

The Structure of Free Relatives and Decomposition of *Wh* Operators

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This study discusses the derivation of free relatives (FRs). Since Bresnan and Grimshaw (1978), many analyses have been proposed in the literature, and more recently, Checcetto and Donati (C&D) (2015) give a unified account of the structures of FRs and embedded interrogatives.

C&D (2015) suggest that FRs in (1a) and embedded interrogatives in (2a) have the structure shown in (1b) and (2b), respectively.

(1) a. I like what you like.

b. I like [_{DP} what [_{CP} C you like ~~what~~]]

(2) a. I wonder what you like.

b. I wonder [_{CP} what [_{C'} C you like ~~what~~]]

According to C&D, in (1b), *what* projects in the set {*what*, CP} because *what* is a head: H. Therefore, the structure becomes DP. In (2b), C projects and the embedded structure becomes CP, because C probes *what*. In this way, C&D derive the different interpretations of *what you read* in (1a) and (2a).

However, the well-formedness of (3), where the *wh* operator *what books* is not H but a phrase, poses a problem for their analysis. Following C&D, *what books* cannot project. However, since *give* cannot take an interrogative as its complement, (3) should be predicted to be ill-formed, incorrectly.

(3) Give me what books you have on the subject. (Declark (1991: 546))

Another problem is concerned with Bulgarian and Greek data. Izvorski (1998) observes that in these languages an affix derived from the definite article attaches to interrogative *wh* operators to derive FR *wh* operators. Since C&D assume that interrogatives and FRs involve the same *wh* operators, these facts are not explained in their analysis.

We propose an alternative analysis. First, following Kuroda (1969), we decompose *wh* operators into two parts: the operator part, which has the unvalued quantificational-feature: [_{uQuant}]-feature, and the restriction part. Hence, interrogative *wh* operators have the following structure, where *SOME* becomes the restriction of *what* in the semantic interpretation.

(4) $\text{what}_{\text{int}} \rightarrow \text{Operator}[\text{uQuant}] + \text{SOME}$

Based on Izvorski's observation, we assume that FRs have *wh* operators with D, which values the [_{uQuant}]-feature in the operators, as shown in (5).

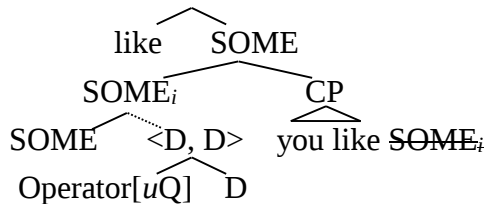
(5) $\text{what}_{\text{FR}} \rightarrow \text{Operator}[\text{uQuant}] + \text{D} + \text{SOME}$

We adopt the labeling algorithm proposed by Chomsky (2015). Following this, a set formed from H and a phrase, H serves as the label. When both members are phrases, the agreement feature provides the label. Finally, taking into consideration the phrase-phrase set, we can assume that the H-H set should be labelable by the agreement feature.

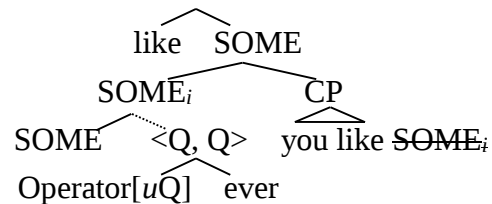
(6a), which shows the structure of the FR in (1), is derived as follows. First, the operator merges with D. The [_{uQuant}]-feature is valued by D, which explains the definite interpretation of FRs. This agreement between [_{uQuant}] and D provides the set with the label. Therefore, this set

pair-merges to *SOME*, which is shown by a dotted line. Following Chomsky (2004), we assume the pair-merged element becomes invisible. Hence, the pair counts as H, and *SOME* can serve as the label when merging with the CP. Consequently, the matrix *like* can select the head *SOME*. Replacing D with *ever*, which is derived from Q: *every*, yields an *ever* FR: *I like whatever you like*. The [*uQ*]-feature is valued by *ever*, so that the *wh* operator receives a universal interpretation. This is shown in (6b). Although C&D claim that externally headed relatives are involved in *ever* FRs, their account is problematic, since the *wh* operator *what* is usually not used in headed relatives in English.

(6) a.



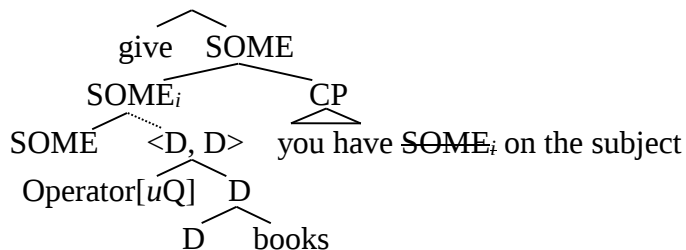
b.



Note that in interrogatives, the operator cannot pair-merge to the restriction, since the operator must agree with C for the $\langle Q, Q \rangle$ label. In contrast, the operator is unnecessary in FRs, since the matrix V selects the restriction. The only requirement is to value its [*uQ*]-feature. Therefore, after the valuation, the operator is allowed to become invisible.

Finally, we show the derivation of the problematic example in C&D's analysis in (7), where D in the *wh* operator selects *books* as its complement. The derivation is almost the same as (6a), and the apparent phrase $\langle \text{SOME}, \{ \text{Operator}, \{ D, \text{books} \} \} \rangle$ can serve as the label because of pair-Merge.

(7)



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Copy Raising, Evidentiality and Island Effects

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1. Introduction

“Copy raising (CR)” is used to refer to a sentence like (1b), which apparently involves raising out of the finite CP with the pronominal element left behind (e.g. Potsdam and Runner (2001)).

- (1) a. John_i seems t_i to be happy. [Raising]
b. John_i seems {as if / as though / like} he_i is happy. [Copy Raising]

The CR sentence in (1b) shows that the matrix subject is coreferential with the pronominal subject in the embedded clause introduced by the comparative complementizer.

In the literature, (at least) the following two issues have been addressed concerning the derivation of copy raising: First, how does the matrix subject meet the theta-criterion requirement under the assumption that *seem* cannot assign any theta role to the external argument (see Potsdam and Runner (2001) for more details)? Second, how is the referential dependency between the matrix and the embedded subjects licensed? On these two issues, among the proposed approaches is the base-generation one (e.g. Landau (2011), Potsdam and Runner (2001); cf. Fujii (2005) and Takano (2013) for the movement approach). A recent study by Landau (2011) proposes that the matrix subject base-generated at [Spec, TP] establishes a dependency relation with the embedded pronominal subject through predication (i.e. merger with a null operator *OP*).

- (2) John_i seems [_{PP} as [_{CP} *OP*_i [_C if [_{TP} he_i is happy]]]].

The configuration in (2) shows that the matrix subject is semantically licensed as the subject of the clausal predicate derived by *OP*. However, there remain two questions: First, why is predication required in copy raising? Second, does the null operator at [Spec, CP] create an island?

In this study, combining Asudeh and Toivonen’s (2012) observation with evidentiality (Section 2), I propose an alternative analysis in which the null operator in (2) plays a crucial role in encoding an evidential meaning and creates a weak island (Section 3).

2. Evidentiality and Island Effects

According to Aikhenvald (2004:3), evidentiality is defined as “a linguistic category whose primary meaning is source of information.” In this connection, Asudeh and Toivonen (2012) make an interesting observation that the speaker cannot utter a CR sentences when s/he does not have any source from which s/he infers the propositional content.

- (3) a. A and B walk into Tom’s kitchen. There’s no sign of Tom, but there are various things bubbling away on the stove and there are several ingredients on the counter, apparently waiting.
b. {# Tom seems like he’s cooking. / It seems that Tom is cooking. / Tom seems to be cooking.} (Asudeh and Toivonen (2012:331), with slight modifications)

This fact implies that only the CR sentence carries an (inferred-)evidential meaning (see also Gisborne (2010) for a similar argument).

Furthermore, the evidential meaning that CR sentences carry affects the acceptability of their interrogative counterpart (cf. (5a)). Previous studies have not come to a consensus on whether the embedded clause allows *wh*-extraction in copy raising (Inada (1984), Asudeh (2002); cf. Rooryck (2000)), but according to my informants, a *wh*-question with CR is acceptable if the hearer also has a certain source from which s/he infers a possible answer to the *wh*-question. Furthermore,

wh-interrogatives with CR show weak island effects (cf. (5a, b)), which is similar to the pattern traditionally known as the argument-adjunct asymmetry (cf. (4a, b)).

- (4) a. ? What_i do you wonder whether John bought t_i?
 b. * How_i do you wonder whether John solved the problem t_i?
 (Hoekstra and Sybesma (2004:191))
- (5) a. ? Who_i did he seem/sound {as if / like} he was talking to t_i?
 b. * Why_i did he seem/sound {as if / like} he was talking to Mary t_i?

3. Proposal

In order to explain the properties observed in Section 2, I propose the following derivation by slightly modifying the derivation in (2):

- (6) [TP John_[vEvid] [_{vP} seems [_{PP} as [_{CP} OP_[uEvid] [_{C'} if [_{TP} he_i is happy]]]]]]]

Here, I make the following assumptions: First, the raising predicate *seem* possesses the valued evidential feature [_{vEvid}] and assigns it to the matrix subject *John*. Second, the null operator at [Spec, CP] carries the unvalued evidential feature [_{uEvid}], and it is valued by establishing a predication relation with the matrix subject having the [_{vEvid}] feature. As a result, the configuration in (6) receives an (inferred-)evidential interpretation; in short, the matrix subject is interpreted as the source of information from which the speaker infers the propositional content expressed by the *as if* clause.

I, then, assume that the empty operator occupying [Spec, CP] creates an island (or a barrier in the Barriers framework). Thus, the argument-adjunct asymmetry in (5) is accounted for in terms of, say, the ECP satisfaction. (5a) meets the ECP requirement because the trace is identified through head government, which is not the case in (5b) as the trace is not antecedent-governed (see Rizzi (2004 and his subsequent work) for the recent treatment of weak island effects in terms of featural relativized minimality).

The proposed analysis can be easily accommodated within the movement approach (e.g. Fujii (2005), Takano (2013)).

4. Theoretical Implications

In the literature, evidentiality has been discussed within the cartographic framework (e.g. Cinque (1999)), with emphasis on sentence final particles/morphemes and adverbs. In this respect, copy raising is of interest in that it syntactically encodes evidentiality with recourse to predication (i.e. the dependency between the matrix subject and the embedded pronominal subject).

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Orthographic influence on L2 vowel quality: the case of English reduced vowels by native speakers of Japanese

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1. Introduction

Japanese learners of English often have difficulty with the production and perception of English vowels because English has more vowels than Japanese. In particular, the reduced vowel schwa /ə/ which occurs in unstressed syllables is difficult because vowel reduction and centralization associated with speech rhythm do not occur in Japanese.

Previous studies (Lee et al., 2006 and Konishi & Kondo, 2015) showed that even highly proficient Japanese learners of English could not reduce vowels to schwa like native English speakers. However, these two studies only assessed the Euclidian distance of canonical schwas from the center of the vowel space, and did not look at the influence of the phonological context (e.g. preceding segment, whether the syllable is open or closed) or orthographic context.

