A FUNCTIONAL ANALYSIS OF NUMERAL QUNATIFIER CONSTRUCTIONS IN JAPANESE

by

OSAMU AMAZAKI

A dissertation submitted to the
Faculty of the Graduate School of the
State University of New York at Buffalo
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy

Acknowledgements

I would like to express my sincere appreciation to all the individuals who provided the moral and intellectual support that encouraged me to complete this dissertation that once seemed to me like a never-ending project. First and foremost, I wish to thank my extraordinary helpful and supportive committee members. I wrote up most part of this dissertation while working in Singapore and only paid an annual visit to Buffalo for consultation. However, whenever I came back to Buffalo, they always gave me a hearty welcome and their unstinting support. I am grateful to Robert D. Van Valin Jr., chair of my committee, for his insightful suggestions and constant encouragement. His forward-looking attitude always gave me a spiritual uplift and actually was a great help for me to continue and finish this dissertation. I also wish to thank Jean-Pierre Koenig for his insightful and often critical questions and comments. I might have not fully answered his questions, but I am sure that his input was a great help for me to clarify my vague ideas. Many thanks go to Mitsuaki Shimojo, who thoroughly checked my Japanese data in the dissertation and gave me exceptionally helpful suggestions and guided me in a direction that I should take.

Many thanks go to my family and friends at Buffalo and Singapore. I wish to express my gratitude to my parents and my brothers for their patience and understanding. I am also thankful to Hidematsu Miura, Chris Phipps, Takashi Yoshida, Jennifer Cornish, Akiko Sugiyama, Kazunori Kimura, Kiyoko Toratani, Shingo Imai, Sri Naido, and Takako Yamada, whose friendship and concern often lifted my sagging spirit. And my very special thanks go to Atsuko Nishiyama, who kept encouraging me while she was working on her own dissertation. I am also very grateful to Kristen Peck, who read all my draft and did a grammar check for me.

Last but not least, I also wish to express my thanks to the support that I received from my colleagues at the Department of Japanese Studies at the National University of Singapore. They provided me with an ideal environment to write my dissertation. Without their moral encouragement and this ideal work environment, I would have never finished this dissertation.

Notes on Transcription

Japanese examples are romanized phonetically, in accordance with the *Kunrei-siki* system, with the exception that long vowels are indicated by two vowel symbols in a sequence, rather thatn by a vowel marked with a circumflex.

An [*] at the beginning of a sentence indicates that the sentence is clearly ungrammatical, and the symbol [#] at the beginning of a sentence indicates that the sentence is grammatical but clearly inappropriate in the given discourse context. A [?] at the beginning of a sentence shows that the sentence is awkward due to either grammatical or pragmatic reasons.

Following abbreviations are used in this thesis.

ACC	accusative marker
ADJ	adjunct
ARG	argument
CL	classifier
COM	comitative marker
COP	copular
DAT	dative marker
DEF	definite
DEIC	deictic operator
DO	direct object
FL	floating NQ construction
FQ	floating NQ
GEN	genitive
JX	juxtaposed NQ construction
JX-list	JX with list reading
JX-sp	JX with specific reading
LS	logical structure
LOC	locative marker
LQ	lexical quantifier
NEG	negative marker/operator
N	noun
NASP	noun aspect
NOM	nominative marker
NP	noun phrase
NQ	numeral quantifier
NUC	nucleus
NUM	number operator
OBJ	object
P	particle
PAS	passive
PL	plural marker
POT	potential
PoCS	post-core slot
PP	prepositional phrase
PrCS	pre-core slot
PRED	predicate
Pre-N	pre-nominal NQ construction
PreN-sp	Pre-N with specific reading
PreN-sg	Pre-N with single reading
PRG	progressive
PRO	pronoun
PST	past tense
Q	question marker/quantifier
QLT	quality operator
QNT	quantity operator
RDP	right detached position
RSLT	resultative
SPC	specificity operator
TOP	topic marker
V	verb
Vi	intransitive verb
Vt	transitive verb

Abstract

The association patterns found between forms and meanings in language are not inevitable since the same meaning can be represented by different forms in different languages. However, it does not mean that they are completely random; instead, there are often some motivations for a certain form to have a certain meaning and their associations can be accounted for from a functional perspective. This study deals with a rich variety of numeral quantifier (NQ) constructions in Japanese and investigates the association patterns between the formal properties of those NQ constructions on one hand and their meanings and discourse functions on the other through a comparative analysis of the meanings and discourse functions of those constructions.

The thesis is organized as follows. Chapter 1 shows that NQ consists of a numeral and a classifier, both of which have some subtypes, and introduces a total of ten NQ constructions that I deal with in this study. Chapter 2 through Chapter 4 analyze the discourse functions of the three major NQ constructions, namely the Pre-nominal NQ construction (Pre-N), the Juxtaposed NQ construction (JX), and the Floating NQ construction (FL), and discuss their functional relationships among their intra-constructional variations as well as the functional relationships with other NQ constructions that are structurally relevant to them. I also discuss the constraints on quantifier-float and propose that the constraints are multi-layered in syntax, semantics, and pragmatics respectively. Chapter 5 discusses the inter-constructional relationships of the three NQ constructions in terms of the cognitive representation of quantification and compares their discourse functions in regard to the collectiveness of the denoted entities, the scope of NQ, and the distribution patterns in text data. Chapter 6 presents the formal representations of the functional differences of the NQ constructions using the Role and Reference Grammar

framework. This study shows that the NQ constructions in Japanese have non-arbitrary association patterns between their forms and meanings to a great extent and that the differences in their structural properties are clearly reflected in the differences in their meanings and discourse functions.

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Chapter 1 Introduction

The use of classifier is obligatory for encoding numerical quantitative information in a classifier language (Greenberg 1972; Aikhenvald 2000; Corbett 2000).[1] The Japanese language is one of such classifier languages, and classifiers are always attached to the preceding numerals and form numeral quantifiers (NQ).[2] Appropriate classifiers are chosen according to the properties and/or functions of the entities denoted by the co-occurring nouns and the choice of classifiers reflects how certain entities are semantically categorized in the given language (Craig, ed. 1986). The semantic relationship between entities denoted by the host nouns and classifiers is one of the major issues in Japanese linguistics and there are quite a few studies on it (Sanches 1977; Downing1984, 1996; Lakoff 1987; Matsumoto 1987, 1993). This is a quite interesting linguistic phenomenon and a wide variety of studies on classifiers have been conducted; why and how classifiers developed and how they are linked to other semantic and grammatical properties in the language (Greenberg 1972), how appropriate classifiers are chosen (Inoue 1993), how languages with classifiers are typologically classified with reference to languages with noun classes (Kiyomi 1992), how the semantic extension of classifiers takes place (Lakoff 1987), and so on.

Besides the semantic categorization represented by classifiers, numeral quantifiers are also closely related to semantic issues such as plurality, the scope of quantifiers, the contrast between distributive and collective readings, and so on (Hamm and Hinrichs 1998; Kuno et al.

[1] Greenberg (1972) presents an in-depth analysis about the definition of 'classifier language.' However, since the main objectives of this thesis are not typological analysis or classification of such languages, I simply define classifier language as stated above.

[2] There are some exceptions. When the numeral is large, the use of classifier may be optional. Besides numerals, there are some morphemes that directly precede classifiers, e.g. the interrogative expression, *nan-* 'what' and an approximate amount expression, *suu-* 'several.'

