

A Typological Study of Change-of-State Expressions in English and Japanese:  
A Corpus-Based Comparison

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The typological differences between English and Japanese concerning the linguistic representations of changes of state (e.g., dying, becoming happy, becoming clean) are discussed. It has been argued that languages differ in their preferred representations of changes of state: some languages tend to encode change in the main verb, while others tend to use resultative and other constructions in which the resulting state is encoded in a position other than the main verb (e.g., Talmy 1991, 2000; Acedo-Matellán 2016; Ono 2004; Spring 2015), in parallel to what has been suggested about the descriptions of motion events (e.g., Talmy 1991, 2000; Matsumoto 2024). However, few studies have been conducted to examine such alleged typological differences in quantitative terms. In this talk, I summarize and integrate the findings from a corpus-based study of change-of-state expressions in Japanese, reported in Matsumoto & Ujiie (2024), and in English, reported in Mano, Koga, & Matsumoto (2025).

The Japanese study examined expressions for 12 different changes of state: SITTING DOWN, DYING, WAKING UP, BECOMING HAPPY, BECOMING WARMER, BECOMING RED, BECOMING BIGGER, OPENING, BREAKING, FREEZING, BECOMING CLEAN, and BECOMING BETTER, as well as their causative counterparts. The English study examined four of them: SITTING DOWN, DYING, WAKING UP, OPENING, and BECOMING RED, and their causative counterparts. Expressions representing these changes were searched in the BCCWJ (Balanced Corpus of Contemporary Written Japanese) for Japanese and the COCA (Corpus of Contemporary American English) for English, and the frequencies of the following types of expressions were obtained: (a) change-of-state verbs (e.g., *die*), (b) resultative constructions (e.g., *(push) ... open*), (c) general change verbs and their complement (e.g., *get red*), (d) metaphorical or metonymic expressions involving nominals representing a body part, a state, or a state-inducing entity or location (e.g., *take a seat*), etc.

The results were analyzed within the framework of the head-based typology of motion and change-of-state descriptions (Matsumoto 2017, 2025; Ujiie & Matsumoto 2025), which categorizes change-of-state expressions in terms of whether change is encoded in the head (main verb) or in head-external elements (e.g., result phrases, verb particles). The study reveals that, as a general tendency, Japanese utilizes the head position more often than English does, very often as the single site of indicating both the transition and the resultant state, or indicating transition alone. The use of the head position is also the predominant choice in English for verbs like *sit* (as a change-of-state verb), *wake*, and *open*. This result is somewhat surprising in view

of the claims of Talmy (2000), Ono (2004), and Spring (2015), but consistent with that of Ito (2017). However, the use of the head position in English is somewhat more limited than in Japanese, with resultative constructions used to some extent (e.g., *push the door open*). Furthermore, it is revealed that the frequencies of change-of-state expressions with “co-events” (i.e., causes of change or means of causation of change) occurring with changes of state are low in both English and Japanese, testifying to the limitations of Talmy’s (2000) typology (Matsumoto & Ujiie 2014).

A close examination of different change-of-state expressions reveals intralinguistic variations, in which common patterns are found in the two languages, with some changes described almost exclusively in the head position, but others described using head-external elements. The choice partially depends on the availability of verbs representing change (which can be used in the head position) and adjectives representing resultant states (which are used in a head-external position). The use of the head position is almost obligatory for changes of state whose resulting states cannot be described by adjectives. This is the case for SITTING DOWN in English and Japanese. Japanese also lacks general adjectives that can be used for the resulting states of changes such as WAKING UP and OPENING, and the head position is almost always used. In contrast, for these changes, English has both verbs representing change and adjectives representing their result, and so two patterns—*open the door* (head) and *push open the door* (head-external)—are possible. Our search suggests that the main verb option is more frequent for both WAKING UP and OPENING in English. Finally, the descriptions of BECOMING RED typically involve an adjective in both English and Japanese, although verbs are also used mainly to describe a change in the color of one’s face.