Although it has not been specifically examined in previous studies, it is likely that the quality of weak English vowels produced by Japanese learners is influenced by spelling. In Japanese loanwords from English, the pronunciation of the vowels follows the spelling of the original word rather than the actual pronunciation of the original vowels. For example, the schwa sounds of *banana* /bəˈnana/ and *tomato* /təˈmeɪtoʊ/ are transcribed as バナナ /banana/ and トマト /tomato/ because when the five Japanese vowels are transcribed into Roman alphabet, the letters <i, e, a, o, u> are pronounced as /i, e, a, o, u/ respectively. So, it is likely that this spelling-to-sound relationship will influence L2 English pronunciation of schwa by Japanese learners.

Therefore, this study will investigate the influence of spelling on the first and second formants (F1 and F2) of L2 English reduced vowels produced by Japanese learners. Only vowels in unstressed positions spelled with <e, a, o> were analyzed because vowels spelled with <i> and <u> are normally reduced to lax /ɪ/ and /ʊ/, not /ə/.

2. Analysis and results

The data for the analysis was extracted from the J-AESOP corpus, which is part of the AESOP multi-national L2 English learner corpus (e.g. Visceglia et al., 2009). Recordings of 72 Japanese learners of English and 15 native speakers of English were analyzed. The Japanese learners were divided into Advanced and Beginner groups based on their English proficiency scores. The data comprised five words read in a carrier sentence, and five other words selected from script reading of *The North Wind and the Sun* (Table I). Only the content words were chosen. Schwa sounds of suffixes and rhotic schwa [ɜ] were excluded.

Table I. Words used for the analysis

<a>	<e>	<o>
<i><u>a</u>partment, hos<u>p</u>ital, <u>a</u>vailable, <u>a</u>greed, <u>a</u>tt<u>a</u>pt</i>	<i>ap<u>a</u>rtment, <u>e</u>lev<u>a</u>tor de<u>a</u>rtment store, tr<u>a</u>vel<u>e</u>er</i>	<i><u>c</u>onsidered, <u>c</u>on<u>f</u>ess</i>

First, Welch's Two Sample t-tests were conducted for F1 and F2 of the native English speakers and Japanese learners. The results showed there were significant differences both for F1 ($t(62.971) = -4.8238, p < .001$) and F2 ($t(44.228) = 3.1239, p < .005$). Therefore, separate One-way Analysis of Variance (ANOVA) was conducted for the native speaker group and the Japanese learner group, setting *F1/F2* as the dependent variable and *letter* (<a, e, o>) as the independent variable. For the

Japanese learner group, *level* (Advanced/Beginner) and the interaction between *letter* and *level* were added as independent variables. For the native speaker group, the main effect of *letter* was significant for both F1 ($F(2,13) = 9.553, p < .003$) and F2 ($F(2,13) = 9.303, p < .004$). In the post-hoc Tukey's HSD, a significant difference for F1 was observed between <a> and <e> ($p < .002$), and between <e> and <o> ($p < .004$). There was also a significant difference for F2 between <a> and <e> ($p < .002$) (Figure 1). For the Japanese learner group, the main effect of *letter* was significant for both F1 ($F(2,67) = 65.191, p < .001$) and F2 ($F(2,67) = 92.048, p < .001$). The interaction between *letter* and *level* was also significant for both F1 ($F(2,67) = 4.918, p < .02$) and F2 ($F(2,67) = 4.268, p < .02$). However, the main effect of *level* was not significant for either F1 ($F(1,67) = 0.799, p = .375$) or F2 ($F(1,67) = 1.178, p = .282$). Post-hoc Tukey's HSD showed the following significant differences: for F1 of the Advanced group, between <a> and <e> ($p < .001$); for F1 of the Beginner group, between <a> and <e>, <a> and <o>, and <e> and <o> ($p < .001$); for F2 of the Advanced group, between <a> and <e> ($p < .003$), and <a> and <o> ($p < .001$); and for F2 of the Beginner group, between <a> and <o>, and <e> and <o> ($p < .001$) (Figure 1).

The distribution of the formants of the Advanced learner group was more similar to the native speaker group than that of the Beginner group. The distribution of schwa with <e> and <o> of Advanced group merged, indicating little influence of spelling. In contrast, the distribution of schwa of the Beginner group was influenced by the spelling. In Japanese, /e/ is mid-front, /a/ is low-mid and /o/ is mid-back. Although native speaker group's F1 and F2 differed significantly for some pairs, any difference only occurred in either F1 or F2, not in both F1 and F2 at the same time, as occurred in both learner groups. English <a> is mid-front (which differs from the English /a/ position) and <e> is low-back (which is also different from the English /e/ position). So, the vowel quality of native speakers differed much less than that of either of the learner groups.

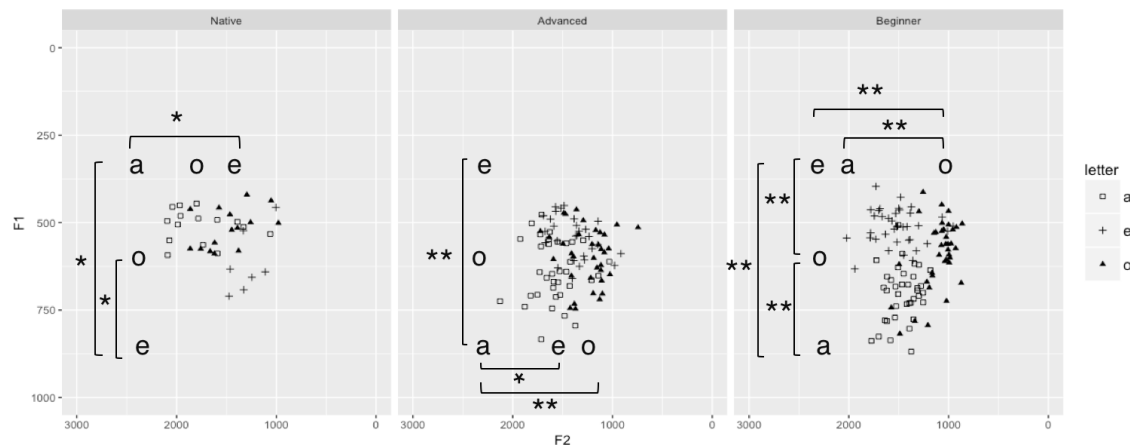


Figure 1 Distribution of formants with different letters (x-axis: F2 / y-axis: F1)
left: Native English speaker group / center: Advanced learner group/ right: Beginner group

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This paper analyzes the following sentences:

- (1) a. I am coming now.
b. I found it. The book was here.

The motion verb *come* is used for movement toward the addressee in (1a), even though, from the perspective of the speaker, her movement is rather *going* or *leaving* from her location. *Coming* is a description from the viewpoint of the addressee (Fillmore 1997). In (1b), the past tense is used for the current location of the book. This paper claims the existence of the Kaplanian monster, the context change function that maneuvers the context of utterance (Kaplan 1977, 1989).

Oshima (2006) considers the deictic verbs *come* and *go* to be indexicals that pick reference directly from the context. According to Fillmore (1997), *come* indicates motion towards the location of either the speaker or the addressee. If *come* is an indexical, it is polysemous between the speaker's location and the hearer's.

- (2) a. Mary is coming here. (toward the speaker's location)
b. I am coming. (toward the hearer's location)
- (3) a. $\llbracket come \rrbracket^{<ac, hc, tc, lc, wc>, <ai, hi, ti, li, wi>} = \lambda e. come(e) \wedge goal(e) = l_c$
b. $\llbracket come \rrbracket^{<ac, hc, tc, lc, wc>, <ai, hi, ti, li, wi>} = \lambda e. come(e) \wedge goal(e) = l_i$

Another possible analysis would be a binding approach in which *come* carries with it an additional deictic parameter that is treated as a free or bound variable in the object language. (2b) would be something like (4) where the goal argument of *come* is bound by the addressee.

- (4) I am telling you $\lambda x. I$ am coming to x_1 .

Instead, we assume that there is a context shifter called monster, OP, which changes the context location to the hearer's location.

- (5) $\llbracket OP_{come} \rrbracket^{<ac, hc, tc, lc, wc>, <ai, hi, ti, li, wi>} = \llbracket come \rrbracket^{<ac, hc, tc, li, wc>, <ai, hi, ti, li, wi>}$
 $= \lambda e. come(e) \wedge goal(e) = l_i$

Kaplan (1977, 1989) claimed that indexicals such as *I*, *you*, *here*, *now*, and *yesterday* are directly referential, meaning that their reference is fixed by the context of utterance. Except for direct quotations such as in (6a), *I* can refer only to the speaker or writer in (6b).

- (6) a. Baali said "I am an idiot."
b. Baali said that I am an idiot.

Kaplan's claim has prompted much debate on whether contexts can be shifted. Schlenker (2003) and Anand and Nevins (2004), among others, have argued that context shifters, referred to as monsters, exist in languages such as Amharic and Zazaki. Further, Anand and Nevins (2004) and Anand (2006) claimed the existence of three kinds of Kaplanian monsters selected by different attitude verbs in Slave. In (7), context (*c*) and index (*i*) are tuples: $\langle a, h, l, t, w \rangle$ —author (*a*), hearer (*h*), location (*l*), time (*t*), and world (*w*). There are three kinds of monstrous operators: (a) $OP_{\forall}$ maneuvers all indexicals in its scope so that the person, locative, temporal, and world parameters are all overwritten by the index; (b)

OP_{per} only applies to first and second person pronouns, namely, the agent a and the hearer h ; and (c) OP_{auth} shifts the reference of the first person, or the author, exclusively. Given that the location parameter is overwritten in the case of *come*, the monster in English is the fourth type (d) that maneuvers the location parameter and the temporal parameters, as the example in (2b) indicates.

- (7) a. $\llbracket OP_{\forall}\phi \rrbracket_g^{c,i} = \llbracket \phi \rrbracket_g^{i,i}$
 b. $\llbracket OP_{per}\phi \rrbracket_g^{c,i} = \llbracket \phi \rrbracket_g^{<ai,hi,lc,tc,wc>,i}$
 c. $\llbracket OP_{auth}\phi \rrbracket_g^{c,i} = \llbracket \phi \rrbracket_g^{<ai,hc,lc,tc,wc>,i}$

(Anand and Nevins 2004, Anand 2006)

- d. $\llbracket OP_{loc,time}\phi \rrbracket_g^{c,i} = \llbracket \phi \rrbracket_g^{<ac,hc,li,ti,wc>,i}$

Regarding the example in (2b), there is a parallel one in Japanese.

- (8) Koko-ni at-ta. (Japanese)
 here-LOC be-PAST
 ‘It was here’

The past tense can be used when the speaker suddenly finds something that was lost (Teramura 1984, among others). Such ‘fake’ past has also been analyzed as evidence of the context shift (Nishiguchi 2006).

- (9) $\llbracket OP \text{ PAST} \rrbracket^{c,i} = \llbracket \text{PAST} \rrbracket^{<ac,hc,lc,ti,wc>,i}$

As in (9), the temporal parameter of the context is overwritten using the monstrous function so that the interpretation of the past tense marker differs.