1999). NQ constructions are directly relevant to those issues and highly appropriate for us to examine how such meanings are represented in different NQ constructions. For example, Landman (1996) analyzes the relationship among the three types of readings: distributive, collective, and cumulative, and he discusses how plurality is represented by quantified expressions. In English, those three readings are not necessarily differentiated in structure and therefore the interpretation of the English sentence '*four boys lifted two tables*' can be ambiguous. However, in Japanese, such ambiguity can be reduced by the constructional variations to some extent because the different interpretations are usually represented by different constructions.

In addition to this semantic classification reflected in classifiers, there is also a wide variety of constructions involving an NQ or a numeral in Japanese, and Kim (1995) lists a total of nine NQ constructions. The issues concerning NQ constructions have been one of the most frequently discussed topics in Japanese syntax. However, the main concern of most of the studies is about the constraints on so-called 'quantifier floating (Q-float).' Some researchers discuss transformational relationships between FL and its base constructions. They choose one construction as base and try to explain a transformational relationship with its FL counterpart (Okutsu 1969, etc.). However, such syntactic manipulation is not reasonable or justifiable except for the word order variations that have different information structures, because there are no complete synonyms, in this case synonymous constructions. Although different NQ constructions may share a large portion of their propositional content among their counterpart NQ constructions, each construction conveys different meanings. I also deal with the constraints on Q-float in this thesis however mainly discuss the constructional variation of NQ constructions with respect to the diversity of their discourse functions with a functionalist perspective (cf.

Downing 1993, 1996; Kim 1995). I first analyze and discuss the basic functions of each of the major NQ constructions, and then discuss inter-constructional relationships among the NQ constructions.

In the following sections of this chapter, first I explain the morphological and semantic characteristics of numeral quantifiers in Japanese. Then I introduce ten NQ constructions in Japanese and briefly explain their syntactic characteristics, and finally I discuss how quantification is represented in those constructions and present cognitive and formal representations of the major NQ constructions.

1.1 Classifier and Numeral Quantifier

A numeral quantifier (NQ) in Japanese consists of a numeral and a classifier that is chosen according to the characteristics of entities denoted by the 'host noun.'[3] Most classifiers in Japanese are not independently used and therefore NQs are considered single words. There are more than 100 classifiers in Japanese, but the frequency of the use of each classifier substantially varies. For example, the top five of the most frequently used classifiers amount to more than 80% of the total usage of classifiers in the text-count data collected by Downing (1996: 55). Table 1.1 shows the frequencies of the five major classifiers in her data.

Table 1.1. Frequency distribution of classifiers included in 500 from sample ordered by overall rank[4]

Rank	Form	Referent Class	#	%
1	*nin*	people	201	40.2
2	*tu*	inanimates	115	23.0
3	*hiki*	animals, insects	32	6.4
4	*hon*	long, slender objects	31	6.2
4	*mai*	flat, thin objects	31	6.2
others			90	18.0
Total			500	100.0

[3] I use the term 'host noun' in all the NQ constructions for the noun that denotes entities that are counted by the co-occurring NQ. This is because the choice of classifier depends on that noun no matter what kind of syntactic relation they have. There are some other terms such as 'antecedent noun' and 'head noun' to represent the same grammatical concept.

[4] Table 1.1 is simplified from Downing's original table. (1996: 55, Table 3.1)

As shown in the table, classifiers are associated with entities that have certain physical and functional characteristics. However, since the main concern in this thesis is not the semantics of classifiers per se, I simply indicate a classifier as 'CL' in the gloss and provide no semantic feature concerning its referent class, unless the semantic characteristics of classifiers are relevant to the discussion.

1.1.1 Native and Chinese classifiers

Classifiers in Japanese can be divided into two subtypes, native and Chinese, and this distinction depends on whether the classifier has a *kun*-(native) reading or an *on*-(Chinese) reading. The classifiers introduced in Table 1.1 are all Chinese classifiers except *tu*. Along with this distinction in classifiers, the numerals in Japanese also have two subclasses, native numerals and Chinese numerals as shown in Table 1.2.[5]

Table 1.2. Two subtypes of numerals

	1	2	3	4	5	6	7	8	9	10
Native	*hito-*	*huta-*	*mi-*	*yo-*	*itu-*	*mu-*	*nana-*[6]	*ya-*	*kokono-*	*too(-)*
Chinese	*iti*	*ni*	*san*	*si/yon*	*go*	*roku*	*siti*	*hati*	*ku/kyuu*	*zyuu*

Native classifiers usually co-occur with native numerals and Chinese classifiers only co-occur with Chinese numerals.

(1.1)

a hito-tu, huta-tu, mit-tu… (general, inanimate entities)
1_J-CL_J 2_J-CL_J 3_J-CL_J

b ip-piki, ni-hiki, sam-biki… (animals/insects)[7]

[5] This distinction is indicated by the subscripts attached to the gloss of numerals, e.g. 1_J for *hito-* '(Japanese numeral) one', and 1_{Ch} for *iti* '(Chinese numeral) one.' Native numerals are only available for one through ten. If the number is larger than ten, Chinese numerals must be chosen. Classifiers are obligatory for numeral quantifiers in Japanese; however when the number is big, it can be used alone without being accompanied by a classifier. The native numerals are bound forms and not used independently except *too* 'ten.'

[6] Interestingly, the native numeral *nana* is interchangeably used as the Chinese numeral *siti* in many cases.
e.g., **nana**-nin (7_J-CL) vs. **siti**-nin (7_{Ch}-CL)
both 'seven people'

[7] Some phonological changes are found in the numerals and classifiers in (1.1). Gemination is found in *mi**tt**u* and *i**pp**iki*, and sequential voicing and nasal assimilation in *sa**mb**iki*. These kinds of phonological changes are not

1_{Ch}-CL_{Ch} 2_{Ch}-CL_{Ch} 3_{Ch}-CL_{Ch}

c hito-tubu, huta-tubu, mi-/san- tubu, yo-/yon- tubu, go-tubu… (small round objects)
1_J-CL_J 2_J-CL_J 3_J- /3_{Ch}- CL_J 4_J- /4_{Ch}- CL_J 5_{Ch}-CL_J

d hito-ri, huta-ri, san-nin… (people)
1_J-CL_J 2_J-CL_J 3_{Ch}-CL_{Ch}

However, no other classifiers, besides the general classifier *tu*, exclusively co-occur with native numerals.[8] Most native classifiers co-occur with both numeral systems; smaller numbers, one through two or three, are represented by native numerals and the numbers beyond them are by Chinese numerals as shown in (1.1c). Furthermore, when counting persons, native numerals and classifiers are used for 'one' and 'two,' while Chinese numerals and classifiers are used for larger numerals than 'two' as shown in (1.1d).[9] Thus native classifiers together with native numerals are restricted in their usage and distribution, while Chinese numerals and classifiers have rather regular and larger distribution patterns. This is due to the diachronic transition in the Japanese classifier system –the native classifier system is being replaced with the Sino classifier system (Shimojo 1997).

1.1.2 Classification of Classifiers

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uncommon in NQs but they are purely phonological phenomena and have nothing to do with semantics. For more details, see Shibatani (1990: 168).

[8] The classifier *-ka* (days) also co-occurs with most native numerals; however, when the numeral is 'one' it switches to the Chinese classifier counterpart *-niti* (days) and requires the Chinese numeral *iti* 'one.' Referring to ordinal numbers for 'days,' the same NQs can be used; however 'the first day (of month)' is represented by the idiosyncratic expression *tuitati* 'the first day of a month.'

iti-niti, huta-ka, mi-kka, yo-kka, itu-ka, mui-ka, nano-ka, yoo-ka, kokono-ka, too-ka
1_{Ch}-CL 2_J-CL 3_J-CL 4_J-CL 5_J-CL 6_J-CL 7_J-CL 8_J-CL 9_J-CL 10_J-CL

The numeral *too* 'ten' can be regarded as an independent morpheme because it does not co-occur with the classifier *tu*. However, it can be also regarded as a bound morpheme because it has to co-occur with the classifier *ka* as in *too-ka* '10 days.'

