies that the semantics of a predicate forces accusative case marked NPs and dative case marked NPs to appear at their fixed structural positions by the end of left to right sentence processing (cf. Saito's (1985, 1989) analysis of scrambling in Japanese).

7   In Hoshi (2021a–b, 2022a–b, etc.), I suggest that the four predicates in (5a–d) all have the fuzzy (weak) syntactic label [?V or ?N], and assume both 'c-selection' and 'c-validation.' In this paper, however, I adopt the more explicit (enriched) syntactic label [V or N] for all these predicates in Japanese, assuming only 'c-selection,' consequently eliminating 'c-validation.' For proposals concerning categories in Japanese, the reader is referred to Matsushita (1930), Martin (1975), Kageyama (1982, 1993), Miyagawa (1987), Ito & Sugioka (2002), Kageyama & Kishimoto (2016), Kishimoto & Uehara (2016), Ueno (2016), Yuhara (2021), among others.

8   The proposal in (5a–d) implies that morphology and syntax are separate components of grammar; and morphology cannot be reduced to syntax (cf. Jackendoff 1997, 2003, Culicover & Jackendoff 2005, etc.).

9   It must be stressed here that theoretically, the proposed flexible syntactic category with a disjunction of two choices, i.e. [V or N], in (5a–d) is totally different from a 'categoryless root' proposed by Distributed Morphology (Halle & Marantz 1993, Harley & Noyer 1999, Harley & Noyer 2000, etc.), by Exo-skeltal Model (Borer 2003, etc.) or by Asymmetrical Morphology (Di Sciullo 2005) (cf. Lieber 2006). Under the proposal, unlike a categoryless root, (i) the four predicates in Japanese are stored with the syntactically specified categorial label [V or N] in the lexicon; (ii) the final nature of the syntactic category in (5a–d) is not determined by invisible functional categories, *v* or *n*, by means of merge, but is determined by the flexible [V or N] category itself in accordance with structural context, later confirmed by visible syntactic heads through syntactic c-selection, incrementally in the course of left to right processing of a string of words (see 6a–c) (cf. Sugioka 2009, p. 92, 27b–d).

10 Sugioka (2009, p. 92, 27b–d) first proposes that a temporal affix in Japanese, i.e. -*tyuu* 'middle/during,' turns any part of the projection of a verbal noun into an N projection by means of its syntactic c-selection. The proposal based on (3a–c), (5a–d) and (6a–c) heavily relies on her SELECTION-BASED LABELING analysis.

11 I assume that various types of c-selection like the ones in (6a–c) are stored in the lexicon, and that such requirements play significant roles in Japanese syntax. The lexical specifications in (6a–c), however, appear quite complex, and a question arises as to whether we can derive such c-selectional restrictions from something deep in language. (The reader is referred to Sugioka (2009) for her valuable attempt to derive them from semantics.) At this stage, however, I have no idea if it is possible at all to derive all those lexical complexities from semantics completely, or exactly how we should do so. The lexicon might indeed be a component where we store such complex information in some intriguing ways (cf. Jackendoff 1997, 2003, Culicover & Jackendoff 2005, etc.). In any case, I leave this very important question for future research.

such as [$_V$ *su*] 'do' or [$_V$ *deki*] 'can,' verbs like *(r) are* 'can,' temporal nouns such as [$_N$ *ori*] 'occasion' or [$_N$ *ue*] 'upon,' [$_{V\,or\,N}$ *tari*] 'and also,' [$_V$ *gati*] 'tending,' [$_V$ *sugi*] 'over,' [$_N$ *koto*] 'fact [+IMPERATIVE],' [$_{V+T}$ *da*](, which morphologically c-selects AN), etc.

b. Lexical items which c-select [N] are: nominal suffixes such as [$_N$ *kata*] 'way' or [$_N$ *sa*] '-ness', case markers (obligatory in most cases), etc.

c. Lexical items which c-select [V or N] are: temporal affixes such as (-)[$_N$ *tyuu*] 'middle/during,' [$_N$ *gati*] 'tending,' [$_N$ *sugi*] 'over,' etc.

(cf. Hoshi 2021a–c, 2022a–b,; cf. Sugioka 2009, p. 92, 27b–d)

In this paper, I try to demonstrate that as predicted by (3a–c), (4a–d), (5a–d), and (6a–c), the three major categories, i.e. [V], [N] and [V or N], play significant roles in Japanese syntax. Developing Hoshi's (2014, 2019a–b, 2020a–b, 2021a–c, 2022a–b, etc.) analysis further, in the following sections, I propose a DYNAMIC SYNTACTIC, i.e. NON-TRANSFORMATIONAL or NON-MOVEMENT, analysis for a variety of constructions which involve adjectival noun (AN) (see §2), adjective (A) (see §3), verbal noun (VN) (see §4), and verb (V) (see §5).[12] In section 6, I conclude the discussion in this paper.

2. THE SYNTAX OF ADJECTIVAL NOUN (AN)

As is well known,

(7) [$_{AN}$ nigate] -[$_V$ na]
　　　poor at -COP

the adnominal copula -*na* 'be' morphologically c-selects adjectival nouns (ANs) such as *nigate* 'poor' (Kageyama 1982, 1993, Ito & Sugioka 2002, among others).

Observe now that both (8a) and (8b) are well-formed.

(8) a. suugaku-**no** [$_{AN}$ nigate]-**o**　(kaisyoo-si-yoo).
　　　math -GEN　　　poor　-ACC (overcome-let's)
　　　'(Let's overcome) (your) weakness of math.'

b. suugaku-**ga** [$_{AN}$ nigate]-**da**.
　　　math -NOM　　　poor　-COP
　　　'(I'm) poor at math.'

In (8a), the AN *nigate* is attached by the accusative case marker -*o*, whereas in (8b), the AN is attached by the

conclusive form of the copula, -*da*. The complement of the AN is *suugaku* 'math,' which is marked by the genitive case -*no* in (8a), but by the nominative case -*ga* in (8b). Under the proposal based on (3a–c), (4a–d), (5a–d), and (6a–c), these properties of (8a–b) are accounted for in syntax as follows:

In (8a), *suugaku* 'math' comes first, which is attached by the genitive case marker -*no*. Hence, as illustrated in (9a),

(9) a. [$_{?VP\,or\,?NP}$ suugaku -?no [*e*]]
　　b. [$_{VP\,or\,NP}$ suugaku　-?no [$_{V\,or\,N}$ **nigate**]]
　　c. [$_{NP}$ suugaku-**no** [$_N$ **nigate**]]-**o**

(3c) forces syntax to create the fuzzy [?VP or ?NP] projection without its head, accommodating *suugaku* within the [?VP or ?NP] shell structure (cf. Larson 1988; cf. Koizumi 1995, Takano 2002, etc.).[13] Then, the predicate *nigate* comes; as shown in (9b), given the fuzzy [?VP or ?NP] projection, *nigate* chooses its [V or N] label in accordance with the phrase structure, entering the empty head position (see 5a). Finally, as in (9c), the accusative case marker -*o* c-selects and confirms the N projection, consequently licensing the genitive case -*no* (see 6b & 4b).