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Labeling and Feature Sharing in *Wh-In-Situ* Questions

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In the current framework of the Minimalist Program (Chomsky (2013, 2015)), Merge, which freely applies, takes two objects, say α and β , and forms the simplest set $\{\alpha, \beta\}$. Although this conception of Merge does not yield labels (and projections), the interpretive systems (i.e. the SM and CI systems) require labels for interpretations. To label a syntactic set, minimal search, conforming to a third-factor principle (i.e. Minimal Computation), locates one head (e.g. C or T) and selects it as a label, where the other possible head is invisible or simply does not exist. For example, $\{\text{DP}, v^*P\}$ is labeled as v^*P because the lower copy **DP** is, by definition, invisible. In addition, labeling by minimal search locates a pair of matched features $\langle \text{valued}, \text{unvalued} \rangle$ in the so-called Spec-Head relation (see Chomsky (2013, 2015), and EKS (Epstein, Kitahara and Seely) (2017)) and selects its shared-prominent feature (e.g. $\langle Q, Q \rangle$ and $\langle \text{Phi}, \text{Phi} \rangle$) to be a label when identifying the label of a symmetric structure $\{XP, YP\}$. This shared-prominent-feature option is called agreement. According to EKS (2017), *wh*-phrases bear uQ (unvalued Q), and C_Q bears lexically/inherently valued Q . Given these basic assumptions, the structure and derivation of *who did John hit* are as follows:

- (1) $\{\alpha \text{ who}_{[uQ]}, \{\beta \langle T_{do}, C_Q \rangle, \{\text{John}, \{\mathbf{T}_{do}, \{\text{John}, \{\langle R_{hit}, v^* \rangle, \{\delta \text{ who}_{[uQ]}, \{\gamma \text{ R}_{hit}, \text{who}_{[uQ]}\}\}\}\}\}\}\}$
- i. Merge externally forms $\{\gamma \text{ R}_{hit}, \text{who}_{[uQ]}\}$ and internally forms $\{\delta \text{ who}_{[uQ]}, \{\gamma \text{ R}_{hit}, \text{who}_{[uQ]}\}\}$.
 - ii. Merge externally forms $\{\text{John}, \{v^*_{[uPhi]}, \{\delta \text{ who}_{[uQ]}, \{\gamma \text{ R}_{hit}, \text{who}_{[uQ]}\}\}\}\}$.
 - iii. R_{hit} inherits features from v^* , and labeling by minimal search takes place: δ and γ are labeled as $\langle \Phi_i, \Phi_i \rangle$ and RP, respectively ($\text{who}_{[uQ]}$ is assumed to bear a set of lexically/inherently valued phi-features).
 - iv. Pair-Merge internally forms $\langle R_{hit}, v^* \rangle$ with v^* affixed: such a v^* becomes invisible, and the phase-hood is activated on R_{hit} . Thus, the complement of R_{hit} gets transferred.
 - v. Merge externally and internally forms $\{\alpha \text{ who}_{[uQ]}, \{\beta C_Q, \{\text{John}, \{T, \{\text{John}, \{\langle R_{hit}, v^* \rangle, \{\delta \text{ who}_{[uQ]}, \{\gamma \text{ R}_{hit}, \text{who}_{[uQ]}\}\}\}\}\}\}\}$.
 - vi. T inherits features from C_Q , and labeling takes place: α and β are labeled as $\langle Q, Q \rangle$ and $C_Q P$, respectively (note that the Q feature on C_Q does not disappear even after feature inheritance). Importantly, this $\langle Q, Q \rangle$ is interpreted as a wh-question by the interpretative systems.
 - vii. Pair-Merge internally forms $\langle T_{do}, C_Q \rangle$, and Transfer applies.

However, these premises readily raise a problem of feature sharing in echo questions as in (2):

- (2) a. A: I hit ASIMO.
B: You hit what? (echo-question)
- b. A: John kissed Mary.
B: John kissed who? (echo-question)

Given that feature sharing holds for a pair $\langle vF, uF \rangle$ in the Spec-Head relation, the uQ of QP , which is a wh-phrase, remains unshared with a Q -feature. This uQ violates Full Interpretation and causes a derivation to crash.

- (3) The uQ of QP remains unshared with Q in a structure of a *wh-in-situ* question such as follows:
 $\{C_Q, \{\text{you}, \{T, \{\text{you}, \{<R_{hit}, v^*>, \{\gamma \text{ QP}_{\text{what} [\text{uQ}], \{\text{RP } R_{hit}, \text{QP}_{\text{what} [\text{uQ}]}\}}\}}\}}\}$.

To solve the problem of feature sharing in echo questions above, I propose the following structure and derivation of the echo question:

- (4) $\{\alpha \text{ C}, \{\text{you}, \{\text{T}, \{\text{you}, \{\langle \text{R}_{\text{hit}}, \text{v}^* \rangle, \{\beta \text{ QP}_{\text{what}} [\text{uQ}], \{\gamma \text{ R}_{\text{hit}}, \{\delta \text{ QP}_{\text{what}} [\text{uQ}], \{\epsilon \text{ CQ}, \text{QP}_{\text{what}} [\text{uQ}]\}}\}}\}}\}}\}$
 i. Merge externally forms $\{\epsilon \text{ CQ}, \text{QP}_{\text{what}} [\text{uQ}]\}$ and internally forms $\{\delta \text{ QP}_{\text{what}} [\text{uQ}], \{\epsilon \text{ CQ}, \text{QP}_{\text{what}} [\text{uQ}]\}\}$.
 ii. Labeling by minimal search takes place: δ and ϵ are labeled as $\langle \text{Q}, \text{Q} \rangle$ and CQP , respectively.

- iii. The complement of C_Q gets transferred.
- iv. Merge forms $\{\text{you}, \{v^*, \{\beta \text{ QP}_{\text{what}}, \{\gamma \text{ R}_{\text{hit}}, \{<Q, Q> \text{ QP}_{\text{what}}, \{\text{CoP } C_Q, \text{ QP}_{\text{what}}\}\}\}\}\}\}$.
- v. The relevant computations in the v^*P phase occur.
- vi. Merge forms $\{\alpha \text{ C}, \{\text{you}, \{T, \{\text{you}, \{<\text{R}_{\text{hit}}, v^*>, \{<\text{Phi}, \text{Phi}> \text{ QP}_{\text{what}}, \{\text{RP } \text{R}_{\text{hit}}, \{<Q, Q> \text{ QP}_{\text{what}}, \{\text{CoP } C_Q, \text{ QP}_{\text{what}}\}\}\}\}\}\}\}\}$.
- vii. T inherits features from C, and labeling takes place: α is labeled as CP.
- viii. Transfer applies.

Step (i) is remarkable. This application of external and internal Merge is logically available under freely applying Merge. This merger leads to the shared-prominent-feature agreement between uQ and Q in step (ii) (note that C_Q is a phase head, and labeling occurs when phase-by-phase Transfer applies). Therefore, the problem in (3) is solved. Interestingly, the structure in (4) has two C heads, C for declaratives and C_Q for interrogatives. The labels given by these two C heads seem to cause the interpretation of echo questions.

The problem of feature sharing in (3) could occur in *quiz-show* questions, as *wh*-phrases remain *in situ*.

- (5) They thought JFK was assassinated in which Texas city? (Chomsky (2013: 44))

We can explain this case as well by assuming that the relevant parts of the structure and derivation of (5) are essentially similar to those of (4). Thus, the problem in (3) does not occur in *wh-in-situ* questions.

In an *in-situ* language, such as Japanese, *wh*-phrases can remain *in situ* in *wh*-questions:

- (6) Taro-wa dare-o tatakimashi-ta ka?
 Taro-TOP who-ACC hit-PAST C_Q
 ‘Who did Taro hit?’

The analyses above suggest that in Japanese, C_Q and a *wh*-phrase externally merge in a *wh*-question. The relevant part of the set-theoretic notation for the structure of this construction is as follows:

- (7) $\{\alpha \{\beta \text{ Taro-wa}, \{\delta \text{ QP}_{\text{dare } [uQ]}, \{\epsilon \text{ QP}_{\text{dare } [uQ]}, C_{ka} [Q]\}\}, \text{tatakimashi-ta}\}, C_{ka} [Q]\}$

As in (4), C_Q first externally merges with $\text{QP}_{[uQ]}$, and $\text{QP}_{[uQ]}$ then internally merges with ϵ , which is going to be labeled as C_{Q_P} . Given that agreement effects are the instantiation of the Spec-Head relation, this internal merger is essential to share Q -features between the head *ka* and the head of *dare*. Because of this feature sharing, δ is labeled as $<Q, Q>$. Crucially, C_{ka} further internally merges with β as illustrated in (7). In other words, the matrix C_Q generates within v^*P phase and moves to $\{\beta \text{ Taro-wa} \dots\}$. Since C_Q is the closest head for labeling α , the entire structure or set α is labeled as C_{Q_P} , which leads to the interpretation of general questions. The interpretation of *wh*-questions is yielded by the label $<Q, Q>$ (i.e. δ).

The analyses in (4) and (7) suggest that C_Q does not internally merge with the matrix α in English because it causes the agreement failure. In (4), for example, the external argument *you* must share phi -features with T inheriting $u\text{Phi}$ from C. It seems that sharing the prominent feature Q makes the $u\text{Phi}$ of C_Q inactive as a secondary effect of $<Q, Q>$. If this assumption is on the right track, then T cannot inherit the active $u\text{Phi}$ from C_Q after C_Q has internally merged. In contrast, in a language without the phi -agreement such as Japanese, C_Q can internally merge, as external arguments do not share phi -features with T.

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The Verbal Noun Use of English Borrowed Prepositions in Japanese Recipe Names

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1. Introduction

Shimada and Nagano (2014) consider the following example of the borrowed preposition *on* in Japanese recipe names taken from Cookpad (<http://cookpad.com/>), a popular Japanese Internet recipe site:

- (1) Biinzu *on* toosuto
(lit.) beans *on* toast
'toast topped with beans'

The head of the compound is the NP in the final position, namely, "toast." Shimada and Nagano (2014) analyze the uses of *on* in (1) as "verbal nominals," as illustrated in (2), rather than as an "English preposition," as in (3). In this example, the borrowed preposition *on* functions as a Japanese verbal nominal with the meaning "*nose(-ta)*," modifying the following heads.

- | | |
|------------------------------------|------------------------------------|
| (2) [Modifier + <i>on</i>] + Head | (<i>on</i> = Verbal Nominal) |
| (3) Modifier + [<i>on</i> + Head] | (<i>on</i> = English Preposition) |

The preposition *in* in example (4) below functions similarly with the meaning of "*iri(-no)*." However, a closer look at the examples involving *in* highlight another type where the preposition *in* is used as an English preposition with a locative complement, as given in (5) below:

- (4) Chiizu *in* hanbaagu
(lit.) cheese-*in* hamburger
'hamburger with cheese inside'
(5) Butanikukaraage *in* syanhai
(lit.) fried-pork *in* Shanghai
'fried-pork in Shanghai'

This paper validates the assumption through psycholinguistic analyses for positing two types of inherent structures behind English prepositional borrowings in Japanese by referring to the unique behavior of borrowed *with*.

2. Contrasts between verbal nominal and English prepositional uses of *in*

The analysis proposed by Shimada and Nagano encourages us to predict that the other structural variances will remain acceptable as far as the complement-verb relationship is held within the compound. This prediction seems to be correct at least intuitively, as is evident from example (6) below from Cookpad, when compared to the case in (7). The point here is that the example (6) was actually produced as an acceptable recipe title by a young Japanese contributor who likes cooking and posted on the recipe site. Note that the judgments for (7) are my own.