[9] Some native classifiers are only available with small number numerals and rarely co-occur with large number numerals. For example, the classifier *koe* (for word/voice) co-occurs with native numerals up to two, but it never co-occurs with larger native numerals. Such classifiers are relevant to the Num-N construction because they are relevant to activity (See 2.4 for further discussions).

hito/*iti -koe, (?)huta/*ni -koe, *mi/*san -koe
1_J/ 1_{Ch} -CL 2_J/ 2_{Ch} -CL 3_J/ 3_{Ch} -CL
'one/two/three words/utterances'

Greenberg (1972) analyzes a wide variety of numeral expressions in many different languages and introduces a three-way distinction, i.e., 'unit counters,' 'measures,' and 'non-unit counters.'[10] The first type is used when counting the individuated entities denoted by count nouns, which is a major characteristic of so-called classifier languages. The examples given in (1.1) are of this type. The second type, 'measures,' has their own scales and units for quantification, e.g. minute(s), meter(s). This type has a subtype, 'quasi-unit counters,' which also quantifies entities denoted by mass nouns; however, quasi-unit counters do not represent units that are inherently associated with the entities; instead their association is completely arbitrary. For example, *water* is a mass entity and uncountable and usually quantified by measures, e.g. *iti-rittoru-no mizu* 'one liter of water (1-liter-GEN water)'; however it can also be measured by containers such as cups, e.g. *ni-hai-no mizu* 'two cups of water (2-CL-GEN water).' In this example subparts of a homogeneous mass entity are individuated by *cup(s)* that functions as a unit to quantify those subparts. This process is called 'unitization' (Lucy 1991) or 'individualization' (Bisang 1993). This contrasts with the function of 'true' unit counters, which quantify inherently individuated entities denoted by count nouns. The third type is used to quantify entities represented by mass nouns or plurals, e.g. 'bunch of carrots, flock of sheep,' where the entities quantified are recognized collectively rather than individually.

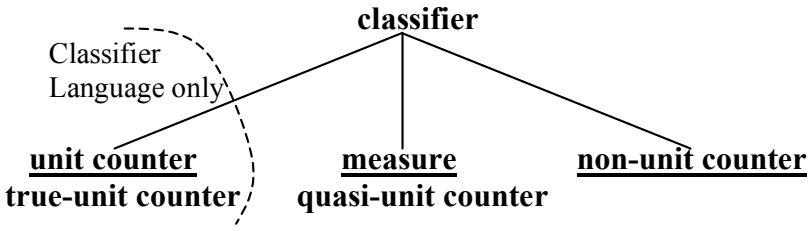

Figure 1.1 Three-way distinction of classifiers in Greenberg

[10] There are some terminological variations on this three-way classification, e.g., 'numeral classification,' 'collection,' and 'mass and measuring' in Seiler (1986).

Only classifier languages have unit counters while most languages have measures and non-unit counters to quantify mass entities. In Japanese all these types are morphosyntactically equivalent; immediately preceded by numerals to form numeral quantifiers, and their differences are purely semantic. Greenberg (1972: 16) claims that unit counters have a special status compared to measures and non-unit counters, and he hypothesizes that unit counters are modeled after measures and/or non-unit counters that are considered virtually universal.[11] Bisang (1993: 9) prefers this two way distinction and call the former type 'classifier' and the latter type 'quantifier' and the latter one has two subclasses, 'collectives' and 'measures' as summarized in Figure 1.2.[12]

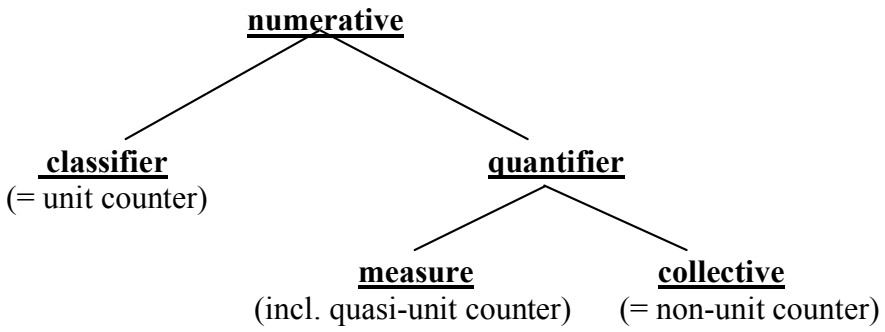

Figure 1.2 Two way distinction of numeratives

In this thesis, I call the first type 'unit classifier,' the second type 'measure classifier' or 'quasi-unit classifier,' and the third type 'collective classifier.' This general classification, however, does not perfectly match the classification of numeratives in Japanese. There is some mismatch

[11] This generalization is a little too strong because there are some languages that lack classifiers. Pirahã, an Amazonian language, has no systematic numeral expressions, and therefore no classifiers exist (Gordon 2004). And a considerable number of Amerind languages do not have measure constructions. In those languages, numerals can directly be attached to mass nouns without any intervening entities (Greenberg 1972: 16).

Greenberg (1972: 17) further argues that there is an implicational universal among the three types of numeratives, i.e. 'the presence of unit counters (classifiers) implies the presence of measure and other non-unit type constructions (quantifiers).' In English there are only quantifier constructions and they are not fully developed as classifiers and the quantifiers remain as the heads of NPs.

[12] T'sou (1976) introduces two features [± exact] and [± entity] and distinguishes numerical expressions into four types. In addition to classifiers, measures, and collectives, his classification has 'kind ([– exact] [– entity])' 'which characterizes mainly abstract nouns, the measure is neither exact nor does it refer to a discrete physical entity,' e.g. *syu* 'kind.'

between the general classification and the distribution patterns of the numeratives in Japanese. Lyons distinguishes two types of classifiers: 'sortal classifier' and 'mensural classifier' (1977: 463-4). Sortal classifiers, which correspond to 'unit classifiers,' quantify individuated entities, while mensural classifiers roughly correspond to 'quantifiers' in Figure 1.2. Croft (2001: 119) further elaborates the mensural classifiers into the following four subclasses.

(1.2)

a	'partitive classifier'	e.g. three slices of cheese
b	'measure classifier'	e.g. three cups of sugar
c	'group classifier'	e.g. three flocks of sheep
d	'arrangement classifier'	e.g. three rows of chairs

The first two are regarded as 'quasi-unit classifiers' and the latter two are 'collective classifiers.' In these English examples, the classifiers, instead of the host nouns, are modified by the plural marker and function as the heads of the noun phrases as well as units to quantify the entities represented by the host nouns. These examples have the following Japanese counterparts.[13] In these Japanese examples, the host nouns of the first two quasi-unit classifier examples, *cheese* and *sugar*, are both heads of the NPs unlike the English counterpart examples. However, when the classifiers are collectives as in (1.3c,d), the classifiers themselves, instead of the host nouns, may stand as heads, which is equivalent to the English counterpart examples.[14]

(1.3)

a san-**kire**-no chiizu
3-CL-GEN cheese
'three slices of cheese'

cf. * mittu-no chiizu-no **kire**
3.CL-GEN cheese-GEN CL(slice)

b san-**bai**-no satoo

cf. * mittu-no satoo-no **hai**

[13] These examples are all in 'pre-nominal NQ' construction to simplify the discussion (see Chapter 2 for further discussions on this construction). Other NQ constructions are also available.