In (8b), on the other hand, *suugaku* 'math' comes first, which is attached by the nominative case marker -*ga*. Hence, as shown in (10a),

(10) a. [$_{?VP}$ suugaku -?ga　[*e*]]
　　b. [$_{VP}$ suugaku -?ga　[$_V$ **nigate**]]
　　c. [$_{(V+T)P}$ [$_{VP}$ suugaku -**ga**　[$_V$ **nigate**]] [$_{V+T}$ **da**]]

(3a) forces syntax to build the fuzzy ?VP projection with an empty head position. As in (10b), the adjectival noun *nigate* comes next, selecting the syntactic label V for the structure, initially created by the nominative case -*ga* (see 5a). Last, as illustrated in (10c), there emerges the fused V+T head, i.e. the conclusive copula -*da* 'is,' and the copula syntactically c-selects and confirms the syntactic V feature of the AN *nigate* (see 6a). Consequently, as in (10c), the nominative case -*ga* is licensed by the tense feature of the copula (see 4a).

Observe finally the examples in (11a–b). (11a) is unacceptable, whereas (11b) is acceptable. Notice that in (11a), the AN *nigate* is morphologically attached by the conclusive form of the copula -*da*; and the complement of the AN, i.e. *suugaku* 'math,' is attached by the genitive case -*no*.

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[12] Under the strict version of Dynamic Syntax (Kempson et al. 2001, Cann et al. 2005, etc.), syntax parses a string of words from left to right incrementally, directly generating semantic representation without any case or categorial features. In this paper, I argue that while processing a string of words from left to right step by step, syntax generates linguistic representation with not only semantic features, but also syntactic features such as case or categories like [V], [N] or [V or N].

[13] Representations such as (9a) proposed in this paper are very fuzzy in that such structures contain multiple 'underspecified' nodes. Under the strict version of Dynamic Syntax, however, there can be only one 'unfixed' tree node of a type at a time in any process of tree growth (Kempson & Kiaer 2010, p. 161, among others). This very strict restriction imposed by Dynamic Syntax appears incompatible with many of the structures suggested in this paper.

(11) a. *suugaku-**no** [$_{AN}$ nigate]-**da**.
math-GEN   poor-COP
'(I'm) poor at math.'

    b. suugaku-**no** [$_{AN}$ nigate]-**na** gakusee
math-GEN   poor-COP   student
'a student who is poor at math.'

In (11b), on the other hand, the adjectival noun, *nigate*, is attached by the adnominal form of the copula -*na*; and *suugaku* is marked by the genitive case -*no*. The contrast between (11a) and (11b) is accounted for by (3a–c), (4a–d), (5a–d), and (6a–c) as below.

    In (11a), [$_{NP}$ *suugaku*]-*no* 'math-GEN' comes first. Hence, as illustrated in (12a),

(12) a. [$_{?VP\ or\ ?NP}$ suugaku-?no [*e*]]
    b. [$_{VP\ or\ NP}$ suugaku-?no [$_{V\ or\ N}$ nigate]]
    c. [$_{(V+T)P}$ [$_{VP}$ suugaku-*no [$_{V}$ nigate]] [$_{V+T}$ **da**]]

given (3c), syntax is forced to create the fuzzy [?VP or ?NP] projection without its head, accommodating *suugaku-no* as one of its arguments. Then, in accordance with the structure built in (12a), the AN *nigate* chooses its flexible syntactic label [V or N], and enters the empty head position in (12b) (see 5a). Finally, as in (12c), the conclusive form of the copula, [$_{V+T}$ *da*], syntactically c-selects the V projection (see 6a). In (12c), however, there is no way for the genitive case -*no* on the complement *suugaku* 'math' to be licensed (see 4b–c). (11a) thus results in ungrammaticality.

    In (11b), on the other hand, *suugaku* 'math' is attached by the genitive case -*no*; but *nigate* 'poor' is morphologically attached by the adnominal form of the copula -*na*. Syntax first parses *suugaku-no nigate* as in (13a–b), which parallels (12a–b) completely.

(13) a. [$_{?VP\ or\ ?NP}$ suugaku-?no [*e*]] (= 12a)
    b. [$_{VP\ or\ NP}$ suugaku-?no [$_{V\ or\ N}$ **nigate**]] (= 12b)
    c. [$_{(V+T)P}$ [$_{VP}$ suugaku-**no** [$_{V}$ **nigate**]]
        [$_{V+T(ADN)}$ **na**]] (cf. 12c)
    d. [$_{NP}$ [$_{(V+T)P}$ [$_{VP}$ suugaku-**no** [$_{V}$ **nigate**]]
        [$_{V+T(ADN)}$ **na**]] [$_{NP}$ gakusee]]

At the stage of the parsing process in (13c), the adnominal copula, i.e. [$_{V+T(ADN)}$ *na*], syntactically c-selects and licenses the V projection (see 6a); furthermore, the adnominal feature on the copula [$_{V+T(ADN)}$ *na*] licenses the genitive case -*no* on the complement *suugaku-no* 'math-GEN' (see 4c). Finally, there comes the relative head, [$_{NP}$ *gakusee*], licensing the adnominal feature on the copula, i.e. [$_{V+T(ADN)}$ *na*]. The well-formedness of example (11b) is thus explained by the proposal based on (3a–c), (4a–d), (5a–d), and (6a–c).

3.   THE SYNTAX OF ADJECTIVE (A)

As below,

(14) [$_{A}$ hosi]-[$_{T}$ i]
      want -PRE

one of the present tense markers in Japanes, i.e. -*i*, morphologically c-selects adjectives (As) such as *hosi* 'want' (Kageyama 1982, 1993, Ito & Sugioka 2002, among others).

    Observe now that (15a–b) are both well-formed.

(15) a. mizu-**no** [$_{A}$ hosi]-**sa**(-o) …..
      water-GEN   want-ness(-ACC) …..
      'the degree of wanting of water'
    b. mizu-*ga* [$_{A}$ hosi]-**i**.
      math-NOM   want-PRES
      '(I) want water.'