- (6) Tonkatsu *in* chiizu¹ [Head + *in* + Modifier]
(lit.) pork cutlet in-cheese
'pork cutlet containing cheese'

¹ <https://cookpad.com/recipe/4504455>

- (7) a. *Chiize tonkatsu *in*/**in* tonkatsu chiize
[Mod + Head + *in* / *in* + Head + Mod]
b. ?Tonkatsu chiizu *in*/?*in* chiize tonkatsu
[Head + Mod + *in* / *in* + Mod + Head]

However, this pattern does not apply to example (5). Since English prepositions have a rigid structure—that is, a preposition followed by a (locative) complement—the marginal status given to (7b) should be lower in the case involving English preposition because of the difficulty in parsing. Moreover, any structure other than the [Head + in + Mod (= Place)] should be worse.

In order to examine whether the predicted contrasts between verbal nominal and English prepositional uses are real, Ono (2017) conducted a survey on acceptability judgement. A total of 101 students (men: 15, women: 86) participated in this questionnaire survey. Statistically significant difference was observed for the acceptability between the two structures in many cases.

3. Unique behavior of *with*

The borrowed preposition *with* shows a unique characteristic. We obtained 5,847 instances of *in* on Cookpad. Of these, 3,499 instances (59.8%) were of the structure [Mod + *in* + Head], while 2,079 instances (35.6%) were [Head + *in* + Mod]. In the case of *with*, however, the number of instances of [Mod + *with* + Head] were only 56 (4.7%) out of 1,192 instances. Almost all of the instances (1,113; 95.1%) were of the structure [Head + *with* + Mod]. This fact might force us to assume that there is only one English structure available in the case of *with*, since the frequency of the former is less than 5% and the statistically exceptional data might be discarded. Thus, the tentative description on *with* might be that there is NO possibility to use *with* as [Head + *with* + Mod].

However, the existence of the small number of “acceptable” instances encourage linguists to examine the possibility for positing the two structures, as observed for *in* and *on* mentioned above. Specifically, the question is whether or not the exceptional use of *with* in (9) below can be analyzed as “Verbal Nominals” as analyzed for *in* and *with*. Then, the question is whether we can assume that the exceptional example like (8) is the one involving verbal nominal use with the meaning of *soe(-te)*:

- (8) toofu *with* okonomiyaki (shiifuudo)² [Modifier + *with* + Head]
 (lit.) tofu *with* okonomiyaki (seafood)
 ‘okonomiyaki with tofu (and seafood) into it’

Another similar acceptability judgement survey conducted on the same participants demonstrated that the contrast was real and the same parallelism was observed between *with* and *in/on*. On the basis of these findings, this paper raises a question about what is the mechanism of blocking the use of [Mod + *with* + Head] in the case of *with* given the assumption of similarity between them.

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² <https://cookpad.com/recipe/2251417>

The Role of the Past Tense Morpheme in Japanese Epistemic Conditionals

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It has been argued that the Japanese language does not have an explicit marker of counterfactuality in the antecedent clause (Arita 2006, 2009). On the other hand, it is proposed that some languages such as English and Modern Greek convey counterfactuality by past tense morphology in the consequent clause (Iatridou 2000).

In this paper, I will adopt as a working hypothesis that in Japanese, the past tense morpheme in the consequent clause is also playing a role to signal counterfactuality (Ogihara 2014). Through investigating the interpretations between the subordinate clauses (i.e. the antecedents) and the main clauses (i.e. the consequents) of the conditional sentences, I will propose that Japanese conditionals are ambiguous between epistemic readings and counterfactual readings of the type discussed in Dancygier (1998) and Arita (2009). They can be disambiguated by the past tense *-ta* form, i.e. either by putting *-ta* on the modals themselves or by putting *-ta* on the propositions that the modals select. They can also be disambiguated by *noni/-ni* endings or the semantic or pragmatic interpretation of the proposition. I will make the following proposals for the consequent clauses of Japanese conditionals.

- 1) Modals which can be made into past tense, may signal counterfactuality.
 - 2) Modals that cannot be made into past tense morphologically, but which may select a past-tensed proposition, can signal counterfactuality.
 - 3) In *-nara* conditionals which express simultaneous events, an agreement-like phenomenon of tense marking is observed.
- 1) is illustrated by the sentence 1'). "*Hazu-da*" is one of the deontic modals that can be made into past tense.

1') *Taroo-wa [mosi mania-tta-nara] [ku-ru] hazu-da-tta*
-top if in time -pst-NARA come-pres HAZU-cop-pst
“If (he) was in time, Taroo would have come.”

- 2) is illustrated by the example 2'). "*Daroo*" is treated as one of the epistemic modals that cannot be made into past tense, but may select a past-tensed proposition.

2') *Mosimo Einstein-ga ik-itei-tara [a-e-ta/*a-e-ru] daroo.*

if -nom live-asp-TARA see-po-pst/*see-po-pres DAROO

“If Einstein were alive, (I) could have seen (him).”

3) is illustrated by the example 3'):

3') *Mosi [John-ga san-nen-mae ki-ta]-nara, [Mary-wa kare-o*

If nom 3-years-ago come-pst-NARA -top go he-acc

**yurus-u/yurusi-ta] daroo.*

**forgive-pres/ forgive-pst DAROO*

“If John came 3 years ago, Mary would have forgiven him.”

What looks like a counterexample (3” below) to the claim in 3) actually shows that the events described by the antecedent and the consequent are not simultaneous. The event in the antecedent precedes the event in the consequent in time sequence. Time adverbials are shown explicitly in 3”).

3”) *Keiki-ga kaihukusi-ta-nara, kojinsuohi-wa nobi-ru-daroo.* (Arita 1999)

3”) *Kyonen keiki-ga kaihukusi-ta-nara, korekara kojinsuohi-wa nobi-ru-daroo.*

“If the economy had recovered last year, from now on individual consumption will grow.”

Thus the claim in 3) still stands.

Section 1 discusses morphological restrictions on modals in the consequent clause. Section 2 analyzes the time relations in the two types of conditionals. Section 3 presents concluding remarks.

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How Speakers Use “*Nanka*” in Quasi-Internal Monologues during Interactional Discourses

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Japanese speakers often use the word *nanka* in social interactions. According to *Daijirin* (1995), *nanka* literally means “some, any, something, and anything.” Obviously, in social interactions, *nanka* carries more meaning than it does in its dictionary definition; it can reveal a speaker’s feeling of uncertainty, it can indicate vagueness, or it can introduce new information to a recipient (Uchida 2001).

In addition, *nanka*, helps clarify a statement’s modality, is often used in a form of internal monologue. Regarding the internal monologue, there are two possible situations in which a speaker produces his or her internal monologue. The first situation is that the monologue is uttered when the person is literally alone in a room. In the second situation, the person is surrounded by other participants at the point in time when the monologue is produced. In this second situation, the monologue is called “a quasi-internal monologue” (Noda 2006). Here is an artificial quasi-internal monologue in which *nanka* is uttered: “*nanka, are doko yat-ta kana* (‘*Nanka*,’ where did that thing go?).” Upon hearing this quasi-internal monologue, a recipient might respond, “*ojii-chan ga yon-de-ta-yo* (Grandpa was reading (a newspaper.)).” This interaction seems to be seen easily even the prior speaker’s vocal sound was not obviously directed to the possible recipient. The (quasi-)internal monologue occurs within one’s mental state where the utterance floats fluidly in and out of the speaker’s thinking and speaking areas (Vygotsky 1962). Shikano (2016) states that the quasi-internal monologue works as a communicative function even in the presence of others. Therefore, in this study, the use of *nanka* in quasi-internal monologues is discussed.

The data for this study came from a Japanese TV program called *Tsurube no kazoku ni kanpai* (*Tsurube’s Toast to Families*) from NHK (Nippon Hoso Kyokai). In this study, fifteen episodes, each of which run about 75 minutes, were analyzed. Each episode follows a host and fifteen different guests who travel to a rural area of Japan. When they arrive at a designated country, they wander around town having conversations with the local people.

In our analysis of the data, the following linguistic features of *nanka* were observed within the context of a quasi-internal monologue:

(1) *Nanka* often occurred with the sentence final particle *-kana*, which is often used to form a question. Within sentences that use *-kana* to form a question, the speaker reveals one’s disorganized thoughts. This kind of quasi-internal monologue leaves space for the recipient to presume what the speaker is thinking about. In other words, the recipient tries to construct what the speaker is referring to. Because of the nature of monologue, use of a quasi-internal monologue reduces the speaker’s utterance’s implied expectation that the recipient will respond. Quasi-internal monologue serves as a way of presenting one’s own thoughts without imposing on others.

(“*Nanka yat-ton no chau kana* (I wonder if (he) should be doing something.)”)

(2) *Nanka* presents the speaker’s own idea or indicates a suggestion in the quasi-internal monologue. When *nanka* is produced in a quasi-internal monologue, it is used to express the speaker’s inner feelings, or just simply it marks a direct quotation, accompanied with the final particles *-tte* or *-toka*. These quasi-internal monologues externalize the speaker’s dilemma for his or her desire. (“*nanka chot-to koohii demo non-n-de mitai-na, nan-tut-te* (I don’t know why, but somehow (I) prefer to take a sip of coffee or something like that.)”)

(3) *Nanka* is expressed together with monologic interjections such as “*aa* (ah),” “*waa* (wow),” and adjectives such as “*natsukashii* (good old),” or “*kirei* (nice).” In these situations, speakers tend to dismiss the polite forms *-desu* or *-masu* since the speaker’s inner feelings are accidentally externalized unconsciously that the utterances are not directed to a particular recipient. Within the context of interjections, the speaker monologically and subjectively expresses his or her own perspectives, inner feelings, or opinions. (“*waa, sugoi kirei-na, nanka ii-nioi ga suru* (Wow, very nice, somehow smells nice.)”)

The results indicate that *nanka* is used in quasi-internal monologues to reveal the speaker’s uncertainty about his or her desires, inner feelings, or opinions that they want to create a comfortable environment in which they could continue traveling. Quasi-internal monologues that used *nanka* revealed the speaker’s comments or thoughts without imposing them on the recipient. In addition, the utterance itself (*nanka*) became oblique to the recipient, even though it was directed at the recipient, which is why, in quasi-internal monologues, the utterance no longer requests the recipient’s reply. Furthermore, it is up to the recipient whether or not he or she replies.

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A Generative Analysis of Reduced Relative Clauses in English

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1. Introduction

The purpose of this paper is to attempt to reveal the syntactic structure of reduced relative clauses in English within the framework of generative grammar. I examine the noun phrase postmodified by the present participle of a verb, its object/argument and an adjunct, as shown in (1). I refer to the bracketed part in (1) as *reduced relative clause*, and the underlined part in (1) as *head noun*.

- (1) a. Look at the boys [playing tennis over there].
b. Tell me about a man [living in Tokyo].

This paper proposes two arguments. First, reduced relative clauses are Aspect Phrase (AspP) whether they express an ongoing/habitual action or a state, and the aspect that they represent is determined by what feature(s) the AspP has. Second, they are AspP that is selected by NP that is in turn selected by DP with the head noun being located in the specifier of NP.

There are many generative analyses of reduced relative clauses, but just a few of them give their close derivation. This paper adopts Thompson's (2001) analysis which argues for the AspP analysis of reduced relative clauses because they disallow the overt complementizer and sentence-level adverbs. Her analysis is insufficient in that she does not reveal what role the Asp plays and does not give the close derivation of reduced relative clauses. This paper provides new analyses to solve these problems.

2. The Function and Role of Asp

Following Van Valin and Lapolla (1997: 40), I assume that aspect expresses "the internal temporal structure of the event itself." That is to say, it shows whether the event is completed, or is ongoing, or is recurring. Based on the assumption that AspP bears this role, I assume the clausal structure in (2). AspP expresses whether the event represented by vP is ongoing or not, habitual or not, and completed or not.