[14] However, if the entities denoted by the host noun are regularly conceptualized as group, the acceptability may be enhanced.

san-guruupu-no hikensya
3-CL-GEN subject(of an experiment)
'three groups of subjects'

The *subjects of an experiment* are often separated into several *groups*. As shown in this example, this kind of expressions is more acceptable when grouping or acting together as a group is easily assumed. However, since such contexts are highly limited, this type is not very common.

	3-CL-GEN sugar 'three spoonfuls of sugar'	3.CL-GEN sugar-GEN CL(cup)
c (?)	san-**retu**-no isu 3-CL-GEN chair 'three rows of chairs'	cf. mittu-no isu-no **retu** 3.CL-GEN chair-GEN row
d ?	san-**gun**-no hituzi 3-CL-GEN sheep 'three flocks of sheep'	cf. mittu-no hituzi-no **mure** 3.CL-GEN sheep-GEN flock

Is this structural similarity between (1.2c,d) and (1.3c,d) just a coincidence? As Greenberg (1975) argues, the sequence of 'numeral-classifier' or 'classifier-numeral' is assumed to have developed from the sequence of 'numeral-noun' or 'noun-numeral.' However, such development does not proceed in languages that have a singular-plural distinction like English and the noun keeps its nominal properties and requires number-marking on it. Japanese collective classifier examples show exactly the same pattern. Interestingly, most collective classifiers in Japanese are free morphemes rather than bound morphemes like other classifiers. Both collective classifiers *taba* 'bundle' and *husa* 'bunch' can be used independently as a noun as shown in (1.4).[15] Therefore these classifiers, which still retain a large portion of their nominal traits, are not considered as a full-fledged classifier. In this sense, most collective classifiers in Japanese have failed to be fully grammaticized. It is not certain why the grammaticization process of numeratives was not completed with them.[16]

(1.4)

a	yon-**taba**-no hurusinbun 4-bundle-GEN old.newspaper 'four bundles of old newspapers'	vs.	hurusinbun-no **taba** old.newspaper-GEN bundle 'a bundle of old newspapers'
b	yon-**husa**-no budoo 4-bunch-GEN grape 'four bunches of grapes'	vs.	budoo-no **husa** grape-GEN bunch 'a bunch of grapes'

[15] There are some more such examples; e.g. *katamari* 'chunk,' *tui* 'pair.' On the contrary, collective classifiers that are bound morphemes are very unusual; e.g., *daasu* 'dozen.'

[16] Most collective classifiers in Japanese have native readings while many of the unit classifiers have Chinese readings. This implies that the development of classifiers might have been heavily influenced by language contact with the old Chinese languages. (Bisang 1996)

Furthermore, when used in the so-called Q-float construction, some collective quantifiers may need to have the same morpheme in the host NP. The expression *guruupu* appears twice in (1.5b); the first one as a nominal head and the second one as a classifier, since the host noun *gukusei* 'student' cannot directly be associated with the NQ *san-guruupu* as in (1.5a).[17]

(1.5)

a */?? gakusei-o san-guruupu tukutta.
student-ACC 3-group made

b gakusei-no **guruupu-o** san-guruupu tukutta.
student-GEN group-ACC 3-group made
'(I) formed three groups of students.'

Kitahara (1996) introduces a two-way distinction of classifiers in Japanese; 'individual classifiers' and 'content classifiers,' and it, interestingly, does not include collective classifiers.[18] The former corresponds to unit classifiers and quasi-unit classifiers and represents the given entities as a sum of individuals while the latter corresponds to measure classifiers excluding quasi-unit counters and represents the given entities as a single collective mass-like entity.[19] A set of entities denoted by the same host noun can be represented either by an individual classifier or a content classifier as in (1.6). The same host noun *mikan* 'tangerine' may occur with either the individual classifier *ko* in (1.6a) or the content classifier *kiro* in (1.6b). In the latter, plural entities are treated as a single mass-like entity.

(1.6)

a zyuk-ko-no mikan
10-CL(round)-GEN tangerine
'ten tangerines'

[17] It is possible to replace the NQ *san-guruupu* with the NQ with the general classifier *mittu* (3.CL) in order to avoid redundancy.

[18] He uses the terms *kotai suuryoosi* 'individual numeral quantifier' and *naiyoo suuryoosi* 'content numeral quantifier' respectively. He further introduces two more types; *hindo suuryoosi* 'frequency NQ', e.g. *2-kai* 'twice', and *kikan suuryoosi* 'duration NQ', e.g. *2-zikan* 'two hours'. These types are classified as measures in Greenberg. (translations mine)

[19] Non-unit classifiers are not included in his discussion; however they seem to belong to individual classifiers since the quantified entities are not necessarily treated as a single chunk of entities. His discussion is also limited to adverbial NQs.

b nizyuk-kiro-no mikan
20-CL(kilogram)-GEN tangerine
'twenty kilograms of tangerines'

A mass entity is also measured by either type of the classifiers as in (1.7). Again, the same mass noun *satoo* 'sugar' can co-occur with the individual classifier *bai* (*hai/pai*) as in (1.7a) or the content classifier *guramu* as in (1.7b). With the help of measuring unit (container), the mass entity *sugar* is unitized.

(1.7)
a san-bai-no satoo
3-CL-GEN sugar
'three cups of sugar'

b zyuu-guramu-no satoo
10-CL-GEN sugar
'ten grams of sugar'

Downing only deals with unit classifiers in her discussions excluding other types of classifiers because the latter do not "denote a natural unit of the referent, whose (usually but not necessarily inherent) characteristics dictate its choice" (1996: 16). I also exclude collective classifiers from the discussions because they may show different lexical and syntactic behaviors as shown in (1.3). However, Japanese does not have a morphosyntactic distinction in numeral quantifier constructions with respect to the mass-count noun distinction; therefore I do not distinguish unit classifiers form quasi-unit classifiers in this thesis and mainly use 'individual classifier' as a cover term for these two types of classifiers and 'content classifier' for other classifiers. Numeral quantifiers with those classifiers are called 'individual numeral quantifier' and 'content numeral quantifier' respectively.

Finally, content NQs often do not have their host nouns and directly modify the verbs when expressing the duration or the number of times of an activity. As Greenberg (1972: 30) points out, the aspectual distinction in such verbal classifiers is parallel to the distinction between

mass and count nouns. In the following examples, the action in (1.8a) is interpreted as a durative and unbounded one while the action in (1.8b) as a punctual and bounded one due to the co-occurring NQ respectively.

(1.8)

a **ni-hun** waratta.
2-CL(minute) laughed
'(Somebody) laughed for two minutes.'

b **ni-kai** waratta.
2-CL(time) laughed
'(Somebody) laughed twice.'

However, they may have corresponding host nouns like quasi-unit classifiers when the scale denoted by the measure classifier itself is the subject of quantification in the activity denoted by the verb phrase. In the following example, the time/duration itself is quantified with respect to the action denoted by the verb phrase and the host noun can co-occur with the measure NQ although it is optional. In both examples, the predicate is of 'increase/decrease.'

(1.9)

a simekiri-no zikan-o iti-zikan enchoosita.
deadline-GEN time-ACC 1-hour extended
'(I) extended the deadline for one hour.'

b tesuto-no kaisuu-o ni-kai huyasita.
test-GEN time-ACC 2-time increased
'(I) gave two more chances of (taking) the test.'

1.2 Numeral Quantifier Constructions

1.2.1 Variations of NQ constructions

There are many constructional variations in the Japanese NQ constructions and the relationship between certain NQ constructions has been discussed in quite a few preceding studies. For example, the following two sentences that have the NQ *san-nin* (three-CL) 'three (people),' are represented by the same English sentence '*three students came*' and may be considered

synonymous. However, they are not randomly chosen; rather their choice is strictly conditioned by the discourse context.