In (15a), the adjective *hosi* is attached by the nominal suffix -*sa* (Kageyama 1982, 1993, Ito & Sugioka 2002, etc.); however, in (15b), *hosi* is attached by the present tense marker -*i*. The complement of the adjective, i.e. *mizu* 'water,' is marked by the genitive case -*no* in (15a), but is attached by the nominative case -*ga* in (15b). Under the dynamic syntactic analysis proposed in this paper, these properties of (15a–b) are accounted for in syntax as below.

    In (15a), *mizu* 'water' comes first, which is attached by the genitive case marker -*no*. Hence, as shown in (16a),

(16) a. [$_{?VP\ or\ ?NP}$ mizu-?no [*e*]]
    b. [$_{VP\ or\ NP}$ mizu-?no [$_{V\ or\ N}$ **hosi**]]
    c. [$_{NP}$ [$_{NP}$ mizu-**no** [$_{N}$ **hosi**]] [$_{N}$ **sa**]]

(3c) forces syntax to build the headless [?VP or ?NP] projection, accommodating *mizu* within the [?VP or ?NP] shell structure. There, then, comes the predicate *hosi*; as illustrated in (16b), given the fuzzy [?VP or ?NP] projection, *hosi* chooses its flexible [V or N] label in accordance with the syntactic structure, moving itself into the empty head position (see 5b). Last, as in (16c), the nominal suffix -*sa* syntactically c-selects and confirms the N projection, consequently licensing the genitive case -*no* (see 6b & 4b). Thus, the proposed analysis implies that the nominal suffix -*sa* '-ness' in Japanese displays an important mismatch between morphological and syntactic selection: in morphology, the nominal suffix -*sa* c-selects adjective (A) (see 15a; cf. 14), but in syntax, -*sa* c-selects noun (N) (see 16c).

    On the other hand, in (15b), *mizu* 'water' comes first, attached by the nominative case -*ga*. Hence, as illustrated in (17a),

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(17) a. [$_{?VP}$ mizu-?ga [e]]
      b. [$_{VP}$ mizu-?ga [$_V$ **hosi**]]
      c. [$_{TP}$ [$_{VP}$ mizu-**ga** [$_V$ **hosi**]] [$_T$ **i**]]

(3a) forces syntax to build the fuzzy ?VP projection with an empty head position. As in (17b), the adjective *hosi* comes next, choosing the syntactic label V for the structure, built by the nominative case *-ga*; then, the predicate [$_V$ *hosi*] enters the empty head position (see 5b). Last, as illustrated in (17c), there comes the present tense marker, i.e. *-i*; and the functional head [$_T$ *i*] c-selects and confirms the V projection, consequently licensing the nominative case *-ga* on the complement *mizu* 'water' by c-command (see 4a).

Consider finally the examples in (18a–b). (18a) is ill-formed, whereas (18b) is well-formed. Notice that in (18a), the adjective (A) *hosi* is morphologically attached by the conclusive present tense marker *-i*; and the complement of the adjective, i.e. *mizu*, is attached by the genitive case *-no*.

(18) a. *mizu **-no** [$_A$ hosi] -i.
          water -GEN   want -PRES(CONCL)
          '(I) want water.'
      b. mizu **-no** [$_A$ hosi] **-i**   gakusee
          water -GEN   want -PRES(ADN)   student
          'a student who wants water.'

In (18b), on the other hand, the adjective, *hosi*, is attached by the adnominal present tense marker *-i*;[14] and *mizu* is by the genitive case *-no*. The difference between (18a–b) is accounted for by (3a–c), (4a–d), (5a–d), and (6a–c) as follows.

In (18a), [$_{NP}$ *mizu*]-*no* 'water-GEN' comes first. Hence, as illustrated in (19a),

(19) a. [$_{?VP or ?NP}$ mizu-?no [e]]
      b. [$_{VP or NP}$ mizu-?no [$_{V or N}$ **hosi**]]
      c. [$_{TP}$ [$_{VP}$ mizu-***no** [$_V$ **hosi**]] [$_T$ **i**]]

given (3c), syntax is forced to create the fuzzy [?VP or ?NP] projection without its head, accommodating *mizu-no* as one of its arguments. Then, in accordance with the structure built in (19a), the A *hosi* chooses its fuzzy syntactic label [V or N], and moves into the empty head position in (19b) (see 5b). Finally, as in (19c), the present tense marker, [$_T$ *i*], syntactically c-selects and confirms the V projection (see 6a). In (19c), however, the genitive case *-no* on the complement *mizu* cannot be licensed in any proper way (see 4b–c). (18a) thus results in unacceptability.

In (18b), on the other hand, *mizu* 'water' is attached by the genitive case *-no*; but the adjective *hosi* 'want' is by the adnominal present tense *-i*. Syntax parses the

first part of the string of words, i.e. *mizu-no hosi*, as in (20a–b), exactly in the same way as in (19a–b).

(20) a. [$_{?VP or ?NP}$ mizu-?no [e]] (= 19a)
      b. [$_{VP or NP}$ mizu-?no [$_{V or N}$ **hosi**]] (= 19b)
      c. [$_{TP}$ [$_{VP}$ mizu-**no** [$_V$ **hosi**]] [$_{T(ADN)}$ **i**]] (cf. 19c)
      d. [$_{NP}$ [$_{TP}$ [$_{VP}$ mizu-**no** [$_V$ **hosi**]] [$_{T(ADN)}$ **i**]]
          [$_{NP}$ gakusee]]

At the point of the parsing process in (20c), the tense feature on the adnominal present tense marker, i.e. [$_{T(ADN)}$ *i*], syntactically c-selects and licenses the V projection (see 6a); furthermore, the adnominal feature on the copula [$_{T(ADN)}$ *i*] licenses the genitive case *-no* on the complement *mizu* 'water' (see 4c). In (20d), the adnominal feature on the present tense marker *-i* is checked by the following relative head, [$_{NP}$ *gakusee*] 'student.' The well-formedness of example (18b) is thus accounted for by the proposal based on (3a–c), (4a–d), (5a–d), and (6a–c).

4. THE SYNTAX OF VERBAL NOUN (VN)
As illustrated in (21a–b),

(21) a. [$_{VN}$ zyooto]-[$_V$ deki](-[$_T$ ru])
          giving-can(-PRES)
      b. [$_{VN}$ zyooto]-[$_V$ su](-[$_T$ ru])
          giving-do(-PRES)

the verbs, i.e. *deki* 'can' and *su* 'do,' morphologically c-select verbal nouns (VNs) such as *zyooto* 'giving' (Kageyama 1982, 1993, Ito & Sugioka 2002, among others).