- (2) [AspP Asp [_{vP} Subj [_{v'} V-v]]]

Next, I examine the function of the present participle suffix *-ing*. I suggest that *-ing* merges in the head of Asp, bearing the [+progressive] feature. After it merges and the Subject noun raises into the upper position, *-ing* lowers onto the verb in PF under adjacency without undergoing agreement. It is traditionally assumed that inflectional suffixes adjoins to the host by undergoing agreement, but this paper distinguishes *-ing* from other inflectional suffixes such as *-(e)d* and *-(e)s* because the latter suffixes are involved in agreement and Case assignment, while the former suffix is not.

Next, I claim that an ongoing action is realized because the AspP has the [+progressive] feature when *-ing* adjoins to the verb. I assume that stative verbs bear the [+stative] feature and adverbs expressing frequency or habit bear the [+habitual] feature. Following Mizuno (1999: 320, 321), I assume that adverbs expressing frequency or habit are licensed in the head of Asp and adjoins to Asp. Thus, at the time when *-ing* adjoins to the action verb such as *play*, the syntactic structure of reduced relative clauses is (3).

- (3) [[XP Subj_i] [AspP [Asp' F-Adv_[+habitual] [Asp' t_j] [_{vP} t_i [_{v'} V-v-*ing*_[+progressive]]]]]]
(F-Adv=Frequency Adverbs)

The aspect that the reduced relative clause represents is determined by what feature(s) the AspP has, which

I illustrate below with the examples in (1) and (4).

- (4) a. His grotesquely amusing account presents the entire family [frequently communing with ghosts]. (cf. Collins, brbooks, BB-Ym02210, biog)
- b. But many more are known only in a heavily condensed form [often consisting of no more than a few lines of text]. (cf. Collins, brbooks, BB-Bm89-693, culture)

In (1a), the AspP *playing tennis over there* represents an ongoing action because it has the [+progressive] feature, which is carried by the present participle of an action verb *play*. In (4a), where there is an adverb expressing frequency before the present participle in the reduced relative clause, the AspP *frequently communing with ghosts* represents a habitual and ongoing action because it has the [+habitual] and [+progressive] features; the former feature is carried by *frequently*; the latter feature is carried by *communings*. In (1b), where the reduced relative clause consists of the present participle of a stative verb and its argument, the AspP *living in Tokyo* expresses an ongoing state because it has the [+stative] feature, which is carried by a stative verb *live*. In (4b), where a stative verb occurs with an adverb expressing frequency in the reduced relative clause, the AspP *often consisting of ...* denotes that a state often occurs. This is because the AspP has the [+habitual] and [+stative] features; the former is carried by *often*; the latter is carried by *consist of*. ... I assume that the suffix *-ing* does not make semantic contribution when it adjoins to stative verbs.

3. A Head Noun Raising Account

Following Cecchetto and Donati (2015: 77-79) in assuming that NPs can merge in the complement of unaccusative and passive verbs in past participle reduced relative clauses since it is not the Case position, as in (5), I claim that NPs can merge in the specifier of ν P because it is also not the Case position.

- (5) the [_{NP} philosopher [_{VP} admired ~~philosopher~~ (by Marx)]]
- (cf. Cecchetto and Donati's (2015: 77))

Extending Radford's (2016: chapter 7) analysis to the reduced relative clause, I propose that it has a structure in (6) wherein D takes NP as its complement, which in turn selects AspP.

- (6) [DP D [_{NP} NP_i [_{NP'} Ø] [_{AspP} [_{Asp'} F-Adv_[+habitual] [_{Asp'} t_j] [_{ν P} t_i [_{ν'} V- ν -ing_[+progressive]]]]]]]]

The derivation of the reduced relative clause proceeds as follows. An NP which merges in the specifier of ν P moves to the specifier of the external NP to become the head noun postmodified by the reduced relative clause AspP. This movement is triggered by AGREE between the determiner and the NP. The determiner serves as Probe because it bears an uninterpretable N feature which is related to categorial selection, and the NP serves as Goal because it has an interpretable N feature.

4. Conclusion

This paper discussed the derivation of reduced relative clauses and the function and role of the Asp. It was claimed that the movement of the head noun NP to the specifier of the external NP is allowed because the specifier of ν P is not the Case position.

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Eliminating String-Vacuous Movement: C-Deletion and Phasehood Inheritance

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Adopting the framework of Chomsky (2013, 2015), this paper proposes an analysis in which string-vacuous movement of subjects is eliminated due to C-deletion and phasehood inheritance. It is argued that this analysis captures peculiar properties of subjects observed in three constructions in which string-vacuous movement of subjects has been postulated.

Chomsky (2015) proposes for null-*that*-clauses C-Deletion and Phasehood Inheritance, according to which C is deleted and phasehood is inherited from C to T. This analysis is extended to *wh*-subject constructions by Tanigawa (2017), as illustrated in (1b).

(1) a. Who saw Mary?

b. $\{ \beta = \bar{C}_{[u\phi][Q]} \} [\alpha \text{ who}_{[\phi][uQ]} \text{ T}_{[u\phi][Q]} [\text{v}^* \text{P } t_{\text{who}} \text{ see Mary }]] \Rightarrow$

In (1b), the *wh*-subject, which bears an unvalued Q-feature [uQ], does not undergo string-vacuous movement from SPEC-T to SPEC-C. Instead, it remains in SPEC-T, while a valued Q-feature [Q] is inherited from C to T with unvalued ϕ -features [u ϕ]. This feature inheritance empties C, which elucidates the deletion of C and β and the inheritance of phasehood from C to T.

Building on Tanigawa's (2017) analysis, this paper proposes that C-deletion and phasehood inheritance take place in other types of A'-movement, Negative Inversion (hereafter, NI) and Topicalization (hereafter, TOP). Regarding NI, this paper assumes that unmarked examples of NI such as (2a) have a derivation in (2b), in which negative elements bearing an unvalued focus feature [uFoc] move up to SPEC-C and the head C is endowed with a valued focus feature [Foc].

(2) a. Only to Mary did John give any flowers.

b. $\{ \beta \text{ only to his girlfriend}_{[uFoc]} \} \bar{C}_{[Foc]} = \text{did } [\alpha \text{ John}_{[\phi]} \text{ T}_{[u\phi]} \text{ give ... } t_{\text{only}}]]$

Based on this assumption, this paper proposes that negative subjects such as in (3a), even though they are assigned [uFoc], remain in SPEC-T due to the inheritance of [Foc] from C to T.

(3) a. Only John gave any flowers to Mary.

b. $\{ \beta = \bar{C}_{[u\phi][Foc]} \} [\alpha \text{ only John}_{[\phi][uFoc]} \text{ T}_{[u\phi][Foc]} t_{\text{only}} \text{ give any flowers ... }] \Rightarrow$

Consequently, as shown in (3b), C and β undergo deletion, and phasehood is inherited from C to T.

The significant advantage of this analysis is that it provides a straightforward account for the difference between (2a) and (4) in the application of Subject-Auxiliary Inversion (hereafter, SAI).

(4) *Only Mary does like John.

In the proposed analysis, SAI must be suspended in (4) due to the disappearance of C, the target of the inverted auxiliary. In addition, the proposed analysis is appealing in that it deals with the licensing of negative polarity items (hereafter, NPIs) by *only*-subjects. Progovac (1993) claims that *only*-phrases license NPIs if they occupy SPEC-C, i.e. A'-position, as in (2a). In fact, as shown in (5), *only*-objects, which do not undergo overt movement to SPEC-C, do not license NPIs.

(5) ?*John gave only his girlfriend any flowers. (Progovac (1993:176))

In this respect, a question arises as to why the *only*-subject in (3b) can license *any* even though it is located in SPEC-T. This problem is handled successfully by phasehood inheritance, according to

which the head T is reanalyzed as the phase head and accordingly, SPEC-T is reanalyzed as the phase edge, i.e. the derived A'-position. In light of the proposed analysis, *only*-subjects count as proper NPI licensers by occupying the derived A'-position.

- (6) a. Kono syasin-wa John-ga totta.
This picture-TOP John-NOM took
'This picture, John took.'
- b. $\llbracket \text{Top} \rrbracket = [\beta \text{ kono syasin-wa}_{[\text{uTop}]} [\alpha \text{ John-ga } t_{\text{obj.}} \text{ totta}] \text{ T}_{[\text{Top}]}] \in \llbracket \text{Top} \rrbracket =$

As for the subject-prominent property of English, this paper adopts the standard assumption that [u ϕ], which is inevitable in English, is inherited from C to T. Yet, this paper departs from traditional analyses in that [Top] as well as [u ϕ] is inherited from C to T when subjects bear [uTop], as in (7b).

The analysis in (7b) successfully explains the difference in binding between (8a) and (8b) by adopting Watanabe's (1993) CP-recursion structure.

- (9) a. $[\gamma \text{ C1}_{[\text{u}\phi][\text{Top}]}+\text{C2} \quad [\beta \text{ himself}_{[\text{uTop}]} \quad t_{\text{C1}} \quad [\alpha \text{ Mary}_{[\phi]} \quad \text{T}_{[\text{u}\phi]} \quad \text{like} \quad]]]$
 b. $[\gamma \text{ C1}_{[\text{u}\phi][\text{Top}]}+\text{C2} \quad [\beta \quad t_{\text{C1}} \quad [\alpha \text{ himself}_{[\phi][\text{uTop}]} \quad \text{T}_{[\text{u}\phi][\text{Top}]} \quad \text{like Mary} \quad]]]$

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Be on the point of -ing and its variant forms in Early Modern English

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Be on the point of is said to be a calque of the French phrase *être sur le point de* and attested as early as the 13th century. However, its form in early English is unstable as indicated by OED (s.v. *point*, n.¹), Poutsma (1926: 728) and Mossé (1938: 162). It shows variation in the choice of the preposition (*on*, *upon*, *at*, etc.), the presence or absence of *the* before *point*, and the pattern of complementation (*of doing* or *to do*). This study deals with the rivalry between those variant forms in Early Modern English and reveals its details with the data obtained from searching the EEBO corpus (Davies (2017)). It also aims to tackle the question why *be on/upon the point of doing* became the norm while other forms, especially the *to do*-variants, died out.

There are three main results from the corpus search. First, the choice of the preposition is different depending on the pattern of complementation. In the *of doing*-variants, the most frequent preposition is *upon* as in (1a–b); meanwhile, in the *to do*-variants, it is *at* as in (2a–b).

- (1) a. and they were euen **vpon the point of opening** his chamber doore where he laye (1570)
b. whether it be likely, that hannibal was **vpon point of flying** out of Italie, when the romans pressed him to fight (1617)
- (2) a. johan launoy who was in the steple / seinge hym selfe **at the poynt to be brent** / cryed to them without / raunsome raunsome: and offred his cote / whiche was full of florens to saue his lyfe: (1523)
b. i now desyre your graunt, that i may open Fyrst tale which nowe is **at poynt to be spoken** (1534)

Second, variants with *the* are more frequent than those without it, regardless of the pattern of complementation (Fig. 1). Third, the *to do*-variants are frequent up to the end of the 16th century, but in the 17th century, the *of doing*-variants gradually become dominant (Fig. 1). These details of the rivalry have not been reported in the previous literature.