(1.10)
a gakusei-ga **san-nin** kita.
student-NOM 3-CL came

b **san-nin-**no gakusei-ga kita.
3-CL-GEN student-NOM came

'Three students came.'

Kim (1995) classifies the major NQ construction into eight subclasses and an example for each construction is given below.[20] I further distinguish two constructions for his *QN* construction as in (1.12) and include independently case-marked NQs like (1.19) in the discussions; therefore I deal with a total of ten NQ constructions in this thesis.[21]

(1.11) **san-nin**-no gakusei-ga kita. **(Q-*no* N)**
3-CL-GEN student-NOM came
'Three students came.'

(1.12)
a san-nin-yokozuna-no basho **(NQ-N (=QN))**
3-CL-grand.champion-GEN tournament
'A tournament with three grand champions (in sumo wrestling)'

b **san**-yokozuna-ga yabureta. **(Num-N (=QN))**
3-grand.champion-NOM lost
'Three grand champions lost.'

(1.13) kaigi-de gakusei-no **hitori**-ga shitsumon-shita. **(N-*no* Q)**
meeting-at -GEN 1.CL-NOM question-did
'One of the students asked a question at the meeting.'

(1.14) gakusei **san-nin**-ga kita. **(NQ)**
student 3-CL-NOM came
'Three students came.'

(1.15) gakusei-ga kinoo **san-nin** kita. **(NXQ)**
student-NOM yesterday 3-CL came
'Three students came yesterday.'

[20] The righthand terms for classification in (1) through (8) are from Kim (1995) where *Q* stands for (numeral) quantifier and *N* stands for (host) noun.
[21] I do not include in the discussions NQs such as frequency NQs and duration NQs that do not have their corresponding host nouns.

(1.16) **san-nin** uchi-ni gakusei-ga kita. **(QXN)**
3-CL house-to student-NOM came
'Three students came to my house.'

(1.17) **mittu** aru beddo-wa itumo umatteiru. **([..Q..]$_{RelC}$N)**
3.CL exist bed-TOP always occupied
'The three beds are always occupied.'

(1.18) Q: kodomo-wa imasu-ka? **([..N..]$_S$[..Q..]$_S$)**
child-TOP exist.POL-Q
'Do you have any children?'

A: **hutari** imasu.
two.CL exist.POL
'I have two (children).'

(1.19) **hutari**-wa gakkoo-ni konakatta.
two-TOP school-to did.not.come
'The two (they) did not come to school.'

In the first type, the NQ precedes the host noun and the genitive marker *no* connects them to form a noun phrase. I call this type 'Pre-nominal NQ (Pre-N)' construction and discuss this construction in Chapter 2. Although Kim simply calls 'QN' any pre-nominal construction without the genitive marker, as shown in (1.12), there are two subtypes of this type; one is 'NQ-N' as in (1.12a) and the other is 'Num-N' as in (1.12b). In the former the genitive marker is simply dropped from the counterpart Pre-N, while in the latter the classifier is also dropped and the numeral and the host noun are directly attached to each other. Therefore, technically speaking, Num-N does not have an NQ; however, I also discuss this subtype as well as NQ-N in Chapter 2, comparing them with Pre-N, since these three constructions have a constructional similarity in terms of word order, i.e. the numeral comes before the host noun, and there are some interesting functional correlations between them. In that sense all three of them are pre-nominal; however, examples like (1.11) are conventionally called 'pre-nominal' because the other two constructions are far less frequently used. Thus I use the term Pre-N to refer to this construction and only when I need to distinguish it from the other two pre-nominal constructions I call it 'Genitive Pre-N.' In

(1.13), the host noun precedes the NQ. They are connected by the genitive marker. The word order is the opposite of that of Pre-N. I will mention this type in Chapter 4. In (1.14) the host noun and the NQ are adjacent to each other to form a single noun phrase followed by a case marker. I call this type 'Juxtaposed NQ (JX)' construction. As will be shown later, this construction is often called 'appositive' due to its function. However, I use this term because it comes from its constructional characteristic as the other constructions' names in this thesis. I discuss this construction in Chapter 4. In (1.15) the NQ is not in the same syntactic constituent with its host noun. The case-marked host noun precedes the bare NQ. This is so-called '(N)Q-float (FL)' construction. I also use the term 'Q-float' to refer to this phenomenon.[22] Kim classifies this type as QXN, which has a purposefully inserted *X* (any element) between *N* and *Q* in order to make their non-single-constituency explicit. Mihara (1998) also intentionally uses FL examples with such insertion for the same reason. However, as will be shown, the host NP and the floating NQ in FL are not likely to be in the same syntactic constituent even when they are adjacent to each other as long as the case marker on the host noun is explicit, since a case marker creates a strong constituency boundary. Therefore I do not purposefully insert any element between the host NP and the FQ unless their adjacency is concerned. I discuss this construction in Chapter 3. In (1.16), the NQ is fronted and precedes its host NP. I consider this construction is a subtype of FL and discuss it with respect to FL in Chapter 3.[23] In (1.17), an NQ occurs in a relative clause but its host noun appears as the head noun of the relative clause. In (1.18) the host noun does not co-occur with its NQ in the answer. Since the host NP is explicitly expressed in the preceding question, it is omitted in the answer due to its recoverability. These two constructions are also considered relevant to the FL construction and I will discuss the two of

[22] I use the term 'float' to refer to this construction or phenomenon only for the sake of convenience since it is most conventionally used; however I do not assume any syntactic transformation.
[23] Miyagawa (1989) considers this type as a scrambled variation of FL.

them in Chapter 3 as well. In (1.19), like in (1.18), the host noun does not co-occur with its NQ; however, the NQ is independently case-marked like a full noun. This construction type is discussed in Downing (1984, 1996), but not included in Kim's classification. I call this type 'NQ-c' and also deal with it in Chapter 4 because it has interesting relationships with other NQ constructions.

Although not as thoroughly as Kim's classification, Martin (1975) and Downing (1996) also present their classification for the variations of NQ constructions and characterize their functions, which are summarized in Table 1.2. Different terms are given to each construction but I use terms based on constructional characteristics.

Table 1.2: Classification of NQ constructions in Japanese

	Types	**Martin (1975)**	**Kim (1995)**	**Downing (1996)**		**This thesis**
1	[Q-*no* N]	Basic	NP-internal, pre-nominal, attributive	Pre-Nominal	1	Pre-nominal (Pre-N)
2	[QN]	NA	NP-internal, pre-nominal, non-attributive	NA	2a	Num-N
					2b	NQ-N
3	[N-*no* Q]	Inverted apposition	NP-internal, post-nominal, Attributive	Summative Appositive	3	Post-nominal NQ (Post-N)
4	[NQ]	Appositional ellipsis	NP-internal, post-nominal, non-attributive	Appositive	4	Juxtaposed NQ (JX)
		Reduced N-*no* Q	NA	NA		NA
5	[N] X [Q]	Adverbialization	Locally external, post-nominal	Q-float (Adverbial)	5	Floating NQ (FL)
6	[Q] X [N]	Pre-posed adverbial	Locally external, pre-nominal	NA	6	Fronted NQ (F-NQ)
7	$[..Q..]_{RelC}$ N	NA	Endogenously NP-external	NA	7	Relativised FL (Rel-Q)
8	[..N..]s [..Q..]s	NA	S-external, post-sentential	NA	8	Independent NQ (I-NQ)
9	Q-case	NA	Pronominal	Pronominal	9	Independently case-marked NQ (NQ-c)

In this thesis, I deal with three major types, i.e. Pre-N, JX, and FL, and seven subtypes and discuss how they are related to each other. I call an NP consisting of a host noun and an NQ/numeral 'measure phrase (MP)' in this thesis. However As shown in (1.1b), the host noun and its NQ in the FL construction are not constituents of the same syntactic unit. I call the unit of the host NP and its NQ in that construction 'NP-NQ pair' instead of 'MP'.