These intralinguistic differences are examined in relation to Beaver & Garboden’s (2020) observations concerning change-of-state verbs and result adjectives in English. It is argued that the transition to a state conceptualized with a change in the background tends to be described by verbs in both languages (Ujiie & Matsumoto 2025). However, English and Japanese differ in the range of changes for which verbs are used, with the latter covering a wider range.

#### References (selected)

- Beavers, John, and Andrew Koontz-Garboden. 2020. *The roots of verbal meaning*. Oxford: Oxford University Press.
- Ito, Akinori. 2017. *A corpus-based study of the linguistic encoding of motion and change-of-state expressions*. Dissertation, Kobe University.
- Mano, Miho, Hiroaki Koga, and Yo Matsumoto. 2025. Eigo no jootaihenka-hyoogen: Chakuza, kakusei, kaihoo, sekishokuka ni tsuite. In Yo Matsumoto (ed.) *Jootaihenka-hyoogen no ruikeiron*. Tokyo: Kaitakusha.
- Matsumoto, Yo, and Keigo Ujiie. 2024. Nihongo-ni okeru jootai-henka no hyoogen: Ninchiteki ruikeiron no suuryooteiki kenkyuu. *Gengo Kenkyu* 166: 29–57.
- Talmy, Leonard. 2000. *Toward a cognitive semantics (Vol. 1): Concept structuring systems*. Cambridge, Mass.: MIT Press.

# The semantics of superlatives in English and Japanese

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[This paper is based on collaborative work with Kenta Mizutani.]

**Synopsis:** Comparison underlies superlative semantics, which may take two types: one is a comparison among degrees and the other is the one among individuals. In this paper, I argue that Japanese *ichiban* superlatives exclusively employ the latter type, whereas English *-est* can denote both types. I further propose that this distinction accounts for the behavior of so-called modal superlatives in Japanese.

In previous research, two distinct denotations have been attributed to the superlative morpheme *-est*: one that operates on sets of degrees and another that compares individuals (e.g., Heim (1999)). They differ in that *est*<sub>2-place</sub> takes a set of degrees as its first argument, which serves as a comparison class, while *est*<sub>3-place</sub> takes a set of individuals.

- (1) a.  $\llbracket \text{est}_{2\text{place}} \rrbracket = \lambda C_{\langle dt,t \rangle} . \lambda P_{\langle d,t \rangle} . \exists d [P(d) \wedge \forall Q \in C [Q \neq P \rightarrow \neg (Q(d))]]$   
b.  $\llbracket \text{est}_{3\text{place}} \rrbracket = \lambda C_{\langle e,t \rangle} . \lambda P_{\langle d,et \rangle} . \lambda x . \exists d [P(d)(x) \wedge \forall y \in C [y \neq x \rightarrow \neg (P(d)(y))]]$

Both denotations function adequately for a vanilla superlative sentence like *John climbed the highest mountain*. I demonstrate that modal superlatives in Japanese provide crucial evidence that *ichiban* exclusively employs the 3-place *est*.

**Data:** Modal superlatives are constructions in which a superlative co-occurs with a modal of possibility, yielding a paraphrase involving an equative sentence, as illustrated in (2) (Romero (2011), Romero (2013), Schwarz (2005)):

- (2) John met the smartest spy possible.  
a. John met as smart a spy as possible for him to meet.  
b. John met the spy as smart as it is possible for a spy to be.

In Japanese, two expressions—*dekiru kagiri* ('as much as one can') and *kangaer-aeru kagiri* ('as much as one can conceive')—are used to derive modal superlative readings. However, they differ in that the former requires the positive form of a gradable adjective, whereas the latter necessitates the superlative *ichiban*, as demonstrated in (3a)-(3b).