The rise of *upon the point of doing* in the 17th century may be explained in terms of the emergence of complex prepositions, which became productive in Early Modern English (Akimoto (1999), Hoffmann (2005)). As shown in Fig. 2, the overall frequency of the word sequence *upon the point of* gradually rises throughout the Early Modern English period and that of *upon the point of doing*, in tandem, begins to rise in the early 17th century. The figure also shows the rise of two complex prepositions with a structure similar to *upon the point of*, which, according to Hoffmann (2005), were established 1500–1700. This data may suggest the possibility that as complex prepositions gained more and more popularity, the *to do*-variants were taken over by

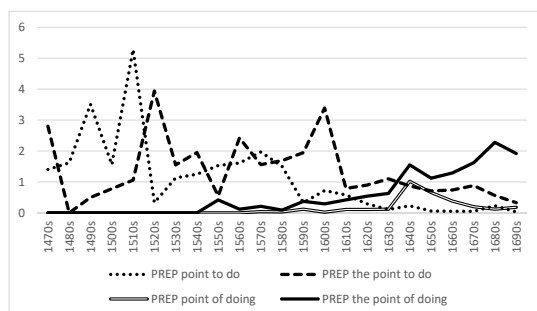


Fig. 1 Frequency of PREP *(the) point to do* and PREP *(the) point of doing* in EEBO (per mil)

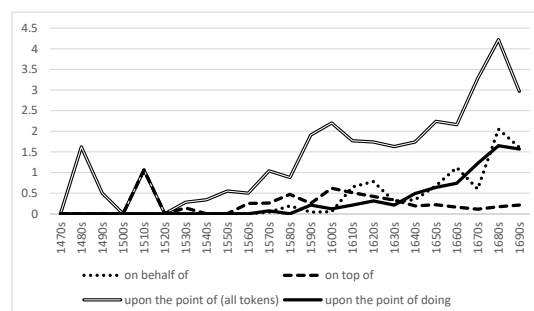


Fig. 2 Frequency of *upon the point of*, *on behalf of*, and *on top of* in EEBO (per mil)

upon the point of doing and finally abandoned. In other words, the decline of the *to do*-variants was, at least in part, caused by change in the grammatical structure of English.

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Correlations between proficiency and masked priming facilitation in Japanese learners of English

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Measuring susceptibility to masked priming in word recognition tasks is a common method of gleaning information about how subjects decode and recognize individual words. Williams (2012) used a masked priming lexical decision paradigm to determine the efficacy of an English for Academic Purposes (EAP) program at an English-medium university in north-eastern Japan. In a pre/post EAP coursework test design, he demonstrated that the intensive English instruction positively impacted students' susceptibility to masked phonological prime facilitation effects (i.e., in the pretest, they showed no such effects, but after the EAP program, they did), thereby indicating improvements in the efficiency of phonological decoding during word reading; however, the impact on semantic priming was decidedly more muted, with no priming facilitation ever apparent. These effects were interpreted to validate the work being done by the EAP program, but called into question why semantic priming effects seemed relatively unaffected by formal study. Such results, however, leave open the question of whether or not these patterns are merely a result of proficiency level, or if they are more broadly indicative of L1-influenced reading patterns in Japanese learners of English. In order to test this, the current study recreated Williams' (2012) research methodology, conducting pre/post EAP coursework masked priming lexical decision tests with 29 Japanese EAP students at an English-medium university in Japan. The subjects for this study reported TOEFL iBT scores 10-20% higher than that of the learners in Williams' original study. By cross-comparing the relative degree of priming facilitation found between the two studies, it was possible to ascertain whether or not a direct correlation between relative proficiency and priming facilitation could be measured. The relative levels of both semantic and phonological priming facilitation showed no statistically significant difference between groups, indicating that the slow development (vis-à-vis learners of English from other L1 backgrounds) of priming facilitation effects in phonological masked priming and the complete absence of facilitation in semantic masked priming may be fixed characteristics of Japanese learners which stem from L1 literacy interference.

Some Comparative Notes on Ditransitive Verbs and Argument Structure

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This study investigates the syntactic encoding of ditransitive constructions from a comparative view; specifically, by examining the peculiar properties observed in Hakka ditransitives, we explore the current theories on ditransitives and discuss the possible implications on linguistic variation.

In generative grammar, the proper derivation of ditransitive constructions have long been a subject of heated debate. Most of the controversies stem from the fact that complements of ditransitive verbs in many languages display an ordering alternation and apparently two distinct structures are allowed: the prepositional dative (1a) (hf. Dative alternant) and the double object constructions (1b) (hf. DOC alternant).

(1) a. John gave an apple to Marry.

b. John gave Mary an apple.

In Hakka, interestingly, there is yet another order that is used productively. As shown in (2), Hakka exhibits a ‘reversed’ order of DOC (hf. RDOC), in which the direct object (i.e. the theme) immediately precedes the indirect object (i.e. the goal).

(2) a. *gi bun ngai rhid gi bid* (DOC)

he BUN me one CL pen

‘He gave me a pen.’

b. *gi bun rhid gi bid ngai* (RDOC)

he BUN one CL pen me

Lit. ‘He gave a pen me.’

I argue that the RDOC should be analyzed as a Dative variant with a covert dative marker based on its similarities to the regular Dative alternant: just as has been widely observed with the Dative construction, in RDOC the goal argument is not limited to animate entities as in (3) (Green 1974); it cannot be associated with a causative meaning (4) (Oehrle 1976); the theme argument needs to c-command the goal argument (5) (Barss & Lasnik 1986).

(3) a. #John sent Boston a letter. (DOC)

b. John sent a letter to Boston. (Dative)

c. *apo gi qien toibed* (RDOC)

grandma send money Taipei

‘Grandma sent money to Taipei.’

(4) a. Nixon’s life gave Mailer a book. (DOC)

b. #Nixon’s life gave a book to Mailer. (Dative)

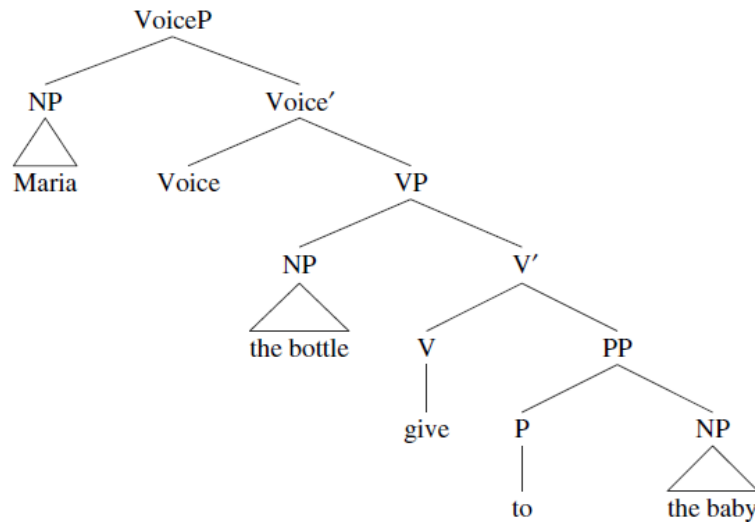
c. *#lia-siicin m-voi bun teuna-tung gi* (RDOC)

this-thing Neg-will BUN headache he
 Intended: 'This matter won't give him a headache.'

- (5) a. I gave every check to its owner.
 b. ??I gave his check to every worker.
 c. *ngai gigin bun mui-zhag geu-e gigai zhungin le*
 I already BUN every-CL dog its owner Asp
 'I gave every dog to its owner.'
 d. **ngai gigin bun gigai geu-e mui-gai zhungin le*
 I already BUN his dog every-CL owner Asp

Given the Hakka RDOC is shown to involve the Dative structure, I further argue that it favors the prepositional dative analysis (Marantz 1993, Bruening 2001), instead of the small clause analysis (Harley 2002) in that this representation enables us to capture the rise of the RDOC ordering. Precisely, the verbs allow the RDOC order since they introduce the structure like (6), in which the dative marker can be incorporated to the higher verb that subcategorizes and theta-marks it (Baker 1988). Hence the apparent missing dative marker gets properly licensed.

- (6) *Mary gave the bottle to the baby.*



However, such incorporation (and hence the possibility of having a covert dative marker) is not possible under a small-clause structure since, under this view, the verb won't behave as a proper governor for an empty category in the dative marker position.

This result has interesting implications on the typological variations and the ongoing debate of the proper characterization of English ditransitive constructions. To name one, it should be pointed out that the RDOC pattern can be observed in English too, according to Yáñez-Bouza & Denison's (2015) corpora study, as exemplified in (7).

- (7) a. ?Jim gave £5 the driver.
 b. Jim gave it him.

The pattern was more widespread in late Modern English, while there is clear dialectal variation within present-day British English (Hughes et al. 2012, Gerwin 2013).

On the Historical Development of Floating Quantifiers in English

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In Present-day English (PE), subject-oriented floating quantifiers (SFQs) must occur in a position preceding a main verb, as illustrated in (1a). Furthermore, object-oriented floating quantifiers (OFQs) are not allowed in ordinary transitive constructions, as illustrated in (1b).

- (1) a. *My friends* (all) rely (*all) on Mary.
b. * John saw *the men* all.

Adopting the adverbial analysis of FQs, Xia (2017) proposes a licensing condition on the distribution of FQs in PE, according to which an FQ serving as a matching goal enters into a Multiple Agree (MA) relation with a functional head as a probe and its host DP as another matching goal within the same phase domain. Based on this condition, the grammaticality of (1) is accounted for as follows.

- (2) a. [TP My friends_i T [_v*P [QP all] [_v*P t_i [_v* rely [VP [FQ*all] [VP t_v on Mary]]]]]]]
b. * [TP John_i T [_v*P t_i [_v* saw [VP the men_j [_v' [QP all] [_v' t_v t_j]]]]]]]

In (2a), the FQ adjoined to v^*P enters into an MA relation with the probe T and the host DP in [Spec- v^*P], so it is allowed to appear in the position between the subject and the main verb. On the other hand, the FQ following the main verb is ungrammatical, because the FQ is in the domain of v^* , and hence it cannot establish an MA relation with T and the host DP without violating the Phase-impenetrability Condition. In (2b), the FQ cannot enter into an MA relation with V as a probe, because the FQ, which is adjoined to V' , is not in the search domain of V, violating the licensing condition.

However, as we will see shortly, SFQs appeared in a position following a main verb and OFQs were allowed in transitive constructions in early stages of English. This paper aims to account for the historical changes in the distribution of SFQs and OFQs within the framework of the minimalist program, in terms of the loss of V-movement (SFQs) and object movement (OFQs) in the history of English.

The investigations based on the historical corpora listed below have revealed the historical changes in the distribution of SFQs and OFQs. In the case of SFQs, the V-FQ order was predominant over the FQ-V order until the end of Middle English (ME). The V-FQ order began to decline in the 16th century and was lost in the 18th century. As for OFQs, they were productive until Early Middle English (EME) but were lost in Late Middle English (LME).

First, it follows immediately from the availability of V-movement to T that the order was allowed in early English where an FQ appears after a main verb.

- (3) a. ac ðurh gecynde anre godcundnysse *hi* wyrcað **ealle** æfre an weorc;

‘but through the kind of one godhead they all work after a work’ (coalex,Alex:30.1.363)

In (3b), the FQ successfully enters into an MA relation with the probe T and the host DP in [Spec-*v**P], just as in PE. Since early English had V-movement to T unlike PE, the main verb moves to T past the FQ, deriving the V-FQ order. According to Haeberli and Ihsane (2016), the loss of V-movement starts in the middle of the 15th century and was completed during the 18th century. Thus, the demise of the V-FQ order in the 18th century is accounted for as a direct consequence of the loss of V-movement.