1.2.2 Distribution of NQ constructions in text data

The above constructions are not evenly used in actual texts. Their distributions in text data are influenced by their discourse functions. In order to determine this influence, I counted the number of examples in newspaper articles and novels. The data were collected from two different on-line databases: one is of newspaper articles and the other is of Japanese literature.[24] The sample distribution data are summarized in Table 1.3.

Table 1.3. Distribution of NQ constructions in different genres

	Saga		**Aozora**		**Spoken**	**MJ**	**OJ**
	3tu	***3nin***	***3tu***	***3nin***	**data**		
1	**40**	**10**	**27**	**28**	**4** (9)	**45.8**	**22.0**
2	—	—	—	—	3 (7)	13.5	42.8
3	10	8	4	17	1 (2)	7.8	0
4	**3**	**42**	**0**	**10**	**6** (14)	**6.4**	**6.7**
5	**5**	**1**	**36**	**8**	**29** (67)	**21.4**	**27**
6	1	0	8	3	—	1.5	0.5
7	2	0	2	0	—	1.5	0
8	2	2	4	4	—	2.1	1.0
9	13	29	12	24	—	—	—
Others[25]	24	8	7	6	—	—	—
Total	100	100	100	100	43 (100%)	100(%)	100(%)

In each database I searched the words *mi-ttu* 'three general objects (3-CL)' and *san-nin* 'three people (3-CL)' and collected 100 samples for each NQ in each database. Therefore, in my data,

[24] The on-line newspaper article database I used for this study is offered by Saga Shimbun Newspaper Company (http://www.saga-s.co.jp). The on-line Japanese literature database is offered by Aozora Bunko (http://www.aozora.gr.jp).

[25] 'Others' consists of the examples in which NQs function as nominal predicates or more than one NQ construction occurs in a clause. I will discuss this type in Chapter 5.

there are no examples of Type 2, which lacks a classifier. The reasons I chose these two classifiers *-tu* and *-nin* for this sampling are twofold: first, their frequencies are much higher than other classifiers (Downing 1996:54-7).[26] Second, there can be some differences in the distribution between the semantic characteristics, human and inanimate. The reason I chose the numeral 'three' for this sampling is arbitrary, but I intentionally avoided the numerals 'one' and 'two' that are often used in idiomatic expressions. I selected 100 examples each from the newspaper and literature databases. If there is more than one example in the same article or novel/essay, I just picked the first example. I included samples from spoken texts that were transcribed from the conversations in TV talk show programs.[27] Since the data is limited, I counted all NQ examples no matter what classifier was involved. The righthand entries MJ and OJ in the table are taken from Kim (1995: 210). The former stands for Modern Japanese and the latter stands for Old Japanese. These figures show the percentage of the frequency of use of the NQ constructions. Compared to Downing and Kim's statistics, the overall distribution patterns in my data show some differences since their data include NQ-N/Num-N and my data were taken not only from novels but also from newspaper articles. The distribution patterns for each major construction will also be discussed in the following chapters.

1.3 Discussion

Different NQ constructions have different discourse functions and different distribution patterns. Is there any rationale behind the association between the form and function, or is it just random and arbitrary? I deal with the three major NQ constructions as well as their relevant NQ constructions and analyze the basic functions of the major NQ constructions and relevant issues to each NQ construction. I further discuss the inter-constructional relationships among the NQ

[26] In Downing's database, *-nin* outnumbers other classifiers in both oral and written texts (overall 40%, oral 35% and written 45%), followed by *-tu* (overall 23%: oral 25% and written 21%).
[27] The data were taken from four episodes of the TV talk show, *Tetuko-no Heya* 'Tetuko's Room.'

constructions. I especially focus on the relationship between forms and functions and argue that the word order and the constituency of the host noun (N) and the NQ reflect the basic distinctions in function among the NQ constructions. The NQ in the word order of N-NQ has a predicative function while that in NQ-N has a referential function. The predication function is further related to discourse focus and pragmatic assertion, while the reference function to specification/identification of an anaphoric expression. The difference in constituency reflects the different statuses of the instantiation of given entities to be counted/measured and it is related to the different cognitive stages of quantification. I discuss what kind of cognitive processes are involved in the representation of quantitative information, how additional meanings besides the basic quantitative information are created or implied, and how they are represented in linguistic forms. I use Langacker's framework to schematically show how the different functions and properties are represented. I further discuss how my analysis can be represented in a formal framework in order to summarize the discussions. Here I use the Role and Reference Grammar (RRG) framework because it takes pragmatic factors into its representation and is suitable to integrate functional and cognitive factors into formal representations.

1.4 Summary

Quantitative information processed through counting numbers or measuring amount seems to be easy to handle because such activities are so common in our everyday life. However, many small children have some difficulty in arithmetic and even some adults are not good at handling numbers. There is even a language like Pirahã, which does not have numerals let alone the concept of counting (Gordon 2004, Everett 2005). Thus, encoding of quantitative information into language is not a simple task and it actually can be segmented into some different aspects or a sequence of processes. If the morphology and syntax of a language do not encode such

differences, there can be ambiguities in interpretation, though such ambiguities are often removed by the context. Japanese has rich constructional variations for quantitative expressions and this variety actually reduces the ambiguity problems to some extent, if not completely.

In the following chapters, first, I describe the functions of the three major NQ constructions as well as other constructionally similar NQ constructions in Chapters 2-4 respectively. Then, I discuss the relationship between the form and function in those NQ constructions looking at the inter-constructional relationship among them in Chapter 5 and apply the RRG framework to formally present my functional analysis in Chapter 6.

Chapter 2 Pre-Nominal NQ Construction (Pre-N)

In this chapter I analyze the functions of the Pre-Nominal NQ construction (Pre-N) and discuss the relationship between the construction and those functions. I also analyze two other NQ constructions structurally similar to Pre-N and discuss their functional similarities to and differences from Pre-N.

2.1. Basic structure of Pre-N

The basic structure of Pre-N is 'NQ-GEN N' as shown in (2.1). The host noun *gaukesee* 'student' is preceded by the NQ *san-nin* that is followed by the genitive marker *no*.

(2.1) **san-nin-no** gakusei-ga kita.
3-CL-GEN student-NOM came
'Three students came.'

This kind of genitive construction is not exclusive to this NQ construction; rather it is found in a wide variety of examples in Japanese. The genitive construction in Japanese has several different meanings but Pre-N is considered to be most relevant to the attributive meaning like in (2.2).[28]

(2.2) megane-***no*** gakusei
eye.glass-GEN student
'a student with glasses'

Based on this commonality in structure, I assume that Pre-N is construed as a subtype of the genitive construction and the NQ is considered to represent the quantitative attribute of plural

[28] 'Attributiveness' is defined as an inherent property of a given entity. As will be discussed in this chapter, the quantitative information of plural entities is recognized as their quantitative attribute only when those entities are recognized as an 'established already-existing set.'

The genitive construction in Japanese also has other meanings like below.

