Two Types of Restructuring in Japanese
—Evidence from Scope and Binding*

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1 Introduction

This paper discusses a mode of embedding in Japanese called restructuring (Wurmbrand 2001, Bobaljik and Wurmbrand 2005, 2007, Takahashi 2010, 2011). Restructuring is a process by which certain matrix verbs select a reduced embedded clause (e.g. the embedded predicate is subject-less and lacks an independent tense). The central claim that will be defended here is: there are two types of restructuring in Japanese—lexical restructuring (LR) and functional restructuring (FR). LR is instantiated by a certain set of selecting verbs such as hazime- ‘start’, oe- ‘finish’, tuzuke- ‘continue’ or wasure- ‘forget’, whereas the potential construction involving the suffixial verb, -(rar)e ‘can’ corresponds to FR. The dichotomy of LR and FR is observable in the scope properties of restructuring constructions. In LR, elements belonging to the embedded predicate must take scope over the matrix V (e.g. wasure-), a phenomenon dubbed Anti-Reconstruction Effect (ARE) (Saito and Hoshi 2000, Bobaljik and Wurmbrand 2005, 2007, Takahashi 2010, 2011). In contrast, FR with nominative objects allows low scope, hence is not subject to the ARE (Takano 2003, Nomura 2005, Takahashi 2010, 2011). In this paper, we provide a principled account of this contrast which is based on the LR/FR distinction.

A second issue this paper addresses is the question of whether restructuring complements involve an embedded subject. Evidence from Case and binding suggests that restructuring complements lack an embedded (e.g., PRO) subject. However, this then renders it challenging to derive the interpretation of the embedded clause, which involves an obligatory control interpretation. We propose a solution to this puzzle which is based on the assumption (substantiated in Wurmbrand 2013a,b) that restructuring complements involve an underspecified v-head which is

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not ‘strong’ enough to license accusative Case and an embedded subject, yet, after incorporating into the matrix predicate associates the embedded predicate with a subject.

The organization of this paper is as follows. Section 2 summarizes the data and properties of restructuring in Japanese. Section 3 presents our analysis of restructuring and the ARE. In Section 4, we discuss an interesting argument presented in Takahashi (2010, 2010) for the presence of PRO in restructuring complements and show that the v-incorporation approach handles these data without the assumption of a PRO subject. Section 5 concludes this paper.

2 Properties of Restructuring in Japanese

2.1 Anti-Reconstruction Effect

The distinction between LR and FR is illustrated in (1). The example in (1a) involves a case of LR, and the embedded object, subete-no ringo-o ‘all the apples’, must take scope over the matrix verb, wasure ‘forget’. For examples such as (1b), which we argue involves FR, two varieties of judgment are reported in the literature. Originally, the embedded nominative object is argued to be interpreted obligatorily higher than matrix negation and the potential verb (Sano 1985, Tada 1992 i.a.). However, more recently, Takano (2003), Nomura (2005) and Takahashi (2010, 2011) observe that low scope of the object is, albeit less preferred, nevertheless possible.

(1)

LEXICAL RESTRUCTURING
   John-TOP all-GEN apple-ACC eat-forget-PAST
   ‘John forgot to eat all the apples.’ ∀ » forget ; *forget » ∀

FUNCTIONAL RESTRUCTURING
b. Kare-wa subete-no yubi-ga mage-rare-nai.
   he-TOP all-GEN finger-NOM crook-can-NEG
   ‘He cannot crook all his fingers.’ ∀ » not » can ; %not » can » ∀

The fact that only LR exhibits the ARE carries over to other cases: not only the direct objects in (1) (marked with accusative in LR and nominative in FR) but also other elements originating in the embedded predicate, such as indirect (dative) objects and adjuncts, display the ARE. This is shown in (2) for LR vs. (3) for FR.