Observe now the examples in (22a–b). Both of the examples are well-formed.

(22) a. toti-**no** [$_{VN}$ zyooto]-**ga**   (syuuryoo-si-ta.)
          land-GEN   giving-NOM   (finishing-do-PST.)
          'Giving of land (finished.)
      b. toti-**o**   [$_{VN}$ zyooto]-**deki-ru**.
          land-ACC   giving-can-PRES
          '(We can) give land (to them).'

In (22a), the VN *zyooto* is attached by the nominative case *-ga*, and the internal argument *toti* 'land' is marked by the genitive case marker *-no*. In (22b), on the other hand, the verbal noun *zyooto* is followed by [$_V$ *deki*]-[$_T$ *ru*] 'can-PRES;' and the internal argument *toti* is attached by the accusative case *-o*. The dynamic syntactic analysis proposed in this paper accounts for the nature of (22a–b) as follows.

In (22a), syntax first parses the genitive case marked NP, i.e. *toti-no*. Hence, as shown in (23a),

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14   It just happens that both of the conclusive and adnominal forms of the present tense marker for Japanese adjective are phonologically identical, i.e. *-i.*

(23) a. [?VP or ?NP toti-?no [?V or ?N *e*]]
    b. [VP or NP toti-?no [V or N **zyooto**]]
    c. [NP toti-**no** [N **zyooto**]]-**ga**

(3c) forces syntax to create the headless fuzzy [?VP or ?NP] projection. Then, as illustrated in (23b), there emerges the chameleon-like predicate, i.e. the verbal noun *zyooto* 'giving'; and in accordance with the structural context, *zyooto* chooses the [V or N] syntactic label, entering the empty head position (see 5c). As in (23c), finally, the nominative case marker -*ga* c-selects and confirms the N projection (see 6b), consequently licensing the genitive case marked NP, *toti-no* (see 4b).

    In (22b), on the other hand, initially, syntax processes the accusative case marked NP, *toti-o*. Thus, as illustrated in (24a),

(24) a. [?VP toti-?o [?V *e*]]
    b. [VP toti-**o** [V **zyooto**]]
            (agent(theme-ACC))
    c. [VP [VP toti-**o** [V **zyooto**]] [V **deki**]]
    d. [TP [VP [VP toti-**o** [V **zyooto**]] [V **deki**]] [T **ru**]]

(3a) forces syntax to create the headless [?V] projection. Next, as illustrated in (24b), there emerges the first chameleon-like predicate, i.e. the VN *zyooto* 'giving'; and in accordance with the structural context, *zyooto* chooses for itself the syntactic label [V], entering the empty head position (see 5c), licensing the accusative case marked NP, *toti-o* (see 4d). Then, as in (24c), the second chameleon-like predicate, i.e. the potential verb *deki* 'can,' comes and takes the phrase structure with the syntactic label [V], while c-selecting the V projection, i.e. [VP toti-**o** [V **zyooto**]] (see 6a). Last, as in (24d), the present tense marker -*ru* syntactically c-selects and confirms the V projection (see 6a). The acceptability of (22b) is thus accounted for under the analysis proposed in this paper.[15]

    Observe next the well-formed example in (25). In (25),

(25) toti-**ga**   [VN zyooto]-**deki-ru**.
    land-NOM   giving-can-PRES
    '(We can) give land (to them).'

the internal argument of the VN, *zyooto* 'giving,' is marked by the nominative case -*ga*, not by the accusative case -*o* (cf. 22b). Nonetheless, like (22b), example (25) is fully acceptable. Under the proposed analysis, the acceptability of (25) is accounted for as

below.

    Given the string of words in (25), syntax first parses the nominative case marked NP, i.e. [NP *toti*]-*ga*. Hence, as shown in (26a),

(26) a. [?VP toti-?ga [?V *e*]]
    b. [VP toti-?ga [V **zyooto**]]
            (agent(theme-ACC))
    c. [VP [VP toti-?ga [V **zyooto**]] [V **deki**]]
            (agent(theme-~~ACC~~))
    d. [TP [VP [VP toti-**ga** [V **zyooto**]] [V **deki**]] [T(CONCL) **ru**]]
            (agent(theme-~~ACC~~))

(3a) forces syntax to build the headless, fuzzy [?V] projection, accommodating *toti-ga* 'land-NOM' within the ?VP shell. Next, as in (26b), the verbal noun *zyooto* 'giving' comes, and in accordance with the structural context, the predicate chooses the syntactic label, V, moving into the empty head position (see 5c). Then, as illustrated in (26c), there comes the next predicate, [V *deki*] 'can,' syntactically c-selecting the entire V projection in (26b) (see 6a), while deleting the unnecessary, inherent accusative case of the predicate [V *zyooto*] 'giving.' Finally, as shown in (26d), the conclusive, present tense form, i.e. [T(CONCL) *ru*], c-selects the whole V projection in (26c), successfully licensing the nominative case -*ga* on the internal argument of the VN [V *zyooto*], i.e. *toti-ga* 'land-NOM' (see 4a).

    Examine now the following contrast:

(27) a. *toti-**no**   [VN zyooto]-**deki-ru**.
      land-GEN   giving-can-PRES(CONCL)
      '(We can) give land (to them).'
    b. toti-**no**   [VN zyooto]-**deki-ru**   hito
      land-GEN   giving-can-PRES(ADN) person
      'a person who can give land (to them).'

In both (27a) and (27b), the verbal noun (VN) *zyooto* 'giving' is attached by the string of words, *deki-ru* 'can-PRES';[16] the internal argument of the VN is marked by the genitive case, -*no*. Under the proposed dynamic syntactic analysis, syntax parses the string of words in (27a–b) as below.