(1) Possessive: e.g. Taroo-***no*** kodomo 'Taro's child'
-GEN child

(2) Temporal modification: e.g. kyoo-***no*** tenki 'today's weather'
today-GEN weather

(3) Argument pre-nominal modification: e.g. Taroo-***no*** zisyoku 'Taro's resignation'
-GEN resignation

(4) Adjunct pre-nominal modification: e.g. Hanako-to-***no*** kekkon 'marriage with Hanako'
-with-GEN marriage

entities denoted by the host noun. Downing (1993, 1996) and Kim (1995) also point out that one of the basic characteristics of Pre-N is 'attributive. '

When the host noun in a Pre-N MP is preceded by more than one modifier, the order of the modifying elements varies according to their semantic characteristics. Adjectives occur either before or after the pre-nominal NQ as in (2.3a,b).

(2.3)

a ookina **hutatu**-no me
big two.CL-GEN eye

b **hutatu**-no ookina me
Both: 'two big eyes'

There seems to be no significant difference between these two word order variations.[29] However, there seems to be a certain preference in word order in examples like (2.4). In (2.4a), the Pre-NQ is preceded by the genitive modifier, while in (2.4b) it occurs initially. These word orders seem to be preferred to their reversed word order variations respectively, although these non-NQ modifiers are both relatively long.

(2.4)

a **epuron-sugata-no** hutari-no zyosei-ni atta.
apron-outlook-GEN 2.CL-GEN woman-DAT met
'(I) met two women in apron.'

b hutari-no **arutuhaimaashoo-no** roozin-ni atta.
2.CL-GEN Alzheimer's.disease-GEN old.person-DAT met
'(I) met two old people with Alzheimer's disease.'

Wearing an apron is a temporary state of the *women* and considered less likely to be associated with the *women* as their 'constant' attribute. On the other hand, *being with Alzheimer's disease* is

[29] I counted the number of occurrences of these phrases in the Internet using the search engine Google. The number of occurrences of (2.3a) and (2.3b) are 63 and 23 respectively. This shows that the default order is like in (2.3a). This result implies that the NQ attribute is considered more constant than the adjectival attribute, which sounds reasonable because the number of *eyes* is fixed but the size of *eyes* are not necessarily *big* for everyone. However, when the host noun is replaced by *te* 'hand,' the result will be opposite and the numbers of the occurrences of 'big-two-hand' and 'two-big-hand' in the Internet are five and nine respectively. Thus it is difficult to decide which word order is default in these examples.

a stable/constant condition of these *old people* and considered as their 'constant' attribute compared to *being a party of two*. Thus the word order reflects the degree of association of the attribute to the entity denoted by the head noun: if the attribute is temporary, it appears further away from the head noun while if it is constant, it appears closer to the head noun.[30] However, this is a relative, not absolute, condition and the word order may not always follow this pattern when other factors such as the relative length of modifiers are involved. In (2.5a), the modifier *chuugokugo-no* 'of Chinese' directly precedes the host noun, which is much more preferred to (2.5b) where the word order of the pre-nominal modifiers is reversed. This is because the attribute of 'of the Chinese language' is considered more constant than 'being a party of three.'

(2.5)

a san-nin-no **chuugokugo-no** hooteituuyaku-ga manekareta.
3-CL-GEN Chinese-GEN court.interpreter-NOM invited

b ?? **chuugokugo-no** san-nin-no hooteituuyaku-ga manekareta.
'Three court interpreters of Chinese were invited.'

However, when the pre-nominal modifier is replaced by a longer one, the reversed order in which the long modifier appears initially is much more preferred as in (2.6).

(2.6)

a ?? san-nin-no **kankokugo-to chuugokugo-no** hooteituuyaku-ga manekareta.
3-CL-GEN Korean-and Chinese-GEN court.interpreter-NOM invited

b **kankokugo-to chuugokugo-no** san-nin-no hooteituuyaku-ga manekareta.
'A total of three court interpreters of Korean and Chinese were invited.'

---

[30] I also tried to count the number of the occurrences of these complex Pre-N MPs in a Google search. However, since there was no exact matching for both phrases, I redid the search with the following expressions.
(2.4a)' epuron-sugata-no hutari-no (**any host noun**)
(2.4b)' hutari-no **ziheisyoo/daunsyoo/ketuyuubyoo** -no (any host noun)
autism/Down syndrome/hemophilia -GEN
There were four examples for (2.4a)' but none in the reversed word order. As for (2.4b)', there were 13 examples as well as three with the reversed word order. These data support the general tendency of the word order of modifiers based on the degree of association of the attribute.

When a demonstrative or a relative clause modifies a Pre-N MP, it is usually placed at the leftmost position in the MP.[31]

(2.7)

a **sono**-san-nin-no gakusei-ga kita.
that-3-CL-GEN student-NOM came
'Those three students came.'

b **kinoo atta** san-nin-no gakusei-ga kita.
yesterday met 3-CL-GEN student-NOM came
'The three students I met yesterday came.'

It is possible to omit the host noun as in (2.8). However, this omission is allowed only when the omitted noun is recoverable in the given context.[32]

(2.8) san-mai-**no**-o katta.
3-CL-GEN-ACC bought
'I bought a three-sheet one.'

2.2 Distribution of Pre-N

The distribution of Pre-N in terms of its possible grammatical roles is very wide and any grammatical role is compatible with this construction.

(2.9)

a san-nin-no gakusei-**ga** kita. (Nominative NP)
3-CL-GEN student-NOM came
'Three students came.'

b san-nin-no gakusei-**o** maneita. (Accusative NP)
3-CL-GEN -ACC invited
'(I) invited three students.'

---

[31] It is also possible to reverse the order of the modifiers in (2.7a,b); however, the sentence is more natural with a pause, and the left-dislocated pre-nominal NQ represents supplementary information, which is not directly relevant to reference. The function of NQs in these examples is equivalent to that of non-restrictive relative clauses.

(1) san-nin-no, **sono**-gakusei-ga kita.
3-CL-GEN that-student-NOM came
Those students, who are a group of three, came.'

(2) san-nin-no, [**kinoo atta**] gakusei-ga kita
3-CL-GEN yesterday met student-NOM came
The students that we met yesterday, who are a group of three, came.'

Otherwise, as discussed in Kuno (1978b: 83), these examples are unacceptable.

[32] This omission is available only when the Pre-N MP has a collective reading and is interpreted as a 'type' (see §2.3). If the genitive marker is omitted from (2.8), it becomes quite awkward (?? *san-mai-o katta*). This is another NQ construction, the independently case-marked (NQ-c) construction. I will discuss this construction in Chapter 4.

c san-nin-no gakusei-**ni** okane-o ageta. (Dative NP)
3-CL-GEN -DAT money-ACC gave
'(I) gave money to three students.'

d mittsu-no kooen-**e** itta. (Allative NP)
3.CL-GEN park-to went
'(I) went to three parks.'

e san-nin-no gakusei-**to** hanasita. (Comitative NP)
3-CL-GEN -with talked
'(I) talked with three students.'

f san-nin-no gakusei-**kara** okane-o atumeta. (Ablative NP)
3-CL-GEN -from money-ACC collected
'(I) collected money from three students.'

g san-mai-no kami-**de** hako-o tukutta. (Instrument NP)
3-CL-GEN paper-by box-ACC made
'(I) made a box with three sheets of paper.'

h san-nin-no gakusei-**no** ie-e itta. (Genitive NP)
3-CL-GEN student-GEN house-to went
'(I) went to three students' houses.'

i mittu-no gakkoo-**de** osieta. (Locative NP)
3.CL-GEN school-at taught
'(I) taught at three schools.'