Second, the possibility of OFQs from OE to EME seems to be related to the fact that object movement, like that observed in other modern Germanic languages than PE, was available in these periods. According to Tanaka (2017), object movement, which was allowed until the 14th century, targets the specifier of Top in the left periphery of v^*P . Then, the structure of (4a) involving an OFQ will be as in (4b).

then shoved the heathens the saints into the mere, to middle the ice all unclothed

‘Then the heathens shoved all the saints into the mere, into the middle of the ice, unclothed’

(coaelive, ÆLS[Forty Soldiers]:145.2568)

In (4b), the FQ successfully enters into an MA relation with the probe Top and the host DP moved to [Spec-v*P]. Object movement was lost in the 14th century, which led to the loss of OFQs in LME because V became the only probe entering into an Agree relation with objects thereafter.

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Expressiveness from a Bayesian perspective

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Introduction. Real number intervals have been argued to be an appropriate denotation for expressive meanings (Potts 2007; McCready 2014; cf. Potts and Kawahara 2004). In opposition to their INTERVAL-UPDATE ALGORITHM, this study incorporates Bayesian insights and proposes a STATISTICAL-LEARNING ALGORITHM. What is stored in the structured discourse context are the parameter values of a statistical model (not, an interval) that reflect our belief of the strength of expressiveness and is subject to a dynamic change. This view solves two problems of the previous studies; the issues of (i) the ignorant state and (ii) the record of the expressiveness.

Previous analyses. Taking Thai honorification as his principal example, McCready (2014) develops an analysis that the appropriateness of expressiveness is determined by the compatibility of (i) an interval proposed by the sentence (a subinterval of $[0,1]$) and (ii) an interval given by the context (also a subinterval of $[0,1]$); the degree of expressiveness is reflected in the magnitude of the interval; e.g., High $\sqsubseteq [.6, 1]$, Mid $\subseteq [.3, .7]$, Low $\sqsubseteq [0, .4]$. If there is an overlap, the sentence is judged as appropriate; if not, the use of expressive construction serves as a proposal to modify the context to a new one, so the construction would be appropriate. For example, suppose the given context is $[.9, 1.0]$ and (a) the sentence gives $[.0, .1]$. Since there is no overlap between the two, the use of the sentence is considered inappropriate (e.g., saying a casual word in a very formal setting) and the fact that one uses the sentence with $[.0, .1]$ updates the context interval; he calculates the averages $[(.9+.0)/2, (1+.1)/2] = [.4, .45]$. But (b) if the sentence gives $[.5, .95]$, the context value does not change.

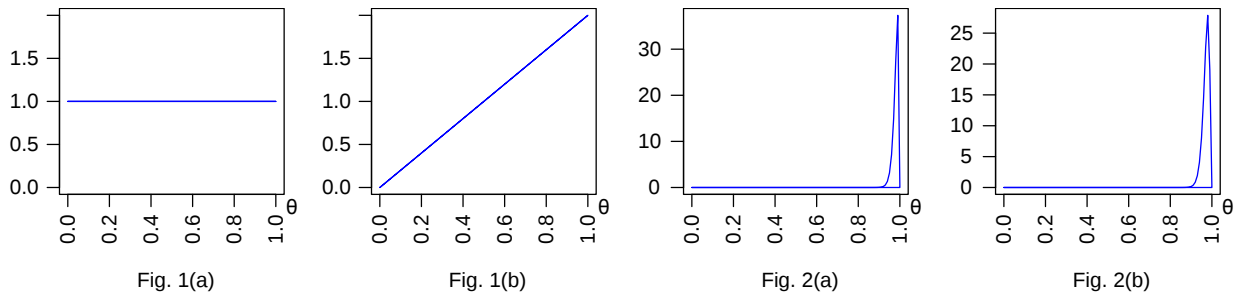
Problems. Although the basic idea that the expressive construction dynamically updates the structured discourse context seems on the right track, his implementation has two problems. The first problem concerns the *ignorant state*. When one has a context interval of $[.0, 1.0]$, context changes will no longer take place, because any interval is compatible with this range. This is contrary to our intuition. Suppose you are invited to a party but you have no prior knowledge on the formality. It may be casual but it may be formal. The context interval of $[.0, 1.0]$ depicts such a situation. But as the party goes, you will soon realize the appropriate degree of formality and try to fit your speech level to an appropriate range; the context interval *does* change even after the ignorant state. The second problem is about *the record of the expressiveness* in the discourse. Under his theory, once the context interval is updated at the time of t_i , the information on what expressiveness *had been* maintained before t_i becomes inaccessible. This makes it difficult for us to capture the distinction between global shift and the local shift of formality: people locally change the speech level for a particular purpose. For example, showing a conversation between a mother and a young daughter in Korean, Portner et al. (in manuscript) point out that the underlined utterance in (1) is temporarily marked with a formal speech style despite the fact that the person X *had been using* a casual style until her previous line. In this case, a temporary excitement or a praise to her daughter affects her style. Researchers have discussed that this kind of local shift is triggered by several factors and, therefore, not uncommon; e.g., *anger*, *power management* (Brown 2015), *face-threat* (Brown 2011a,b), *sarcasm* (Brown 2013). Notice that it is unlikely that the mother *globally* shifts the speech level; e.g., soon, she should go back to her original tone. This suggests that the participants somehow know the record of use of the expressiveness in the context. Since McCready's updating algorithm is not designed to remember the history of previously established norm, we cannot differentiate (i) the case where we temporarily arrived at a particular interval from (ii) the case where the participants keep using the new level for the rest of their conversation.

(1) X (mother): 'Inho, will you find mom's book for me?' Y (daughter): 'Yes. (. . .) Mom,

found it! Inho found it!’ X: ‘Wow! Inho did really well!’ (Portner et al. *manuscript*)

Formal Proposal. To overcome the concerns, this paper proposes a different mode of update algorithm with the following assumptions adopted from Bayesian statistics. For illustration sake, let us consider honorifics for our primary example. Let $\mathbf{y} = (y_1, \dots, y_n)^T$ be outcomes in the discourse ($y_n \in \{0,1\}$), where 1/0 respectively means the presence/absence of the honorific marker. Most naively, we can assume that $\mathbf{y}$ is *i.i.d.* generated from a $\text{Binom}(n, \theta)$ (*n.b.*, we can of course propose a more complicated model). Here, θ is a random variable from, *e.g.*, a $\text{Beta}(\alpha_1, \alpha_2)$ and represents our subjective belief of the strength of the honorification in the discourse. Due to its conjugacy, the nature of the update is from $\text{Beta}(\alpha_1, \alpha_2)$ to $\text{Beta}(\alpha_1 + \sum y_i, \alpha_2 + n - \sum y_i)$. The change in expressiveness is understood as a dynamic Bayesian update.

Explanation. How does this proposal account for the problems above? First, even though we start with a non-informative prior, we will get a skewed posterior; *i.e.*, we will be more and more confident in an appropriate range for θ , as the conversation goes (= as we have more observations) because the context update occurs, even when the utterance is compatible with the context. For example, Fig. 1(a) shows the density curve for the non-informative uniform distribution (*i.e.*, $\alpha_1 = \alpha_2 = 1$). Once we observe an utterance with, for example, an honorific marker, our belief on the expressiveness (= θ) changes, reflected by the posterior density given in Fig. 1(b) (*i.e.*, $\alpha_1 = 1 + 1 = 2, \alpha_2 = 1$), in which we vaguely assume that it is a formal situation. Thus, this model captures the transition from *ignorant state* to *non-ignorant state*. Second, the parameters α_1, α_2 keep track on the history of the expressiveness. Fig. 1(a), $\text{Beta}(1,1)$ shifts to Fig. 1(b), $\text{Beta}(1+1,1)$, by observing one honorific marker in the discourse and Fig. 2(a), $\text{Beta}(99,2)$, also changes to Fig. 2(b), $\text{Beta}(99+1, 2)$ by observing one utterance without an honorific marker. But, unlike in Fig 1(b), the new instance does not change your confidence too much as shown in Fig. 2(b); *i.e.*, you still think you are still in a formal setting, because you have already encountered many more honorific markers in advance (you already have a large value for α_1). This is because the parameters of Beta reflect the previous history of expressiveness.



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Break a Branch off a Tree: An Account Based on Further Specification

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Rappaport and Levin (2010) observe that verbs can be classified into manner and result verbs. Manner verbs such as *scrub* can take a non-subcategorized object when it is accompanied by a secondary predicate, as in (1).

- (1) a. Cinderella scrubbed her knees sore.
- b. Cinderella scrubbed the dirt off the table.

(Beavers and Koontz-Garboden (2012))

Result verbs such as *explode*, on the other hand, do not permit a non-subcategorized object even if it co-occurs with a secondary predicate, as in (2).

- (2) a.* The bomb exploded the watermelons into the air.
- b.* The ice melted the floor clean.

(Rappaport and Levin (2001))

Result verbs such as *break*, *tear*, *rip*, and *split*, however, are problematic to this generalization because it can take a non-subcategorized object when it is followed by a secondary predicate such as *off the tree*, as in (3).

- (3) a. John broke the branch off the tree.
(Meaning: The branch came off the tree.)
- b. # John broke the branch.

(Unacceptable in the meaning that “the branch came off something.”)

In (3a), the object NP *the branch* is not thematically selected by the verb but by *off the tree*.

Resultative constructions based on manner verbs such as (1) are argued to include a small clause (SC) structure (e.g., Hoekstra (1988)). The directional phrase or result phrase serves as a secondary predicate and licenses the non-subcategorized object.

- (4) [_{VP} Cinderella v [_{VP} scrub [_{SC} her knees sore]]]

The sentence in (1a) includes two events: the event of Cinderella scrubbing something (i.e., a causing event) and that of her knees becoming sore (i.e., a result event), the latter of which is introduced by a small clause.

In this way, manner verbs allow an extra event to be added. The unacceptability of the resultative constructions in (2) can be explained by assuming that result verbs cannot be combined with an extra event because they already have a maximally complex event structure (i.e., a causing event and a result event) (Rappaport and Levin (1998)).

The purpose of this paper is to show that there is a small clause that does not add an extra event. This type of small clause denotes an event that is coextensive with that of the verb in question, so it will be called a “coextensive small clause” hereafter. This is exemplified by (5a).

- (5) a. John hit the stone against the wall.
(Meaning: John held the stone and hit the wall with it.)
- b. # John hit the stone.

(Unacceptable in the meaning that “John held the stone and hit something with it.”)

In (5a), the object NP *the stone* is not subcategorized by the verb but is licensed by the directional phrase *against the wall*. I assume that the sentence in (5a) includes the following small clause structure.

(6) [_{VP} John v [_{VP} hit [_{SC} the stone against the wall]]]

Importantly, the event denoted by the small clause is coextensive with (i.e., further specifies) that of the verb. The lexical meaning of the verb *hit* is to bring an object into contact with another, and the small clause designates that the stone comes into contact with the wall. Thus, the small clause adds no extra event to the event of hitting in (5a).

A coextensive small clause is compatible with result verbs because it adds no extra event. One of the lexical meanings of result verbs such as *break* is a physical separation of an object, so it inherently implies motion. When an object breaks apart, for example, the pieces of the object move apart as well. *Break* is compatible with a non-subcategorized object followed by a secondary predicate when they denote an event that further specifies the event of a physical separation denoted by the verb, like (3a). The structure of this sentence is (7).