    In (27a), syntax first parses the genitive case marked NP, *toti-no* 'land-GEN.' Hence, as illustrated in (28a),

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(28)　a. [$_{?VP\ or\ ?NP}$ toti-?no [$_{?V\ or\ ?N}$ *e*]]
　　　b. [$_{?VP\ or\ ?NP}$ toti-?no [$_{?V\ or\ ?N}$ **zyooto**]]
　　　　　　　　　　(agent(theme-ACC))
　　　c. [$_{VP}$ [$_{VP}$ toti-?no [$_{V}$ **zyooto**]] [$_{V}$ **deki**]]
　　　　　　　　(agent(theme-~~ACC~~))
　　　d. [$_{TP}$ [$_{VP}$ [$_{VP}$ toti-***no** [$_{V}$ **zyooto**]] [$_{V}$ **deki**]] [$_{T(CONCL)}$ **ru**]]
　　　　　　　　(agent(theme-~~ACC~~))

(3c) helps syntax to build the fuzzy [?V or ?N] projection without its head, accommodating the genitive case marked NP, *toti-no* 'land-GEN,' within the headless structure. Next, as shown in (28b), checking the phrase structure already constructed, the VN *zyooto* 'giving' decides to choose the flexible syntactic label, [V or N], and enters the empty head position (see 5c). Then, as in (28c), the potential verb [$_{V}$ *deki*] 'can' takes the entire structure in (28b) as its internal argument, c-selecting and confirming the V projection (see 6a). Furthermore, at the parsing stage of (28c), the stative predicate [$_{V}$ *deki*] deletes the unnecessary, accusative case of the transitive verb [$_{V}$ *zyooto*] 'giving' (cf. 26c). Last, as illustrated in (28d), the conclusive, present tense marker [$_{T(CONCL)}$ *ru*] c-selects and confirms the V structure in (28c) (see 6a). In (28d), however, there is no way for the genitive case on the complement, [$_{NP}$ *toti-?no*], to be properly licensed (see 4b & 4c). (27a) thus turns out to be unacceptable.

Consider in (29a–c) the parsing process for well-formed example (27b). Given, first, the same string of words, i.e. *toti-no zyooto-deki*, syntax parses those words as in (29a–c), exactly in the same manner as in (28a–c).

(29)　a. [$_{?VP\ or\ ?NP}$ toti-?no [$_{?V\ or\ ?N}$ *e*]]　(= 28a)
　　　b. [$_{?VP\ or\ ?NP}$ toti-?no [$_{?V\ or\ ?N}$ **zyooto**]]　(= 28b)
　　　　　　　　　　(agent(theme-ACC))
　　　c. [$_{VP}$ [$_{VP}$ toti-?no [$_{V}$ **zyooto**]] [$_{V}$ **deki**]]　(= 28c)
　　　　　　　　(agent(theme-~~ACC~~))
　d. [$_{TP}$ [$_{VP}$ [$_{VP}$ toti-**no** [$_{V}$ **zyooto**]] [$_{V}$ **deki**]] [$_{T(ADN)}$ **ru**]] (cf. 28d)
　　　　　　　　(agent(theme-~~ACC~~)
　e. [$_{NP}$ [$_{TP}$ [$_{VP}$ [$_{VP}$ toti-**no** [$_{V}$ **zyooto**]] [$_{V}$ **deki**]] [$_{T(ADN)}$ **ru**]] [$_{NP}$ hito]]
　　　　　　　　(agent(theme-~~ACC~~))

The parsing stage in (29d) is, however, significantly different from the one in (28d). In (29d), not the conclusive tense, but the adnominal tense marker [$_{T(ADN))}$ *ru*] c-selects the V projection as its complement (see 6a); furthermore, the adnominal feature on [$_{T(ADN)}$ *ru*] licenses successfully the genitive case marked internal argument, i.e. *toti-no* (see 4c). The adnominal form of T is subsequently licensed by the following relative head, [$_{NP}$ *hito*] 'person.' The proposed analysis based on (3a–c), (4a–d), (5a–d), and (6a–c) thus accounts for the well-formedness of (27b), capturing

also the parallelism and contrast between (27a–b).

5.　THE SYNTAX OF VERB (V)
As shown below,

(30)　[$_{V}$ tabe]-[$_{T}$ ru]
　　　eat　　PRES

the present tense form, -[$_{T}$ *ru*] morphologically c-selects verbs (Vs) such as [$_{V}$ *tabe*] (Kageyama 1982, 1993, Ito & Sugioka 2002, among others).

Observe now the grammatical examples in (31a–b). In (31a),

(31)　a. pan-**no**　[$_{V}$ tabe]-**kata**(-ga)　(subarasi-i.)
　　　　bread-GEN eat-way(-NOM)　(wonderful-PRES.)
　　　　'(Your) way of eating bread (is wonderful.)'
　　　b. pan-**o**　[$_{V}$ tabe]-**ta**.
　　　　bread-ACC　eat-PST
　　　　'(I) ate bread.'

the verb [$_{V}$ *tabe*] is attached by the nominal suffix, -[$_{N}$ *kata*] '-ness'; and the internal argument of *tabe* is marked by the genitive case -*no*. In (31b), on the other hand, the verb *tabe* is attached by the past tense marker -[$_{T}$ *ta*]; and the internal argument of the verb is marked by the accusative case -*o*. Under the non-transformational analysis proposed in this paper, the well-formedness of these examples are accounted for as follows.

In (31a), initially, syntax parses the genitive case marked NP, *pan-no* 'bread-GEN.' Hence, as shown in (32a),

(32)　a. [$_{?VP\ or\ ?NP}$ pan-?no [$_{?V\ or\ ?N}$ *e*]]
　　　b. [$_{VP\ or\ NP}$ pan-?no [$_{V\ or\ N}$ **tabe**]]
　　　c. [$_{NP}$ [$_{NP}$ pan-**no** [$_{N}$ **tabe**]] [$_{N}$ **kata**]]

(3c) forces syntax to build the headless, fuzzy [?VP or ?NP] phrase structure, accommodating *pan-no* as one of its arguments. As illustrated in (32b), there then comes the chameleon-like predicate [$_{V}$ *tabe*], which chooses the flexible [?V or ?N] syntactic label on its own in accordance with the structural context (see 5d). Finally, as in (32c), the nominal suffix [$_{N}$ *kata*] c-selects and confirms the syntactic label N (see 6b), consequently licensing the genitive case feature on the internal argument, *pan-no* 'bread-GEN'(see 4b). The proposed analysis thus implies that the nominal suffix -*kata* 'way' in Japanese displays another radical mismatch between morphological and syntactic selection: in morphology, the nominal suffix -*kata* c-selects verb (V) (see 31a; cf. 30), but in syntax, -*kata* c-selects noun (N) (see 32c).[17]

In (31b), syntax first parses the accusative case marked NP, *pan-o* 'bread-ACC.' Hence, as in (33a),

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[17]　The reader is referred to Sugioka (1992), Kageyama (1993), Ito & Sugioka (2002), Kishimoto (2006), etc. for their important transformational/movement analyses of -*kata* nominalization in Japanese.