- (3) a. Taro-wa dekiru kagiri (??*ichiban*) muzukasii mondai-o toita.  
Taro-TOP can limit<sub>noun</sub> (est) difficult problem-ACC solved.  
'Taro solved the most difficult problem he could.'  
b. Taro-wa kangaer-aeru kagiri ??(*ichiban*) muzukasii mondai-o toita.  
Taro-TOP imagine-can limit<sub>noun</sub> (est) difficult problem-ACC solved  
'Taro solved the most difficult problem imaginable.'

**Analysis:** I propose that the contrast observed in (3a) and (3b) stems from the hypothesis that Japanese superlative morpheme *ichiban* exclusively adopts the 3-place denotation in (1b). The contrast in (3) arises because only (3b) provides a comparison class of the appropriate type (i.e. a set of individuals).

I assume a relational analysis of gradable adjectives, (4a). *kagiri* ‘limit’ is analyzed as an expression that denotes the maximality, which picks up the largest element in a relevant set with ordering, (4b) (cf. Tomioka (2015)).

- (4) a.  $\llbracket \text{muzukasii ‘difficult’} \rrbracket = \lambda d. \lambda x. \text{DIFFICULTY}(x) \geq d$   
 b.  $\llbracket \text{kagiri} \rrbracket = \lambda P_{\langle \tau, t \rangle}. \text{MAX}(P)$ , where  $\tau = \text{type } d \text{ or } e$   
 c.  $\text{MAX}(P) = \iota x. \forall x' \in P \rightarrow x' \leq x$ . *kagiri* as Maximization

We propose that (3a) involves an ACD structure, which is resolved by the matrix predicate, while (3b) does not. I assume that (3b) forms a headless relative. The two *kagiri*-clauses have the following semantics:

- (5) a.  $\llbracket \llbracket [1 \Delta_{\text{ACD}} \text{dekiru}] \text{kagiri} \rrbracket \rrbracket = \text{MAX}(\lambda d_d. \text{Taro can solve a } d\text{-difficult problem})$   
 b.  $\llbracket \llbracket [\text{DP } [1 \text{ t1 kangae-rareru}] \text{kagiri}] \rrbracket \rrbracket = \text{MAX}(*(\lambda x. \text{one can think of } x))$

Crucially, (5a) is of type *d* while (5b) is of type *e*. If *ichiban* denotes the 3-place *est*, it follows that (5a) cannot be compatible with *ichiban*. By contrast, (5b) can serve as an argument for the superlative morpheme, given an appropriate type-shift.

**Extension:** Given Coppock and Engdahl’s (2016) claim that an elative superlative reading obtains via a degree comparison class, the current analysis predicts that *ichiban* lacks this reading. This prediction is borne out: (6) is felicitous only in a context where Taro also had dinner with someone other than Hanako, which in turn means that (6) has the relative interpretation of superlatives (Heim (1999)) but not the elative one (i.e. Taro had dinner with a very high degree of delight with Hanako).

- (6) Taro-wa Hanako-to ichiban tanosii yuusyoku-o tabeta.  
 Taro-TOP Hanako-with est delightful dinner-ACC ate  
 ‘Taro ate { the most delightful dinner / \*a most delightful dinner } with Hanako.’

## References

- Coppock, Elizabeth, and Elisabet Engdahl. 2016. Quasi-definites in Swedish: Elative superlatives and emphatic assertion. *Natural Language & Linguistic Theory* 34:1181–1243.
- Heim, Irene. 1999. Notes on superlatives. Available from Semantics Archive.
- Romero, Maribel. 2011. Modal superlatives and 3-place vs. 2-place *-est*. *Baltic International Yearbook of Cognition, Logic and Communication* 6:1–39.
- Romero, Maribel. 2013. Modal superlatives: a compositional analysis. *Natural language semantics* 21:79–110.
- Schwarz, Bernhard. 2005. Modal superlatives. In *Semantics and Linguistic Theory*, 187–204.
- Tomioka, Satoshi. 2015. (non)-exhaustivity of *dake* ‘only’. *Nihon Gengo-Gakkai Dai 150-kai Taikai Yokooshuu* [Proceedings of the 150th Meeting of Linguistic Society of Japan] 134–139.

