

## The Core Semantic Property of the disjunction and the question particle, *ka*, in Japanese (and Old Japanese)\*

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In this presentation I claim that the disjunction particle, *ka*, and the question particle, *ka*, have the same semantic function, which I call disjunction operator, in Japanese, and due to the function, it is possible to explain the semantics of existential quantifier-like elements, ‘WH+*ka*’, and the meaning of *wh*-questions in a uniform manner following Morita (2002, 2005). The disjunction operator is defined as follows:

(1) The disjunction operator (Morita (2005)):

$$\cup x [P(x)](a, b, c, \dots) = P(a) \text{ or } P(b) \text{ or } \dots \quad \text{where } a, b, c, \dots \text{ are entities.}$$

First, compare the following pair:

(2) Ken-ga dare-ka-ni atta.

-Nom who-ka-Dat saw

‘Ken saw someone.’

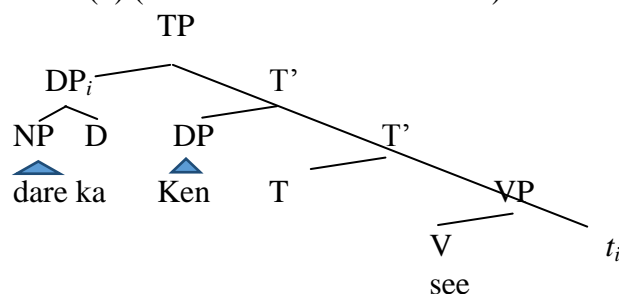
(3) Ken-ga dare-ni aimasita ka?

-Nom who-Dat saw Q

‘Who did Ken see?’

As (2) shows, if the disjunction particle, *ka*, is attached to a *wh*-phrase, it becomes like an existential quantifier. In contrast, when *ka* is separated from a *wh*-phrase and placed in C, it functions as a question particle and a *wh*-question is formed. I start with (2). The structure and the meaning of (2) are derived as follows:

(4) The syntactic structure of (2) (the word order is irrelevant):



(5) The semantic derivations for (2) (tense is omitted):

NP: dare, {*a, b, c, ...*} a set of people

D: ka,  $\lambda Q \lambda P [\cup x [P(x)](Q)]$

DP:  $\lambda P [\cup x P(x)(a, b, c, \dots)] = \lambda P [P(a) \text{ or } P(b) \text{ or } \dots]$

T':  $\lambda y [\text{see}(k, y)]$

TP: see(*k, a*) or see(*k, b*) or ...

Following Rooth (1985), I assume that *wh*-elements in Japanese are inherently contrastive-focused and generate a set of relevant entities as in [<sub>NP</sub> *dare*] above, in which case a set of people are produced. *Dare* merges with the disjunction particle, *ka*, which has the disjunction operator. As a result, it denotes ‘ $\lambda P [P(a) \text{ or } P(b) \text{ or } \dots]$ ’. However, due to type-mismatch, the DP is assumed to QR and adjoin to TP as in (4). When it merges with T', a proposition such as ‘Ken saw *a* or Ken saw *b* or Ken saw *c, ...* where *a, b, c, ...* are people,’ which is semantically equivalent to ‘Ken saw someone.’ In this

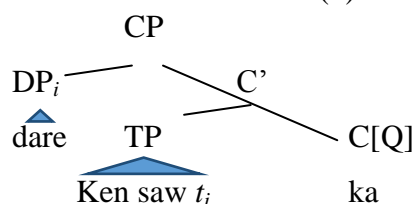
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way, existential-like interpretations are achieved by the disjunction operator.

Next, the syntactic and the semantic derivation of (3) are the following:

(6) The syntactic structure of (3):



(7) The semantic derivations for (3):

- TP:  $\lambda y[\text{see}(k,y)]$
- C(Q):  $\lambda R\lambda z[p=R(z)]$  (the equation insertion rule)
- C(ka):  $\lambda P\lambda Q[\cup x[P(x)](Q)]$
- C':  $\lambda z[p=\text{see}(k,z)]$  (The equation insertion rule is applied, first.)
- C':  $\lambda Q[\cup x[p=\text{see}(k,x)](Q)]$  (Then the disjunction operator is applied.)
- DP:  $\{a, b, c, \dots\}$  a set of people
- CP:  $\cup x[p=\text{see}(k,x)](a, b, c, \dots) = [p=\text{see}(k,a) \text{ or } p=\text{see}(k,b) \text{ or } \dots]$

Lambda abstraction is applied on 'p':  $\lambda p[p=\text{see}(k,a) \text{ or } p=\text{see}(k,b) \text{ or } \dots]$

Following the standard assumption of analysis of in-situ *wh*-questions (e.g. Huang (1982)), the *wh*-phrase, *dare*, goes through covert *wh*-movement and is raised to C-spec. Although the question particle, *ka*, has the disjunction operator as in the disjunction particle, a few differences exist between (3) and (2). First, the order of ' $\lambda P$ ' and ' $\lambda Q$ ' is reversed, which is necessary because the question particle must be interpreted with TP first in the case of *wh*-questions whereas the disjunction particle must be interpreted with the *wh*-phrase first in the case of (2). The second difference is that equation must be inserted in CP, which is likely to be an independent operation of [Q] (so it is not an inherent property of the disjunction operator). There are two semantic functions in CP, and the equation insertion rule must be applied to TP before the disjunction operator application. As a result, we have a set of propositions like ' $\{\text{Ken saw } a, \text{Ken saw } b, \dots, \text{ where } a, b, \dots \text{ are people}\}$ '.

As far as the two kinds of *ka* are concerned, the sole semantic difference is the order of ' $\lambda P$ ' and ' $\lambda Q$ ' in the disjunction operator, and this is not a core property of *ka* (hence, changeable). For example, *wh*-questions in old Japanese are formed by attaching *ka* to *wh*-elements as follows:

(8) Tare-ka mata hanatatibana-ni omoiidemu. Ogawa (1977: 222)

who-ka again flower.orange-Dat remember

'Who will again remember me at the time of the orange flower?'

In this case, the order of ' $\lambda P$ ' and ' $\lambda Q$ ' in the disjunction operator is the same as (2), because *ka* must be interpreted with a *wh*-phrase first in old Japanese *wh*-questions.

[Selected references] Huang, J. (1982) "Move WH in a language without WH movement," *The Linguistic Review* 1, 369-416; Morita, H. (2002) *English and Japanese Questions*, doctoral dissertation, University of Oxford; Morita, H. (2005) "The semantics of interrogative pronouns, existential(-like) quantifiers, and universal(-like) quantifiers in Japanese," *Journal of Japanese Linguistics* 21, 21-41; Ogawa, K. (1977) "Where diachronic and synchronic rules meet: A case study from Japanese interrogatives and kakari-musubi," *Papers in Japanese Linguistics* 5, 193-242; Rooth, M. (1985) *Association with focus*, doctoral dissertation, University of Massachusetts, Amherst.