(7) [_{VP} John v [_{VP} break [_{SC} the branch off the tree]]]

In (2), on the other hand, the event denoted by the object NP and the secondary predicate adds an extra event to the maximally complex event structure of the result verbs, so these sentences are unacceptable.

The analysis presented in this study is compatible with the Unique Path Constraint (Goldberg (1991)). This constraint prohibits the co-occurrence of a change of state expression and a change of location expression in a single clause when they denote distinct events, as illustrated by (8).

(8) * Sam kicked Bill black and blue out of the room. (Goldberg (1991: 368))

Sentence (3a) also contains a change of state expression (i.e., *break*) and a change of location expression (i.e., *off the tree*) but is acceptable because the event expressed by the small clause that is headed by *off the tree* further specifies the event denoted by the verb *break*, and hence no violation of this constraint occurs.

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A Split Analysis of Categorization

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Categorization is associated with two loci: categorizers and functional heads c-commanding them. As for verbalization, in particular, the categorial feature for them $[-N, +V]$ is split into distinct heads: The loci of verbalization are the categorizer v with $[+V]$ and Voice with $[-N]$.

Distributed Morphology (DM) proposes the Categorization Assumption in (1), whereby Roots must merge with category-defining functional heads (or categorizers) such as v , n , and a , to acquire a category. On this view, categorizers are the only locus that is responsible for categorization. A split analysis of categorization is offered in which, implementing the categorial feature system in (2) into DM, it is not the case that categorizers alone are responsible for categorization. Rather, categorization is involved with two loci: categorizers and additional functional heads c-commanding them.

In the DM literature, there is little work that has explored the *features of categorizers* relative to the features of other functional morphemes. Following the standard assumption that just as morphemes are sets of features, so categories are defined featurally, the categorial feature system in (2) is assumed to be involved with categorization. Under the standard DM, it should be said that those categorial features are only housed on categorizers: For example, it is the verbalizer v alone that bears $[-N, +V]$. Rather, it is argued in this analysis that those verbal categorial features are split onto the verbalizer v with $[+V]$ and the Voice head with $[-N]$.

Given that in English, only the $[-N]$ categories are Case-assigners, the noun and adjective in (3) employ *of*-insertion since they lack $[-N]$, to salvage *the rumor* and *her son*, which would otherwise violate the Case Filter (Chomsky 1981, 1995). In contrast, the same rescue does not take place in the nominal and adjectival ECM constructions in (4). Given this sharp contrast in the availability of *of*-insertion, Chomsky proposes the Inherent Case assignment in (5) whereby the sentences in (4) are ruled out because the noun and adjective do not θ -mark the ECM-ed NPs, *John* and *Bill*, so that *of*-insertion is unavailable. However, this account incorrectly predicts the possibility of *of*-insertion in the English passive, as in (6), for the passive participle does θ -mark its complement NP, as in the case of the NP and AP in (3). Chomsky thus argues that while nouns and adjectives have the categorial feature bundles $[+N, +/-V]$ in (2a,c), passive participles get “neutralized” in the sense that they bear only $[+V]$, with no marking for $[N]$. As a consequence, there emerges a three-way contrast here in (7).

Recall that it is usually assumed in DM that what bears the categorial feature for verbs ($[-N, +V]$) is the verbalizer v alone in (8a). But this poses empirical difficulties with “neutralization” of passive participles. In passive verbal structure (8b), if $[-N, +V]$ were in v alone, structural Case should be available in the passive, contrary to fact, as in (6). This indicates that v must not bear $[-N]$ as in (8c). But notice that past/perfect participles can assign structural Case in (9). This suggests that the feature at stake resides in Voice_{ACTIVE} in (10a). This amounts to saying that the $[-N]$ feature responsible for Case is associated with Voice_{ACTIVE} responsible for an external theta-role (Burzio’s Generalization). In the passive, in contrast, Voice_{PASS} should lack $[-N]$ because passive participles are neutralized in (6, 10b). Under the present split analysis, **verbalization involves two loci; $v[+V]$ and Voice_{ACTIVE} $[-N]$.**

A significant consequence of the current analysis is that it nicely captures the sharp contrast between deverbal nominalization (11a) and verbal gerunds (11b). Unlike verbal gerunds in (11b,12b), in deverbal nominalization (11a,12a), non-agentive as well as agentive possessives are possible. On the assumption that *-ize* and *-ation* diagnose the presence of the categorizers v and n , respectively, (11,12) can be accounted for by the structure shown in (13): In (13b), Voice $[-N]$ licenses structural Case to *the Earth*, unlike in (13a) in which *of*-insertion must take place. In addition, due to SpecVoice in (13b), verbal gerunds only license agentive possessives,

unlike in (13a) SpecDP is taken to be allowed for various interpretations other than agentives.

Also entertained is the possibility to extend the split analysis put forth here to other lexical categories such as nouns, adjectives, and prepositions. As was already supposed for the analysis of deverbal nominalization and verbal gerunds, nominalization is associated with D and *n*, each of which bears $[-V]$ and $[+N]$, respectively. As for adjectives, in (14b), on the assumption that Deg is the locus for three degree forms of adjectives; positives, comparatives, and superlatives (see von Stechow 2008, Matushansky 2013), this head bears $[+N]$ and *a* $[+V]$. As for prepositions, Sveninious (2007) proposes the “Split-P hypothesis” in which *p*, analogous to Voice for verbalization, introduces external arguments (“Figure”) and *P*, analogous to the categorizer *v*, takes internal arguments (“Ground”). In (14c), Fig and *p* bear $[-N]$ and $[-V]$, respectively.

To sum up, it is not categorizers alone that participate in categorization. Rather, **categorization is involved with additional functional morphemes as well as categorizers**. One of the most important theoretical contribution the current analysis makes is that it **explores the feature bundles of categorizers**, being a less-studied domain, relative to other well-studied functional domains such as Tense for verbs and Number/Gender for nouns.

(1) Roots are acategorial. They cannot appear without being categorized. They are categorized by combining with category-defining functional heads (Embick & Marantz 2008:6).

(2) a. $[+N, -V] = N$ b. $[-N, +V] = V$ c. $[+N, +V] = A$ d. $[-N, -V] = P$

(3) a. *John's belief **of** the rumor* b. *Mary is proud **of** her son.*

(4) a. **my proof **of** John to be here* b. **I am proud **of** Bill to be here*

(5) Inherent Case is assigned by α to NP only if α θ -marks NP. (Chomsky 1995:104)

(6) **it/there was built **of** the snowman*

(7) a. $V = [-N, +V]$ b. passive participle = $[+V]$ c. $N, A = [+N, +/-V]$

(8) a. $[_{vP} [_{v[-N, +V]} \checkmark]]$ b. $*[_{vP} [_{PartP -en} [_{v[-N, +V]} \checkmark]]]$ c. $[_{vP} [_{PartP -en} [_{v[+V]} \checkmark]]]$

(9) *Elsa and Anna had built **them**_{ACC}.*

(10) a. $[_{VoiceP} \text{Voice}_{ACTIVE[-N]} [_{vP} [_{PartP -en} [_{v[+V]} \checkmark]]]]]$ b. $[_{VoiceP} \text{Voice}_{PASSIVE[-N]} [_{vP} [_{PartP -en} [_{v[+V]} \checkmark]]]]]$

(11) a. *Martians' **colonization** **(of)** the Earth* b. *Martians' **colonizing** **(of)** the Earth*

(12) a. ***last year's** mobilization of the troops* b. ****last year's** colonizing the Earth*

(13) a. $[_{DP} \text{Martians}' [_{D[-V]} [_{nP} n[+N] -ation} [_{vP} v[+V] -ize} [_{\sqrt{COLON}} [the\ Earth]]]]]$

b. $[_{DP} \text{Martians}'_1 [_{D[-V]} [_{nP} n[+N] -ing} [_{VoiceP} t_1 [_{Voice[-N]} [_{vP} v[+V] -ize} [_{\sqrt{COLON}} [the\ Earth]]]]]]]$

(14) a. $[_{DP} [_{D[-V]} [_{nP} n[+N]} \checkmark]]]$ b. $[_{DegP} \text{Deg}_{[+N]} [_{aP} a[+V]} \checkmark]]]$ c. $[_{FigP} \text{Fig}_{[-N]} [_{pP} p[-V]} \checkmark]]]$

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Adnominal Adjectives and Definiteness Marking in Old English

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1. Double Inflectional Paradigms for Old English (OE) Adjectives:

(a) Weak Adjectives after a Demonstrative or a Possessive

(b) Strong Adjectives Elsewhere

(1) a. mid þære **yfelan** sceonesse beswac þone ærestan wifmon

with the evil suggestion deceived the first woman (BIHom 5:1)

b. & ic hit mid **yfelre** bysene inc forgylde

and I it with evil example to-you-two recompense (BIHom 189:25-6)

2. Determinerless Weak Adjectives (DWA): Poetry and Vocatives in Prose

(2) a. syððan Beowulfe **brade** rice on hand gehwearf

afterwards to-Beowulf broad kingdom onto hand passed (Beo 2207-8a)

b. **goda** lareow eall ðis ic geheold of minre geoguðe

good master all this I kept from my youth (OGsp Mark 10:20)

3. Properties of DWA

(a) Marking Definiteness without Accompanying a Definite Determiner

(b) Representing Syntactic Archaism in OE Poetry: Fulk (2007), Yoon (2014a)

(c) Vocatives Less Prone to Change due to Exgrammaticality: Yoon (2015)

4. Strong Adjectives as a Default Adjectival Marker

(a) Paradigms from Those of PIE Demonstratives and Relative Pronouns

(b) Strong Adjective Endings for Inflected Possessives

(3) we scyolon ure yfelnysses behreowsian mid **urum** fif andgitum

we must our evilness repent with our five senses (ÆCHI 9:67-8)

(c) Confusion in Adjective Paradigms: Mitchell (1985)

(4) he underfehð us into ecere reste fram ðisum **andweardum** geswince

he accepts us into eternal rest from this present toil (ÆCHII 5:215-6)

5. Weak Adjectives as a Definiteness Marker

(a) Weak Adjectives: Germanic Innovation Based on N-Stem Nouns

(b) Cognate with the PIE Individualizing Particle *-Ne: Probable Descent from a Definite Article: (Ringe 2006)

6. Syntax of Weak Adjectives

(a) DWA: a Clitic (X₀) Undergoing Encliticization onto the Adj Head

(5) [AdjP Adjective [_{NP} [_{n'} Weak Adjective Inflection [_{NP} NP]]]]

(b) Determiner + Weak Adjective, þu/ge + Weak Adjective: Bleaching of Definiteness in Weak Adjectives and Introduction of Alternative Markers

(6) [_{DP} Determiner/þu/ge [_{AdjP} Weak Adjective [_{NP} NP]]]

(7) 'Ge Galileiscan weras,' cwædon hie, 'hwæt stondaþ ge her'

you Galilean men said they what stand you here (BIHom 123:20-1)

(c) Definiteness Marking in OE after Bleaching of Weak Adjectives

(8) a. demonstrative > definite article > case/non-generic

b. specifier (XP) > head (X₀) > affix (van Gelderen 2007)

(9) Possessive-Demonstrative Construction: a Precursor of the Emergence of a Definite Article (Yoon 2014b)

..... 7 swetnesse **heora þære** heofonlican lare

and sweetness (of) their that heavenly doctrine (Bede 62:1-2)