

## Delimitedness Constraint on Floating Numeral Quantifiers

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**1. Introduction.** It has been said that Floating Numeral Quantifiers (FNQs, henceforth) in Japanese are compatible with object ((1a)), passive subject and unaccusative subject ((1b)), but not with unergative subject and transitive subject ((1c)), for their host NP. These distributions have been explained based on the locality condition between a FNQ and its host NP (Miyagawa 1989, a.o.). In (1a,b), the locality relation between FNQs and their host NPs is satisfied in VP, under the assumption of the unaccusative hypothesis. On the other hand, in the case of (1c), the FNQ and its host NPs are not in a sufficiently local relation. However, there are some counterexamples for this analysis ((2)-(7)). In this paper, I argue for a unified analysis of these counterexamples. I propose that Japanese FNQs require a ‘bounded’ interpretation and should follow a delimitedness condition. (2)-(7) show that Japanese FNQs can appear only when they delimit events, numbers of individual, or temporal duration.

**2. The Puzzle.** In one set of examples ((2)-(3)), the syntactic conditions for FNQ are met, but the sentences are excluded. (2a,b) are examples of psych verbs, which represent a state without an inherent endpoint. FNQs whose host NPs are transitive object or passive subject are not allowed in spite of (1a,b). (3) is an example of individual-level predicate, whose interpretation does not have the endpoint of an event. FNQ is not compatible with an individual-level predicate (cf. Miyamoto 1996, Nakanishi 2004, a.o.), even though (1b) predicts that (3) is acceptable. In the other set of examples ((4b), (5), and (7)), the locality appears not to be met, but FNQs are allowed. (1c) predicts that FNQs are not compatible with unergative subjects as their host NP. That is the case in (4a), but not in (4b). *Dance* is an active verb without an inherent endpoint, but just adding the adverb *in sequence* makes it possible to delimit a sequence of events; the number of dancers, 10, delimits a series of dancing events. (1c) also predicts that a transitive subject cannot be the host NP of a FNQ, but if we add an emphatic morpheme *-mo* ‘no less than’ or *-dake* ‘only’ to FNQs, the sentence becomes grammatical in (5) (cf. Takami 1989, Mihara 2004). Just saying “three students” does not imply the total number of students in a context; the interpretation could be “three students (out of ten, for example) sent books to a library.” However, “no less than / only three students” implies that the number of students in a context is just three. These emphatic morphemes ‘delimit’ the total number of students in a context. (7b) is another example of FNQ whose host NP is a transitive subject. In an out of the blue context, it is ungrammatical. However, under the situation of (6), it becomes acceptable. Under the situation in (6), the buying events take place in a short time and the number of buyers delimits a sequence of buying events.

**3. Analysis.** To explain the contrast between (1) and (2)-(7), I suggest that Japanese FNQs should be related to delimitedness properties: event, tense, number of individuals, and so on. Japanese FNQs can be licensed only if they show up in a ‘bounded’ context. This requirement is not satisfied by an overt delimiting lexical item, but by interpretation. (7b) with a FNQ whose host NP is transitive subject is grammatical even though there is not any particular aspectual expression. Based on this assumption, I suggest (8). Suppose there are two structural DelPs: higher and lower positions. The lower DelP is between VP and *vP*. This DelP licenses the delimitedness property of the internal argument (cf. Tenny 1994). On the other hand, the higher DelP is between *vP* and TP (cf. Travis 1994, Kratzer 1996, Arad 1999). This is a functional phrase which is present only if interpretation of the proposition has some delimiting property other than delimitedness provided by an internal argument. In other words, the higher DelP is provided by the interpretation. Japanese FNQs are base-generated in adnominal position, as a sister to their host NP. Now, we suppose that [+del] is checked by Agree (Chomsky 2000) in situ, in which the head of DelP is the probe and the FNQ is the goal. After the feature checking of the [+del], the host NP moves up to the spec TP if it is the subject, or it adjoins to *vP* if it is the object. That means that a FNQ does not move, and it is a stranded element of host NP movement, as in Sportiche (1988). These analyses can explain all the data in (2)-(7). Crucially, (1c) must be excluded not by structural locality but by interpretation with [ $\pm$ del]. The ungrammatical sentences in (2), (3), and (4a) have no DelP because of the non-delimited interpretations, and FNQs cannot be licensed. As for the grammatical cases in (4b) and (7), their derivations can be represented as (9) and (10), respectively.

- (1) a.  $\checkmark$  Subj [VP **Obj FNQ** V ] (Transitive Object)  
 b.  $\checkmark$  **Subj<sub>i</sub>** [VP  $t_i$  **FNQ** V ] (Passive / Unaccusative subject)  
 c. \* **Subj** [VP (Obj) **FNQ** V ] (Transitive / Unergative subject)
- (2) a. \* John-wa tomodachi-o soredemo **san-nin** shinzi-ta (Transitive object)  
 John-Nom friends-Acc still 3-CL believe-Past  
 ‘John still believed his three friends’  
 b. \* Kyouju-ga seito-ni **futa-ri** nikum-are-ta (Passive)  
 professors-Nom student-by 2-CL hate-PASS-Past  
 ‘Two professors were hated by a student’
- (3) \* Amerika-dewa hikouki-gaisya-ga **mit-tsu** yuumei-da (Unaccusative)  
 United States-in flight companies-Nom 3-CL famous-be  
 ‘In the United States, three flight companies are famous’
- (4) a.?\* Kodomo-ta *waninatte* **ju-nin** odotta (Unergative)  
 children-Nom in a circle 10-CL danced  
 ‘Ten children danced in a circle’ (Miyagawa 1989)  
 b. Kodomo-ga *tsugitsugi-to* **ju-nin** odot-ta (Unergative)  
 children-Nom sequence-in 10-CL dance-Past  
 ‘Ten children danced one after another’
- (5) Gakusei-ga hon-o tosyokan-ni **san-nin**-{**dake/mo**} okut-ta (Trnstv subj)  
 students-Nom book-Acc library-Dat 3-CL-{only/no less than} send-Past  
 ‘No less than / only three students sent a book to a library’
- (6) Situation for (7); you are working at a bookstore, and right before you closed the store, four students rushed into your store to buy particular books. Because of the business, you closed the store 10 minutes later than usual.
- (7) a. Why did you close your store 10 minutes late today?  
 b. Gakusei-ga hon-o **yo-nin** kat-ta kara (Transitive subject)  
 students-Nom books-Acc 4-CL buy-Past because  
 ‘It is because four students bought books’
- (8) a. The internal argument and FNQ contain an interpretable feature [+del(imit)].  
 b. The head of a functional head of DelP (Delimit Phrase) licenses FNQs checking the [+del] feature of FNQ.
- (9) [TP children<sub>i</sub> [DelP in sequence [vP [NP  $t_i$  **10-CL**<sub>[+del]] ] [VP dance ]  $v$  ] Del<sub>[+del]</sub> ] Past ]</sub>
- (10) [TP students<sub>i</sub> books<sub>j</sub> [DelP [vP  $t_j$  [NP  $t_i$ ] **4-CL**<sub>[+del]] [VP  $t_j$  buy ]  $v$  ] Del<sub>[+del]</sub> ] Past ]</sub>

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