(33) a. [$_{?VP}$ pan-?o [$_{?V}$ *e*]]
    b. [$_{VP}$ pan-o [$_V$ **tabe**]]
           (agent(theme-**ACC**))
    c. [$_{TP}$ [$_{VP}$ pan-**o** [$_V$ **tabe**]] [$_{T(CONCL)}$ **ta**]]
           (agent(theme-**ACC**))

(3a) helps syntax to generate the fuzzy ?V projection without its head, accepting the accusative NP, *pan-o*, within the ?VP shell. As illustrated in (33b), there then comes the flexible predicate *tabe* 'eat,' which selects the syntactic label V for the structure already constructed by the accusative case marker -*o* (see 5d). At this point of the parsing stage in (33b), the inherent accusative case on the internal argument [$_{NP}$ *pan*]-*o* is licensed by the argument structure of the transitive verb [$_V$ *tabe*] (see 4d). Finally, the conclusive, past tense marker [$_{T(CONCL)}$ *ta*] c-selects and licenses the V projection (see 6a).

    Consider next that in the following acceptable example,

(34)   pan-**ga**   [$_V$ tabe]-**rare-ru**.
        bread-NOM   eat-can-PRES
        '(I) can ate bread.'

the internal argument of the verb *tabe* 'eat' is marked by the nominative case -*ga*, not the accusative case -*o* (cf. 31b). Nonetheless, (34) is fully acceptable like (31b). The analysis proposed in this paper accounts for the well-formedness of (34) as follows.

    Given the string of words in (34), initially, syntax processes the nominative case marked NP, i.e. *pan-ga* 'bread-NOM.' Hence, as in (35a),

(35) a. [$_{?VP}$ pan-?ga [$_{?V}$ *e*]]
    b. [$_{VP}$ pan-?ga [$_V$ **tabe**]]
           (agent(theme-ACC))
    c. [$_{VP}$ [$_{VP}$ pan-?ga [$_V$ **tabe**]] [$_V$ **rare**]]
           (agent(theme-~~ACC~~))
    d. [$_{TP}$ [$_{VP}$ [$_{VP}$ pan-**ga** [$_V$ **tabe**]] [$_V$ **rare**]] [$_{T(CONCL)}$ **ru**]]
           (agent(theme-~~ACC~~))

(3a) helps syntax to generate the headless [?V] projection for the nominative case marked NP, *pan-ga*. Then, as shown in (35b), there comes the predicate *tabe* 'eat,' which then chooses the syntactic V label in accordance with the structural environments, subsequently moving into the empty head position (see 5d). Next, as illustrated in (35c), the stative, potential verb, i.e. [$_V$ *rare*], syntactically c-selects the entire V projection in (35b) (see 6a), while deleting the unnecessary, accusative case of the transitive verb [$_V$ *tabe*]. Last, the conclusive, present tense marker [$_{T(CONCL)}$ *ru*] c-selects the whole V projection in (35c), consequently licensing the nominative case marked, internal argument, i.e. *pan-ga* 'bread-NOM' (see 6a & 4a).

    Examine last the contrast between (36a) and (36b).

(36b) is acceptable, whereas (36a) is not.

(36) a. *pan-**no**   [$_V$ tabe]-**rare-ru**.
        bread-GEN   eat-can-PRES(CONCL)
    b. pan-**no**   [$_V$ tabe]-**rare-ru**   hito
        bread-GEN   eat-can-PRES(ADN)   person

In both (36a) and (36b), the verb *tabe* 'eat' is followed by the same string of words, i.e. *rare-ru* 'can-PRES;' and the internal argument is marked by the genitive case, -*no*. The proposed dynamic syntactic analysis accounts for the difference between (34a–b) as below.

    In (36a), syntax first parses the genitive case marked NP, *pan-no* 'bread-GEN.' Hence, as illustrated in (37a),

(37) a. [$_{?VP or ?NP}$ pan-?no [$_{?V or ?N}$ *e*]]
    b. [$_{VP or NP}$ pan-?no [$_{V or N}$ **tabe**]]
           (agent(theme-ACC))
    c. [$_{VP}$ [$_{VP}$ pan-?no [$_V$ **tabe**]] [$_V$ **rare**]]
           (agent(theme-~~ACC~~))
    d. [$_{TP}$ [$_{VP}$ [$_{VP}$ pan-***no** [$_V$ **tabe**]] [$_V$ **rare**]] [$_{T(CONCL)}$ **ru**]]
           (agent(theme-~~ACC~~))

(3c) forces syntax to generate the headless, fuzzy [?V or ?N] projection for the genitive case marked NP, *pan-no*. As shown in (37b), the chameleon-like, flexible predicate, *tabe*, then comes and chooses the label [V or N] in accordance with the structure built in (37a), moving into the empty head position (see 5d). As in (37c), the potential predicate, [$_V$ *rare*] 'can,' then c-selects and confirms the V projection (see 6a), while deleting the unnecessary, inherent accusative case of the transitive verb [$_V$ *tabe*] 'eat.' Last, as shown in (37d), the conclusive tense marker [$_{T(CONCL)}$ *ru*] comes, and syntactically c-selects the V projection based on [$_V$ *rare*] 'can' (see 6a). Here, however, it is impossible for the genitive case -*no* on the internal argument, *pan-no* 'bread-GEN,' to be licensed properly (see 4b–c). As a result, example (36a) results in ungrammaticality.

    Consider finally the parsing process in (38a–d) for well-formed example (36b). Given, first, the identical string of words, i.e. *pan-no tabe-rare*, syntax parses the words as in (38a–c), exactly in the same way as in (37a–c).

(38) a. [$_{?VP or ?NP}$ pan-?no [$_{?V or ?N}$ *e*]] (= 37a)
    b. [$_{VP or NP}$ pan-?no [$_{V or N}$ **tabe**]] (= 37b)
           (agent(theme-ACC))
    c. [$_{VP}$ [$_{VP}$ pan-?no [$_V$ **tabe**]] [$_V$ **rare**]] (= 37c)
           (agent(theme-~~ACC~~))
    d. [$_{TP}$ [$_{VP}$ [$_{VP}$ pan-**no** [$_V$ **tabe**]] [$_V$ **rare**]] [$_{T(ADN)}$ **ru**]] (cf. 37d)
           (agent(theme-~~ACC~~))
    e. [$_{NP}$ [$_{TP}$ [$_{VP}$ [$_{VP}$ pan-**no** [$_V$ **tabe**]] [$_V$ **rare**]] [$_{T(ADN)}$ **ru**]] [$_{NP}$ hito]]
           (agent(theme-~~ACC~~))

The parsing stage in (38d) is significantly different from

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the one in (37d). That is, in (38d), not the conclusive tense form, but the adnominal tense form [$_{T(ADN)}$ *ru*] comes and c-selects the V projection based on [$_V$ *rare*] in syntax (see 6a). Furthermore, in (38d), the adnominal feature on the present tense marker [$_{T(ADN)}$ *ru*] licenses successfully the genitive case -*no* on the internal argument, i.e. *pan-no* 'bread-GEN,' by means of (4c). Finally, as in (38e), the adnominal feature on the tense marker is licensed by the following relative head, [$_{NP}$ *hito*] 'person.'[18]

6. CONCLUSION: DYNAMIC SYNTAX WITH [V], [N] & [V OR N]

In this paper, I have adopted a common sense view of language: namely, syntax is dynamic in that syntax parses a string of words from left to right strictly in an incremental manner (Phillips 1996, 2003, Kempson et al. 2001, Culicover & Nowak 2003, Cann et al. 2005, etc.; cf. Chomsky 1965, 1981, 1986, 1995, among others).