(2)

LEXICAL RESTRUCTURING: DATIVE
a. Taro-wa sannin-no sensei-ni dareka-o susume-wasure-ta.
   Taro-TOP three-GEN teacher-DAT someone-ACC recommend-forget-PAST
   ‘Taro forgot to recommend someone to three teachers.’ ∃ » 3 » forget ; *forget » ∃ » 3

LEXICAL RESTRUCTURING: ADJUNCT
b. Taro-wa hon-o Mary-dake-kara kari-wasure-ta. only » forget
   Taro-TOP book-ACC Mary-only-from borrow-forget-PAST *forget » only
   ‘Taro forgot to borrow books only from Mary.’ [Takahashi 2011: 245]

c. Boku-wa subete-no mise-kara resiito-o morai-wasure-ta.
   I-TOP all-GEN store-from receipt-ACC receive-forget-PAST
   ‘I forgot to receive a receipt from every store.’ ∀ » forget ; *forget » ∀
(3) **FUNCTIONAL RESTRUCTURING: DATIVE**
a. *Mary-wa dareka-ga sannin-no sensei-ni susume-rare-ru.*
   Mary-top someone-nom three-gen teacher-dat recommend-can-pres
   ‘Mary can recommend some to three teachers.’ [Takano 2003: 793]

   ∃ » 3 » can ; can » ∃ » 3

**FUNCTIONAL RESTRUCTURING: ADJUNCT**
b. *Taro-wa me-ga 0.001-byoo-dake ake-rare-ru.*
   Taro-top eye-nom 0.001-second-only open-can-pres
   ‘Taro can open his eyes only for 0.001 seconds.’ [Saito 2000, Takano 2003]

   only » can ; %can » only
c. *Kare-wa tyokoreeto-ga subete-no on’nanoko-kara mora-e-nai.*
   he-top chocolate-nom all-gen girl-from receive-can-neg
   ‘He cannot get a chocolate from all girls.’ ∀ » not » can ; %not » can » ∀

### 2.2 Independence of the Embedded VP

Saito and Hoshi (2000) propose that in restructuring contexts the matrix and embedded verbs form a complex V-V predicate. However, this is challenged, for both LR and FR, by the event modification properties in (4). As shown, irrespective of LR or FR, the matrix and embedded predicates can be modified separately by different event modifiers (the boxed verb is modified by the boxed adverb, and the underlined verb by the underlined adverb).

(4) **LEXICAL RESTRUCTURING**
   Taro-top every.day 15-minute-in breakfast-acc eat-continue-past
   ‘Every day, Taro continues to eat breakfast in 15 minutes.’

**FUNCTIONAL RESTRUCTURING**
   Taro-top TV-nom 1-year-for three-hour watch-can-pres
   ‘For one year, Taro can watch TV for three hours.’

   [Bobaljik and Wurmbrand 2007: 33]

If the verbal amalgam is analyzed as a V-V complex predicate, a single event, modifying a subpart of it (i.e. each V) has to target a head level. Event modifiers such as *in/for an hour* have been argued to modify VPs, not verbs, which leads to the conclusion that (4) involves two VPs, rather than a single VP with a complex V-V predicate. We thus do not pursue a complex head approach here, but follow a phrasal complementation approach as in Wurmbrand (2001 *et seq.*).

### 2.3 Whether We Have PRO or Not—Long Passive

Assuming restructuring complements involve a phrasal complement, the question is what its category should be. Since tense morphemes are prohibited in restructuring contexts, as shown in (5), we assume that there is no TP (and hence CP). This leaves two conceivable structures for e.g. (1a), a vP complement as in (6a) or a bare VP complement as in (6b).
Koji Shimamura and Susi Wurmbrand

(5) Taroo-wa ringo-o tabe{*-ru/-ta} wasure-ta.
Taroo-TOP apple-ACC eat{-PRES/-PAST} forget-PAST
‘Taro forgot to eat an apple.’

(6) a. [vP: Matrix SUBJ [vP: Embedded PRO [vP OBJ eat] forget] v1[+ACC]]
b. [vP: Matrix SUBJ [vP: Embedded OBJ eat] forget] v1[+ACC]]

If the structure is as in (6a), the accusative Case of the embedded object is assigned by the lower v, whence the matrix v does not do any job insofar Case assignment is concerned. If, on the other hand, the structure is as in (6b), the accusative Case of the embedded object stems from the matrix verb, since there is no v downstairs. A dependency between the embedded object and matrix v can also achieved in (6a) if it is assumed that the embedded v somehow looses its ability to assign Case (this is in fact the proposal put forward in Takahashi 2010, 2011).

