

Distributivity within Nominal Domain and Kind Partition Readings

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Introduction In Japanese, *zutsu* forces distributive readings.

- (1) karera-ga kaban-o san-ko-**zutsu** hakon-da.
they-Nom suitcase-Acc 3-CL_{Things}-Dist carry-Past
“They each carried three suitcases.”

Distributivity has been analysed to be parasitic on inherently defined atomic parts. However, that view is problematic because *-zutsu* can also generically distribute over individuals and construct an *ad hoc* subkind. I propose a situation-based account for this and show that units of distribution comes from different ways to bind the situation pronoun and it straightforwardly constructs a subkind.

Prenominal position Not only at the adverbial position, but also *zutsu* can occur at the prenominal position, where it induces a distributive reading within the argument nominal.

- (2) Kinoo, Wataru-ga ni-satsu-**zutsu**-no hon-o ka-tta.
Yesterday Wataru-Nom 2-CL_{Volumes}-Dist-Gen book-Acc buy-Past
“Yesterday, Wataru bought a two-volume book.”

The interpretation here is that each chunk of books (key) consists of two volumes (share). I call this reading a *kind partition reading*. As the example shows, the reading does not require plural individuals nor plural events. It even allows a floating numeral quantifier to co-occur.

- (3) Kinoo, Wataru-ga ni-satsu-**zutsu**-no hon-o i-ssatsu ka-tta.
Yesterday Wataru-NOM 2-CL_{Volumes}-DIST-GEN book-ACC 1-CL_{Volumes} buy-PAST

On the other hand, floating *-zutsu* cannot co-occur with another floating numeral quantifier.

- (4) * Kinoo, Wataru-ga kaban-o san-ko-**zutsu** hito-tsu hakon-da.
Yesterday, Wataru-NOM suitcase-ACC 3-CL_{Things}-DIST 1-CL_{Things} carry-PAST

DP-internal scope Truth-conditionally, kind partition readings differ from cardinal modification. Compare (2) with (5) under the following scenarios: (5) is false under the scenario 1, but true under the scenario 2. However, (2) is true under the scenario 1, but false under the scenario 2.

- (5) Kinoo, Wataru-ga ni-satsu-no hon-o ka-tta.
Yesterday Yasu-Nom 2-CL_{Volumes}-Gen book-Acc buy-Past
“Yesterday, Wataru bought two books.”

- (6) At a book store Wataru is looking for textbooks for his semantics class. Yasu found volume 1 and volume 2 of *Logic, Language and Meaning* and *Semantics in Generative Grammar*.
a. Scenario 1: Wataru bought a copy of *Logic, Language and Meaning* volume 1.
b. Scenario 2: Wataru bought two copies of *Semantics in Generative Grammar*.

Moreover, this kind partition parts project from question.

- (7) a. Kinoo, Wataru-wa ni-satsu-no hon-o ka-tta no.
Yesterday Wataru-TOP 2-CL_{Volumes}-GEN book-ACC buy-PAST Q
“Yesterday, did Wataru buy two books?” (no presupposition)
b. Kinoo, Wataru-wa ni-satsu-**zutsu**-no hon-o ka-tta no.
Yesterday Wataru-TOP 2-CL_{Volumes}-DIST-GEN book-ACC buy-PAST Q
“Yesterday, did Wataru buy a two-volume book?”
Presupposition: there is a book which comes in two-volumes.

Previous accounts Champollion (2017) proposes a type of non-atomic distributivity operators.¹

- (8) Event-based Part operator: $[[Part_{\theta,C}]] = \lambda V \lambda e. e \in * \lambda e' [V(e') \& C(\theta(e'))]$

The C variable picks up a contextually salient occasion. It is necessary for *occasion readings*.

- (9) Shun-ga kaban-o san-ko-**zutsu** hakon-da.
 Shun-NOM suitcase-ACC 3-CL_{Things}-DIST carry-PAST
 “Shun carried three suitcases at each salient occasion.”

In (9), the subject is a proper noun and blocks distribution over individuals. However, the sentence is true with distributing over salient occasions, e.g., Shun brought three suitcases per once and repeated it until he finishes carrying every suitcase. However, this analysis cannot be extended for kind partition readings.

Proposal I propose a situation-based distributivity operator. Adopting the possibilistic situation semantic framework, I use a situation pronoun to resolve contextual information with *matching function* (Rothstein, 1995), which maps an event to its corresponding counterpart. Extending it to situation semantic term, Kratzer (2004); Schwarz (2009) treats it as an assignment of different individuals/events to situations.. Based on this, I propose the following entry.

- (10) Situation-based Part operator: $[[Part_M]] = \lambda P \lambda s. s \in * \lambda s' \exists e/x \sqsubseteq s' [P(e/x) \& M(s') = e/x]$

Based on this operator, I propose the following denotation for *-zutsu*.

- (11) $[[zutsu]] = \lambda Q \lambda P \lambda s. s \in * \lambda s' \exists e/x \sqsubseteq s' [Q(e/x) \& P(e/x) \& M(s') = e/x]$

Occasion readings are straightforward: s pronoun and M function play the role of C variable.²

This change in perspective makes situation-based treatment of kind partition readings possible. Following Miyamoto (2009), I assume that prenominal *-zutsu* underlyingly forms a relative clause. Extending it, I further assume this underlying relative clause is an appositive.

- (12) hon-ga ni-satsu-**zutsu** da.
 book-NOM 2-CL_{volume}-DIST COPULA
 (lit) “The book comes in two volumes.” (Miyamoto, 2009)

I assume that individual-level predicates are inherently generic (Chierchia, 1995) and kinds are the plural individual that comprises all of the atomic members of the kind in any world/situation (Chierchia, 1998). I propose that the predicate “Num-CL-zutsu-Copula” is an individual-level predicate and takes the maximal situation, instead of being under the scope of Gen-operator.

- (13) hon-ga ni-satsu-zutsu-da (the book comes in two volumes) =
 $\lambda s. s \in * \lambda s' \exists x \sqsubseteq s' [\text{VOLUME}(x) = 2 \& \text{book}(x) \& M(s') = x]$
 (where s is the totality of situations which contains this type of books.)

The matrix clause is independent of it and get a normal existential reading. For example, the matrix clause of (2) is given as (14) and (13) is a presupposition/conventional implicature with it.

- (14) $\lambda s. \exists e \exists x [\text{book}(x) \& \text{read}(e) \& \text{Ag}(e) = \text{Wataru} \& \text{Th}(e) = x]$ (where s can be anything.)

This explains why kind partition readings are truth-conditionally different from cardinal modification and only observed in the prenominal position. In this way, this situation-based account offers a unified account for occasional readings and kind partition readings. The proposed account implies that counting units for distributivity is not inherently defined, but contextually supplied and also some subkinds are constructed from the maximality of situations.

¹ ‘*’ signifies that a set with it is closed under sum-formation.

² The situation pronoun s can be bound by the Austinian topic situation or contextually salient situation via assignment function. Its details are described in the talk.