More specifically, here, I have argued that in cases where case marked phrases are present in a clause, case information provides syntax with a significant instruction as to what kind of headless, fuzzy phrase structure should be built initially, i.e. ?VP, ?NP or [?V or ?N]P (see 3a–c; cf. Koizumi 1995, etc.).[19] Furthermore, by dissociating morphology from syntax, I have proposed that adjectival noun (AN), adjective (A), verbal noun (VN) and verb (V) in Japanese are all the same, chameleon-like category, i.e. [V or N], in syntax (see 5a–d). By doing so, I have argued that given the headless, fuzzy phrase structure, initially built on the basis of case markers, the chameleon-like predicate, [V or N], chooses its syntactic label, i.e. V, N or [V or N], consequently moving itself into the empty head position with its appropriate syntactic label. The syntactic label selected by the flexible predicate, [V or N], in accordance with structural context, is c-selected and confirmed by the following head later in the course of left to right sentence processing (6a–c). The case markers used for initial, headless structure building are also licensed by a series of heads strictly in an incremental manner in the course of left to right information processing (see 4a–d).

In so doing, I have attempted to show in this paper that the dynamic syntactic, non-transformational analysis based on (3a–c), (4a–d), (5a–d) and (6a–c) appears to provide a very efficient, incremental account for various types of construction, involving AN, A, VN and V, in a uniform manner. If correct, the proposed analysis suggests that (i) the dynamics of language understanding might affect the design of syntax in a significant manner (Hawkins 1990, 1994, 2004, 2014, etc.), and that (ii) syntax might indeed be a highly efficient information processing system for human communication (Phillips 1996, 2003, Kempson et al. 2001, Culicover & Nowak 2003, Cann et al. 2005, Kempson et al. 2011, Kempson 2015, 2017, etc.; cf. Chomsky 1965, 1981, 1986, 1995, among others).

REFERENCES

Abe, Jun. 2015. The nature of scrambling in Japanese, Ms.

Borer, Hagit. 2003. Exo-skeletal vs. endo-skeletal explanations: Syntactic projections and the lexicon. In John Moore and Maria Polinsky (eds.), 31–67.

Cann, Ronnie, Ruth Kempson & Lutz Marten. 2005. *The dynamics of language: An introduction.* Oxford: Elsevier.

Chomsky, Noam. 1965. *Aspects of the theory of syntax.* Cambridge, MA: MIT Press.

Chomsky, Noam. 1981. *Lectures on government and binding.* Dordrecht: Foris.

Chomsky, Noam. 1986. *Knowledge of language: Its nature, origin, and use.* New York, NY: Praeger.

Chomsky, Noam. 1995. *The minimalist program.* Cambridge, MA: MIT Press.

Culicover, Peter & Andrzej Nowak. 2003. *Dynamical grammar: Minimalism, Acquisition, and Change.* Oxford University Press.

Culicover, Peter & Ray Jackendoff. 2005. *Simpler Syntax.* Oxford University Press.

Di Sciullo, Anna Maria (2005) *Asymmetric morphology.* Cambridge, MA: MIT Press.

Hale, Ken & Samuel J. Keyser 1993. *The view from building 20: Essays in linguistics in honor of Sylvain Bromberger.* Cambridge, MA: MIT Press.

Halle, Morris & Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In Ken Hale & Samuel J. Keyser (eds.), 111–176.

Harada, Shin.-Ichi. 1971. *Ga-no* conversion and idiolectal variations in Japanese. *Gengokenkyu* 60, 25–38.

Harley, Heidi & Rolf Noyer. 1999. Distributed morphology. *Glot International* 4(4), 3–9.

Harley, Heidi &. Rolf Noyer. 2000. Formal vs. encyclopedic properties of vocabulary: Evidence from nominalizations. In B. Peeters (ed.), 349–374.

Hawkins, John. 1990. A parsing theory of word order universals, *Linguistic Inquiry* 21, 223-61.

Hawkins, John. 1994. *A performance theory of order and constituency,* Cambridge University Pres.

Hawkins, John. 2004. *Efficiency and complexity in grammars,* Oxford University Press.

Hawkins, John. 2014. *Cross-linguistic variation and efficiency,* Oxford University Press.

Hiraiwa, Ken. 2001. On nominative-genitive conversion. *MIT*

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[18] Examples (11b), (18b), (27b), (36b) are instances of 'nominative-genitive conversion' in Japanese. The reader is referred to Harada (1971), Miyagawa (1993, 2013), Watanabe (1996), Hiraiwa (2001), Saito (2001), etc. for their important analyses of the case conversion phenomenon. Unlike the dynamic syntactic, non-transformational analysis proposed in this paper, however, it is not clear how such mainstream, generative grammatical analyses can be made compatible with the actual flow of language understanding in the course of left to right sentence processing.

[19] Hence, obviously, under the analysis proposed in this paper, there is no base component or there is no syntactic level at the initial point of the derivation/computation called D-structure, where the projection principle holds (cf. Chomsky 1965, 1981, 1986, 1995, etc.).

Working Papers in Linguistics 39, 66–125.

Hoshi, Hiroto. 2014. Case, tense and light verb constructions: A dynamic property of language. In Hideki Kishimoto & Yoko Yumoto (eds.), *Hukuzatu-zyutugo-kenkyuu-no genzai* [Current issues in complex predicate research]. 67–97. Tokyo: Hituzi Syobo.

Hoshi, Hiroto. 2019a. Dynamic categorization of adjectival nouns and verbal nouns: A study of fuzzy categories. *Memoirs of Faculty of Education and Human Studies,* 77-84. Akita University.

Hoshi, Hiroto. 2019b. Fuzzy categories and dynamic categorization. *Annual Research Report on General Education,* 29–43. Akita University.

Hoshi, Hiroto. 2020a. Selection and dynamic categorization: A study of adjectival nouns and verbal nouns. *Memoirs of Faculty of Education and Human Studies,* 71-78. Akita University.