We can however nevertheless discern (6a) from (6b) by using long object movement or long passive (Wurmbrand 2001, 2013a,b). Under the structure in (6a), passivization of the matrix verb should not affect the accusative Case of the embedded object, whereas accusative Case will be unavailable in a matrix passive context under a structure such as (6b). The long passive example in (7b) illustrates the loss of accusative Case in matrix passive contexts. Moreover, (7) also presents an argument against a PRO subject. While zibun ‘self’, a subject-oriented anaphor, is possible in the active case in (7a), it becomes impossible in the long passive context in (7b). The structure in (6b) predicts this: the loss of accusative Case is understood as the absence of the lower v, and since there is no lower v, it is impossible to have an independent PRO subject in the embedded clause, thus, no binder for zibun. If, on the other hand, the embedded clause were to contain a PRO subject, it would not be clear why zibun is excluded in (7b) (but not in (7a)). Under (6b), the contrast between (7a) and (7b) can be accommodated without any stipulation.

(7) a. Amerika-de-wa oya-ga zibun-no kodomo-ni kyodaina
America-in-TOP parent-NOM self-GEN child-DAT huge
hanbaagaa-o atae-tuzuke-tei-ru.
hamburger-ACC give-continue-PASS-PRES
Lit. ‘In the US, parents1 continue to give huge hamburgers to self1’s children.’
b. Amerika-de-wa kyodaina hanbaagaa-ga(*zibun-no) kodomo-ni
America-in-TOP huge hamburger-NOM (*self-GEN) child-DAT
atae-tuzuke-rare-tei-ru.
give-continue-PASS-PASS-PRES
Lit. ‘In the US, huge hamburgers are continued to give to (*self’s) children.’
Intended. ‘They continue to give huge hamburgers to children.’

The VP complementation approach in (6b) is however not free from problems. One challenge is how to capture the obligatory control interpretation in restructuring contexts (the association of the embedded predicate with a subject) without recourse to PRO. Another is how to derive the difference regarding the ARE between LR and FR under the VP complementation approach. In the remainder of this paper, we address these issues and provide an account that maintains the advantages of the VP-complementation account but also solves these issues.
3 Proposal and Analysis

3.1 Introducing $v_R$—Wurmbrand (2013a,b)

Following the feature specifications of $v$ in Wurmbrand (2013a,b), we assume that the $v$-head is equipped with two types of features: a $v$-feature (i.e. the voice-determining feature) and $\phi$-features. These features are valued or unvalued, yielding several instances of $v$. For instance, active $v$ and passive $v$ are derived as in (8).

\[
\begin{align*}
\text{(8) a. ACTIVE} & \\
& vP \\
& \quad \text{SUBJ} \quad v' \quad \text{VP} \\
& \quad \text{\phi: val} \\
& \quad \text{\phi: AGENT} \\
& \quad \text{\phi: } \text{Agree (}\phi\text{)} \\
\text{b. PASSIVE} & \\
& \text{PassP} \\
& \quad \text{SUBJ} \quad \text{Pass'} \\
& \quad \text{\phi: val (implicit)} \\
& \quad \text{\phi: AGENT} \\
& \quad \text{\phi: } \text{Agree (}\phi\text{)} \\
\end{align*}
\]

In (8a), the $v$-feature is specified as AGENT, which introduces an external argument. The external subject values the $\phi$-features of $v$ via Reverse Agree (Wurmbrand 2014), and this Agree relation establishes an argument-of relation between the subject and $v$. In (8b), the $v$-feature is unspecified and hence needs to be valued. $vP$ merges with the passive head, which is inserted valued and, again via Agree, transfers its value to the $v$-feature of $v$. Following Legate (2010, 2012), the $\phi$-features of $v$ are intrinsically valued, and a passive feature on $v$ associates the the $\phi$-features with an implicit (or oblique) agent.