# A Tale of Two Japanese: Anti-Reconstruction and String-Vacuous Head Movement

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Since the seminal work by Han et al. (2007, 2008), there has been continued debate concerning population split in grammar acquisition in head-final languages such as Korean and Japanese. One of the case studies bearing on this question is the anti-reconstruction effect. Bobaljik and Wurmbrand (2005, 2007) (B&W) report that in Japanese, a universal quantifier in the direct object position within a complex predicate headed by the negative implicative verb *wasureru* ‘to forget’ only allows wide scope with respect to the verb. This observation is illustrated in (1). B&W argue that accusative QPs as in (1) move to the specifier of the matrix *v* to check accusative Case against it; the QPs, so moved, cannot undergo reconstruction because Case-licensing configurations must be visible at LF.

- (1) Taroo-wa subete-no hon-o yomi-wasure-ta. ‘Taro forgot to read all the books.’  
Taro-TOP all-GEN book-ACC read-forget-PST **[V>forget; \*forget>V]**

However, Goro (2007) observes that about 30% of adult participants in his TVJT experiment accepted the narrow scope reading and takes this finding as support for population split among Japanese speakers. It is important to note, however, that while B&W employed the pre-nominal quantifier structure as in (1), Goro’s experiment used the floating quantifier structure *NP-o zenbu* ‘NP-ACC all’ instead, as shown in (2). This syntactic difference could have influenced the resulting scope interpretations actually available to Japanese speakers, thus leaving open the question of whether the purported population split merely originates from the two different syntactic structures.

- (2) Pikachu-wa omocha-o zenbu katazuke-wasure-ta. ‘Pikachu forgot to put away  
Pikachu-TOP toy-ACC all put.away-forget-PST all the toys.’ **[% forget>V]**

Against this background, this paper has two research objectives. One is to report the results of an ongoing TVJT experiment to verify whether a genuine grammar split exists among Japanese speakers with respect to the anti-reconstruction constraint. This part is based on my joint work with Hajime Ono (Tsuda University). The other objective is to elucidate the nature of this constraint itself. I argue that the scope restriction in (1) is not due to the anti-reconstruction of the moved object but to string-vacuous syntactic V-to-V movement and its associated obligatory semantic reconstruction.

Our experiment with 59 Japanese subjects used the pre-nominal quantifier structure originally used by B&W and tested two conditions: the negative implicative (NI) condition and the negative morpheme (NM) condition. The NM condition was included as a point of comparison with the NI condition to reflect Han et al.’s (2008) finding that about half of their 32 Japanese subjects accepted the narrow scope reading of a numeral quantifier in negative sentences in their TVJT experiment. Sample test sentences of the two conditions are given in (3), together with a sample story in (4).

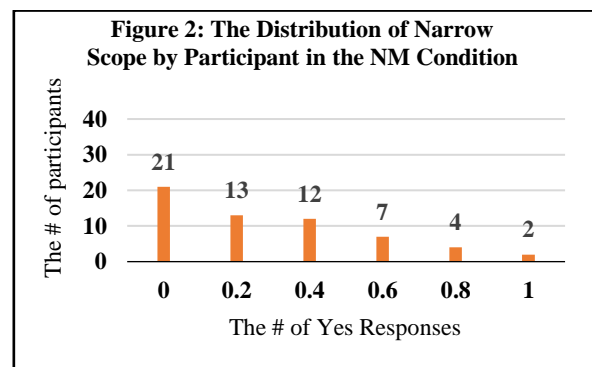
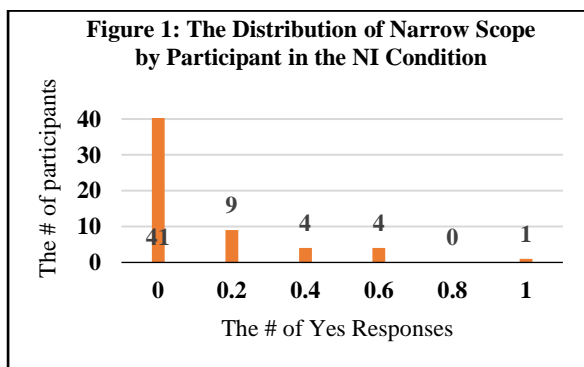
- (3) Misakisan-wa subete-no shokuzai-o {kai-wasure-ta [NI]}/kaw-anak-atta [NM]}.  
Misakisan-TOP all-GEN ingredient-ACC buy-forget-PST/buy-NEG-PST  
‘Misaki {forgot to buy/didn’t buy} all the ingredients.’