Hoshi, Hiroto. 2020b. Dynamic categories and projections in a head-final language. *Bulletin of the Global Center for Higher Education,* 13–29. Akita University.

Hoshi, Hiroto. 2021a. Morphological and syntactic labels: Dynamic labeling of fuzzy predicates in a head-final language. *Memoirs of Faculty of Education and Human Studies*, 79-90. Akita University.

Hoshi, Hiroto. 2021b. Incremental categorial labeling in a head-final language: A perspective from dynamic syntax. *Bulletin of the Global Center for Higher Education,* 21–39. Akita University.

Hoshi, Hiroto. 2021c. Selecting and updating the fuzziness of adjectival nouns and verbal nouns. In Reiko, Okabe, et al. (eds.) *The Joy and Enjoyment of Linguistic Research: A Festschrift for Takane Ito,* 355–364. Tokyo: Kaitakusha.

Hoshi, Hiroto. 2022a. Syntactic nominalization and nominative-genitive conversion: An incremental categorial labeling analysis, *Memoirs of Faculty of Education and Human Studies,* 73-83. Akita University.

Hoshi, Hiroto 2022b. Fuzzy syntax: The flow of incremental structure building and update, *Bulletin of the Global Center for Higher Education,* 13–26. Akita University.

Ito, Takane & Yoko Sugioka. 2002. *Go-no sikumi-to gokeisei* [Word forms and word formation]. Tokyo: Kenkyusha.

Jackendoff, Ray. 1997. *The architecture of the language faculty*. Cambridge, MA: MIT Press.

Jackendoff, Ray. 2003. *Foundations of language: Brain, meaning, grammar, evolution.* Oxford University Press.

Kageyama, Taro. 1982. Word formation in Japanese. *Lingua* 57, 215–258.

Kageyama, Taro. 1993. *Bunpoo-to gokeisei* [Grammar and word formation], Tokyo: Hituzi Syobo.

Kageyama, Taro & Hideki Kishimoto. 2016. *Handbook of Japanese lexicon and word formation.* Berlin: Mouton de Gruyter.

Kempson, Ruth. 2015. Syntax as the dynamics of language understanding. In Keith Allan (ed.), *The Routledge handbook of linguistics,* 135–152. London: Routledge.

Kempson, Ruth. 2017. Shifting concepts of language:

Meeting the challenge of modelling interactive syntax. In Edda Weigand (ed.), *The Routledge handbook of language and dialogue,* 197–213. London: Routledge.

Kempson, Ruth, Wilfried Meyer-Viol, & Dov Gabbay. 2001. *Dynamic syntax: The flow of language understanding*. Oxford: Blackwell.

Kempson, Ruth & Jieun Kiaer. 2010. Multiple-long distance scrambling: syntax as reflections of processing. *Journal of Linguistics* 49, 127–192.

Kempson, Ruth, Eleni Gregoromichelaki, & Chris Howes. 2011. *Dynamics of lexical interfaces*. Chicago: CSLI Press.

Kishimoto, Hideki. 2006. Japanese syntactic nominalization and VP-internal syntax. *Lingua* 116, 771-810.

Kishimoto, Hideki & Satoshi Uehara. 2016. Lexical categories. In Taro Kageyama & Hideki Kishimoto (eds.), 51–91.

Koizumi, Masatoshi. 1995. *Phrase structure in minimalist syntax.* Ph.D. dissertation, MIT.

Kuroda, S. -Y. 1988. Whether we agree or not. *Linguisticae Investigationes* 12, 1–47.

Kuroda, S. -Y. 1992. *Japanese syntax and semantics.* Dordrecht : Kluwer.

Lieber, Rochelle. 2006. The category of roots and the roots of categories: What we learn from selection in derivation. *Morphology* 16: 247–272.

Martin, Samuel. 1975. *A reference grammar of Japanese.* New Haven, CT: Yale University Press.

Matsushita, Daizaburo. 1930. *Kaisen hyoozyun nihon bunpoo [Revised standard Japanese grammar]*. Tyuubunkan Shoten.

Miyagawa, Shigeru. 1987. Lexical categories in Japanese. *Lingua* 73, 29–51.

Miyagawa, Shigeru. 1993. LF case-checking and minimal link condition. *MIT Working Papers in Linguistics* 19, 213–254.

Miyagawa, Shigeru. 2013. Strong uniformity and *ga/no* conversion. *English Linguistics* 30, 1–24.

Moore, John & Maria Polinsky. 2003. *The nature of explanation in linguistic theory.* Stanford, CA: CSLI Publications.

Phillips, Colin. 1996. *Order and structure.* Ph.D. dissertation, MIT.

Phillips, Colin. 2003. Linear order and constituency. *Linguistic Inquiry* 34, 37–90.

Saito, Mamoru. 1985. *Some asymmetries in Japanese and their theoretical implications*. Ph.D. dissertation, MIT.

Saito, Mamoru. 1989. Scrambling as semantically vacuous A' movement. In Mark R. Baltin and Anthony S. Kroch (eds.), *Alternative Conceptions of Phrase Structure,* 182-200. University of Chicago Press, Chicago.

Saito, Mamoru. 2001. Genitive subjects in Japanese: Implications for the theory of empty pronouns. In Peri Bhaskararao (ed.), *International Symposium on Non-nominatie Subjects,* 269–279. Institute for the Study of Languages and Cultures of Asia and Africa, Tokyo University of Foreign Studies.

Sugioka, Yoko. 1992. On the role of argument structure in nominalization. *Language, Culture and Communication* 10, 53–80. Keio University.

Sugioka, Yoko. 2009. '-Tyuu'-no tagisei: zikan-o arawasu setuzi-o meguru koosatu [The Ambiguity of '-tyuu': considerations of temporal affixes]. In Yoko Yumoto & Hideki Kishimoto (eds.), *Goi-no imi-to bunpoo* [Lexical semantics and grammar], 85–104. Tokyo: Kuroshio.

Takano, Yuji. 2002. Surprising constituents. *Journal of East Asian Linguistics* 11(3), 243–301.

Ueno, Yoshio. 2016. *Gendai nihongo-no bunpoo koozoo: Keitairon* [The Grammatical structure of modern Japanese: Morphology]. Tokyo: Waseda University Press.

Watanabe, Akira. 1996. Nominative-genitive conversion and agreement in Japanese: A cross-linguistic perspective. *Journal of East Asian Linguistics* 5, 373–410.

Yuhara, Ichiro. 2021. Verbal nouns are in fact verbs. In Reiko, Okabe, et al. (eds.) *The Joy and Enjoyment of Linguistic Research: A Festschrift for Takane Ito,* 365–374. Tokyo: Kaitakusha.