Based on a cross-linguistic examination of the voice properties in restructuring infinitives, Wurmbrand (2013a,b) argues that restructuring complements involve a $v$-head, and that such restructuring $v$ ($v_R$) enters into a derivation with unvalued $v$ and $\phi$-features as in (9). The lack of AGENT on $v_R$ accounts for why no external argument can be merged (i.e. the lack of PRO).

\[
\begin{align*}
\text{(9) RESTRUCTURING} & \\
& vP (\text{Matrix}) \\
& \quad v \\
& \quad \text{VP1} \\
& \quad \text{\phi: AGENT} \\
& \quad \text{\phi: } \text{V} \\
& \quad \text{vP (Restructuring Complement)} \\
& \quad vR \\
& \quad \text{VP2} \\
& \quad \text{\phi: } \text{\phi: } \\
\end{align*}
\]
To get valued, \( v_R \) incorporates into the matrix \( v \) as in (10), so that the matrix subject values the \( \phi \)-features of both the matrix \( v \) and \( v_R \), thereby establishing an *argument-of* relation with both predicates. This form of incorporation thus derives the obligatory control nature of restructuring constructions. The \( v \)-feature of \( v_R \) is valued as *AGENT* by the matrix \( v \), which shows overt effects in several languages showing voice-matching restrictions in restructuring contexts (see Wurmbrand 2013b for details). Concomitantly, the incorporation of the phase head \( v_R \) extends the phasehood of the restructuring complement to VP1 (Den Dikken 2007, Gallego 2005, 2010), wherefore the lower \( v_P \) is Spelled-Out at the level of VP1.

\[
\text{(10) aides and Spell-Out of the Lower Restructuring VP Apply}
\]

As in the bare VP-complementation approach, the embedded object is Case-dependent on the matrix \( v \), which is specified as *AGENT* and hence able to assign an accusative Case (i.e. Burzio’s Generalization). On the other hand, when merged, \( v_R \) lacks an *AGENT* feature, and is hence unable to assign accusative Case to the object. Therefore, if the matrix \( v \) undergoes passivization, it will result in long passive observed in (7b). Note also that since there is no PRO in the restructuring complement, the only subject DP that can license *zibun* is the matrix subject in (10). Thus, if this DP becomes unavailable, as for instance in passive, no binder is present for *zibun*, deriving the impossibility of *zibun* in (7b).  

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### 3.2 LR and FR in Japanese—In Terms of Scope

As we discussed in Section 2.1, LR displays AREs, whereas FR does not. Previous accounts assume that the ARE of nominative objects is due to the position of the object, which moves higher than the matrix predicate for Case reasons. Bobaljik and Wurmbrand (2005) speculate that there is a correlation between the Case position of an object and its scope position. That is, under the schematic structure in (11), the embedded object cannot be interpreted inside the embedded

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1 Not having PRO has another nice consequence. Since long passive moves the embedded object to the matrix subject position, it has to skip PRO via A-movement under the structure with PRO, which may evoke minimality concerns. However, we can liberate ourselves from this, since we do not have PRO in the first place.
clause since it is Case-licensed by the matrix $v$, not the lower $v_R$. Reconstruction is claimed to be impossible since the Agree relation licensing Case must be visible at LF, and the restructuring complement is assume to be an “agreement domain”, shaded in (11).²

\[(11) \ [vP OBJ-ACC [vP SUBJ [vP [vP OBJ <et> forget] vR] v|_{+ACC}]]\]

Although this agreement-scope correlation works descriptively, it still remains unclear why it holds. Furthermore, since FR allows the low scope of the nominative object, the definition of agreement domain needs to distinguish between LR and FR. The voice incorporation approach pursued here allows us to derive the ARE without the above assumptions.