- (4) Housewife Misaki went to buy daikon, konjac, and eggs, ingredients she didn’t have at home to make oden. She first picked up daikon and then konjac. As she was about to buy eggs, she met a friend who was also shopping there and got engrossed in conversation, so she ended up heading to the checkout counter with just the daikon and konjac and went home. It wasn’t until it was time to prepare dinner that she finally realized that she had forgotten to buy the eggs.

After the story was read aloud by the experimenters, participants were asked to judge whether the test sentences were true or false based on the story. There were 16 trials: two practice trials, four filler trials, and ten target trials. The target trials presented two versions of the sentences paired with one of the two conditions. The goal of the experiment was to obtain the acceptance rate of the narrow scope reading of the quantifier in the test sentences and their distributions across the two conditions. Table 1 shows that the difference in acceptance rate between the two conditions is statistically significant ( $t(58) = 4.62, p < .01$ ) whereas Figures 1 and 2 do not reveal any bimodal distribution in acceptance rate. The latter finding thus does not support the idea of split grammar suggested by Goro and is consistent with another view that the population split observed in his experiment may be specific to the floating quantifier structure instead of reflecting a fundamental division in Japanese grammar acquisition.

Condition	Acceptance Rate %	Mean	SD
Negative Implicative	11.5%	0.12	0.21
Negative Morpheme	28.5%	0.28	0.28

**Table 1: The Mean Acceptance Rates for the Narrow Scope Reading (N=59)**



This paper would have little umami if it ended here. The second research objective is to nail down precisely what the anti-reconstruction constraint is. Crucially, B&W’s analysis is designed to block Case-marked QPs from undergoing LF-reconstruction. As such, it cannot account for the fact that XPs such as adverbs/adjuncts, which have nothing to do with accusative Case, nevertheless exhibit the obligatory wide scope with respect to *wasureru*, as in (5–6). The right generalization to be captured here is thus that XPs that are syntactically positioned within the *embedded* VP behave as if they somehow belonged to the *matrix* VP for semantic interpretation.

- (5) Erin-wa sono botan-o gokai osi-wasure-ta. ‘Erin forgot to push that button  
Erin-TOP that button-ACC five.times push-forget-PST five times.’ [**\*forget>five times**]
- (6)#Megumi-wa sono tokubetuna gizyutu-de kuruma-o syuurisi-wasure-ta.  
Megumi-TOP that special technology-with car-ACC repair-forget-PST  
‘Megumi forgot to repair her car with that special technology.’ [**\*forget> instrumental PP**]

I propose that this generalization is derived through Keine and Bhatt’s (2016) theory, originally developed for the German long passive construction, that  $V_1$ -to- $V_2$  head *raising* comes with obligatory semantic *lowering* of  $V_2$  to  $V_1$  since it is interpreted through Function Composition. This analysis sheds new light on the semantics of head movement from a previously unexplored perspective of scope-narrowing rather than scope-widening, contrary to standard wisdom expressed in the literature on so-called semantically contentful head movement (e.g., Lechner 2006; Roberts 2010). It also suggests that at least certain instances of string-vacuous movement in Japanese are associated with a semantic effect – obligatory semantic reconstruction – and hence is to be recognized as a narrow syntactic operation (Kishimoto 2007; Sato and Hayashi 2018; Sato and Maeda 2018).