The structures proposed for LR and FR are given in (12).

\[(12) \ a. \ \text{LEXICAL RESTRUCTURING} \quad b. \ \text{FUNCTIONAL RESTRUCTURING} \]

In LR, $v_R$ incorporates into the matrix V1 due to its unvalued $v$ and φ-features, as discussed above, whereas in FR, the suffixial potential verb -(rar)e moves to Mod due to its modal force.³ A standard view on quantifier scope (Heim and Kratzer 1998) is that quantifiers must combine with a clause-denoting expression. Thus, Quantifier Raising (QR) only targets propositional nodes of type $i$. Therefore, the embedded object must be QRed to the matrix vP in (12a-b). Note that the lower vP in (12a) cannot be a landing site for QR since it denotes a type $<et>$ projection due to the lack external argument.

The full derivation of LR configuration is given in (13). The embedded object first moves to the matrix Spec-VP1 in order to be Case-assigned by the matrix $v$. After $v_R$-to-V1 incorporation, the matrix VP is a phase because of phase extension. Thus, the embedded $vP$ is a Spell-Out Domain (SOD), and anything within that domain becomes inaccessible (cf. the PIC, Chomsky

² Note that the analysis presented in Bobaljik and Wurmbrand (2005) does not have $v_R$.

³ It may be that the potential suffix -(rar)e per se is unspecified for its modal interpretation. For instance, it can also be used to derive the middle form of verbs as in (i). Here, we hypothesize that -(rar)e, which is base-generated in $v$, is the same element in the middle construction and the potential construction. The difference could be related to the movement of $v$ to Mod in the latter but not the former.

(i)  
\[\text{Kono hon-wa kantan’ni yom-e-ru.} \]
\[\text{this book-TOP easily read-PAST} \]

\[\text{‘This book reads easily.’} \]
2000). To be properly interpreted, the object then undergoes further QR to (at least as high as) the matrix vP, which is the first proposition-denoting node.

(13) **The Derivation of Lexical Restructuring**

Notice at this point that we have derived the agreement-scope correlation suggested in Bobaljik and Wurmbrand (2005). Case-wise, the object must move to the matrix domain, otherwise, its Case would remain unvalued. Also, QR-wise, the embedded vP is not a viable target of QR due to its type of <et>, and therefore reconstruction is not possible.

Turning to FR, the stative potential verb does not have **AGENT** for its v-feature; rather, it is specified as experiencer (**EXP**), which does not have the power to assign accusative Case. Therefore the object becomes Case-dependent on T (similar to unaccusatives). The matrix vP is the lowest proposition-denoting node, and quantified objects must therefore move and adjoin to vP. We also propose that nominative DPs can undergo further movement to Spec-TP. This much said, we have the following derivation for FR (we ignore the subject movement here).

(14) **The Derivation of Functional Restructuring**
The quantified object can be interpreted in the position of OBJ1 or OBJ2, but crucially not OBJ3, since the latter is not adjoined to a type 1 projection. Since the potential verb undergoes movement in our account, there are also two positions available: can1 or can2. This yields the following copy choices for the LF interpretation of (14).

\[(15) \quad \text{a. OBJ1} \rightarrow \text{can1} \quad (\text{NB. OBJ1} \rightarrow \text{can2 results in the same scope})
\]

\[(15) \quad \text{b. OBJ2} \rightarrow \text{can2}
\]

\[(15) \quad \text{c. can1} \rightarrow \text{OBJ2} \]

(15c) yields the less preferred, yet nevertheless possible, interpretation of the potential taking scope over the nominative object. The difficulty of this interpretation noted in several works may be ascribed to the mixed copy choice in (15c) (i.e., the high copy of the modal but the low copy of the object).

### 4 Indirect Binding via Agree

#### 4.1 The Impossibility of zibun in Long Passive

Recall that in restructuring constructions, active sentences allow anaphors whereas long passive does not as in (7). To explain this contrast, we adopt the Agree-based approach to binding proposed by Reuland (2005, 2011). In this approach, the anaphors-antecedents relation is not established directly but via an intermediating functional head which independently agrees with both the antecedent and the anaphor. Following Saito (2009) and Takano (2011), we assume that the relevant functional head is \(v\), as in (16).

\[(16) \quad \text{INDIRECT BINDING VIA AGREE}
\]

\[\text{vP} \]

\[\text{SUBJ} \quad \phi: \text{val}
\]

\[\text{v'} \quad \text{vP}
\]

\[\text{Agree (\phi)} \quad \text{v: AGENT}
\]

\[\text{VP} \quad \text{ANAPHOR (SELF)}
\]

\[\text{Agree (Anaphor)}
\]

\[(\text{Word Order Irrelevant})\]

In (16), \(v\) enters into an Agree dependency with the anaphor (for some anaphor-related feature), and the subject enters into an Agree dependency with \(v\) (recall that the subject must value the \(\phi\)-features of \(v\)). By transitivity then, the subject and the anaphor are in a grammatical dependency. Since implicit passive agents typically do not license anaphors, this means that in a Reuland-

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\[4\] It may be that the Agree relation between \(v\) and the anaphor is a process of feature-sharing in the sense of Pesetsky and Torrego (2007) with the \(\phi\)-feature of the anaphor underspecified (unvalued). Then, Agree between \(v\) and the anaphor establishes the sharing relation between two unvalued \(\phi\)-features, which are then valued by the subject.
style approach to binding the (indirect) dependency between an antecedent and an anaphor is necessary and a dependency between $v$ and an anaphor alone is not sufficient to license anaphors. The derivations of the examples in (7) are given in (17). In the active (17a), the $\varphi$-features of $v_R$ are valued by the matrix subject. $v_R$ also Agree with the anaphor, and binding is thus successful established. In long passive contexts in (17b), on the other hand, passive involves intrinsically valued $\varphi$-features on $v$ corresponding to the implicit agent (Legate 2010, 2012), and no external argument is merged. As a result, $v_R$ is not in an Agree dependency with a DP, and hence no binding relation can be established.

(17) a. **Successful Binding:** (7a)  

b. **Unsuccessful Binding:** (7b)

4.2 How Dative Object Binds Anaphor—A Case from Takahashi (2010, 2011)

Takahashi (2010, 2011) presents an interesting set of data regarding binding in causative constructions. As shown in (18), zibun can either be bound by the matrix subject or the matrix dative. Since zibun is a subject-oriented anaphor, direct binding of zibun by the dative is excluded. Takahashi then concludes that there must be a PRO subject in the restructuring complement, which is controlled by the dative and binds zibun. Crucially, however, the quantified argument containing zibun must still scope over the matrix $V$—i.e., an ARE is observed despite the embedded predicate allegedly being a propositional complement.

(18) Sensei-wa gakusei-ni sono-nyuu-su-o zibun-T/S-no teacher-TOP student-DAT that-news-ACC SELF-GEN  
zimoto-dake-e hookoku-sase-wasure-ta. home-only-to report-cause-forget-PAST  
‘The teacher$_T$ forgot to make the student$_T$ report the news only to his$_T$/S home.’  
[Takahashi 2011: 249; (61)]

The account proposed in this paper, however, can account for theses data without the postulation of a PRO subject. The derivation is given in (19). In (19), $v_R$ Agree with zibun, and the $\varphi$-features of $v_R$ are valued by the dative causee. The AGENT value of $v_R$ comes from the matrix $v$, and...
which establishes the interpretation of the dative as the agent of the embedded predicate. Lacking an embedded subject, the embedded vP denotes again type <et>, excluding it as a landing site for QR and QR to the matrix vP is required. This account thus allows for a simple explanation of the ARE and a unified account of restructuring and especially long passive (see also fn. 1).

(19) **Indirect Binding via Agree by Dative Argument**

![Diagram](image)

5 Conclusion

We have argued that Japanese has two types of restructuring, lexical and functional, which systematically differ in their reconstruction potential. We have confirmed and provided further evidence for the claim that restructuring complements do not contain an embedded subject. Lastly, we have shown that an Agree approach to binding and a specific feature system of v accounts for binding data that have been puzzling for previous approaches to restructuring which assumed a subject-less embedded complement.

References


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5 As is expected, FR with a dative argument does not exhibit ARE; see Takahashi (2010, 2011).