These examples show that there is no restriction on the distribution of Pre-N in terms of the grammatical role of the MP. The distribution pattern of Pre-N examples with respect to the grammatical role of the Pre-N MP is shown in Table 2.1.[33]

Table 2.1. Distribution of Pre-N examples with respect to the case of Pre-N MP

	nom. (*-ga*)	**acc. (*-o*)**	**dat. (*-ni*)**	**com. (*-to*)**	**abl. (*-kara*)**	**inst. (*-de*)**	**gen. (*-no*)**	**loc. (*-de*)**	**others**	**total**
saga 3tu	6	9	6	2	1	4	5	2	4	39
saga 3nin	2	3	0	1	0	0	1	0	3	10
aozora 3tu	10	7	3	0	2	0	2	0	3	27
aozora 3nin	12	4	1	4	1	0	1	0	5	28
Total	30	23	10	7	4	4	9	2	15	104

[33] 'Others' consist of examples marked by discourse markers such as *wa* and *mo*. Sentence final forms and titles are also included here.

In the text count data, Pre-N is frequently used in written texts, both newspaper articles and novels (cf. Table 1.3).[34]

2.3 Functional characteristics of Pre-N

In this section, I analyze the functions of Pre-N and discuss how those functional characteristics are related to the constructional characteristics of Pre-N. There are two major readings for Pre-N; one is the 'single (collective)' reading and the other is the 'specific' reading. In the preceding literature most of the studies do not mention this distinction and mainly discuss one or the other of them. Studies with purely syntactic and semantic perspectives (Okutsu 1969, Kato 1998, Gunji and Hasida 1998) mainly discuss the former reading while those with a functional and pragmatic perspective (Downing 1993, Kim 1995) mainly discuss the latter reading. The main concern of the former camp is the constraints on Q-float and the constraints on Pre-N are merely discussed for comparison. On the contrary, the reason why functionalists mainly deal with the latter reading is that this reading is simply dominant in the actual usage of Pre-N. As will be shown in the next section, the collective reading of Pre-N is strictly limited to certain contexts while the specific reading is relatively less restricted.[35] In the following sections I deal with both readings and discuss how they are similar to and different from each other and why they share the same constructional template.

2.3.1 Single (Collective) reading

As sketched in 2.1, Pre-N is considered as a sub-type of the general genitive construction and the main function of a pre-nominal NQ is describing the quantitative attribute. When content NQs

[34] However the frequency of Pre-N in my data is not as high as that in the modern Japanese data by Kim (1995: 210). It is only 26.3% in my data, while it is 45.8% in Kim's data. In Kim's classification, 'Independent NQ (type 9)' and 'others' are not included. This can be one of the major reasons for the higher frequency of Pre-N in his data.

[35] There are only three Pre-N examples with a collective reading out of the 104 Pre-N examples in my data. There are none in the newspaper samples.

modify singular host nouns, they are readily interpreted as constant physical attributes of the entities denoted by the host nouns like other noun modifiers.

(2.10)

a **san-meetoru**-no hasigo (-o katta.)
3-meter-GEN ladder (-ACC bought)
'(I bought) a three-meter ladder.'

b **nagai** hasigo (-o katta.)
long ladder
'(I bought) a long ladder.'

In (2.10a), the NQ simply represents a qualitative attribute of the denotation of the modified host noun as the adjectival modifier in (2.10b) does. On the contrary, when the NQ is an individual NQ and modifies plural entities denoted by the host noun, the sentence may be unacceptable as in (2.11a). When the host noun is modified by the quantificational expressions, e.g. *ooku-no* 'many,' the sentence can be even more awkward as in (2.11b).[36]

(2.11)

a ? **san-ko**-no kesigomu (-o katta.)
3-CL-GEN eraser (-ACC bought)
'(I bought) three erasers.'

b ?? **ooku-no** kesigomu (-o katta.)
many-GEN
'(I bought) many erasers.'

These examples show that quantitative attributes are more restricted than qualitative attributes in terms of pre-nominal modification. It is reasonable for an individual entity to have certain

[36] However, there are some acceptable examples with these quantitative modifiers.

(1)a maikai ooku/takusan -no gesuto-ga paatyii-ni kita.
every.time many/many -GEN guest-NOM party-to visited
'A lot of guests came to the party every time.'

b ? kinoo ooku/takusan -no gesuto-ga paatyii-ni kita.
yesterday
'A lot of guests came to the party yesterday.'

(1a) is perfectly fine, while (1b) is slightly awkward and less acceptable than (1a). I will discuss in 2.3.2 why there is a difference in acceptability between these sentences.

The counterpart adjectival form *ooi* 'many' and its antonym *sukunai* 'a few/a little' are hardly used as a quantitative modifier.

(2) * ooi / sukunai kesigomu
many/ a.few eraser

qualitative attributes such as size, shape, and so on. Such qualitative information is readily regarded as an inherent attribute of the given entity. On the contrary, when an NQ modifies a host noun that denotes plural entities, the quantitative information is not readily regarded as their inherent attribute. Most individual entities separately exist from others rather than physically bundled or bunched together with others in the natural environment. Therefore some kind of artificial manipulation or contextual support needs to be presupposed for those plural entities to be collectively recognized as a single set (Kato 1997). If the plural entities are not recognized as an established set, the denotation of the pre-nominal NQ modifier is not likely to be interpreted as a quantitative attribute, and the sentence is eventually not acceptable.

The following two sentences in (2.12) have exactly the same syntactic structure and the same classifiers; however, (2.12b) sounds quite awkward.

(2.12)

a Taroo-wa san-mai-no **e**-o katta.
-TOP 3-CL-GEN painting-ACC bought
'Taro bought three paintings.'

b ? Taroo-wa san-mai-no **gayoosi**-o katta.[37]
drawing.paper-ACC
'Taro bought three sheets of drawing paper.'

How can we account for the awkwardness of (2.12b)? This difference in acceptability judgment must be sought in the different semantic properties of the two nouns, *e* 'painting' and *gayoosi* 'drawing paper' including our encyclopedic knowledge about the given entities as well as the discourse context and the functional characteristics of the Pre-N. Consider another pair of examples. (2.13a) is better than their counterpart (2.13b).

(2.13)

[37] When asked to judge sentences like (2.12b), most native Japanese speakers would mention that the following FL counterpart is much better. I will discuss why it is so in Chapter 3.

Taroo-wa gayoosi-o san-mai katta. (FL)
-TOP drawing.paper-ACC 3-CL bought
'Taro bought three pieces of drawing paper.'

a san-satu-no **hon**-o katta
3-CL-GEN book-ACC bought
'(I) bought three books.'

b ? san-ko-no **ringo**-o katta
3-CL-GEN apple-ACC
'(I) bought three apples.'

In the acceptable (a) examples, each of the *three* entities is likely to be individually different from the others in the same group, e.g., each *book* is different from the other two *books*.[38] On the other hand, in the unacceptable (b) examples, each of the *three* entities is not likely to be identifiable from one another in their own groups since these objects, *drawing paper* and *apples*, are generally not individually distinguishable. Thus the internal 'distinguishability' of the entities denoted by the host noun is a crucial factor for the acceptability judgment of Pre-N examples.[39] Generally when the host noun in a Pre-N MP denotes a uniquely distinguishable entity, the sentence is more likely to be acceptable.

As discussed in Chapter 1, an NQ modifying a single entity is a content NQ, while an NQ modifying plural entities is an individual NQ. Therefore, the NQ in (2.12b) is supposed to be an individual NQ. However when a collective reading is assigned to the Pre-N MP, the plural entities are recognized as a collective set and what the pre-nominal NQ describes is the size of the set. Therefore the individual NQ functions like a content NQ in examples like (2.12b).[40]

[38] If the Pre-N MP refers to 'three copies of a book', the MP is unacceptable as the (b) examples.

[39] Although the term *distinguishability* and the term *identifiability* are similar, I consider that the former concerns the distinctions at the cognitive level (physical property), while the latter concerns the distinctions at the pragmatic level (referentiality). As shown in (2.12), the identifiability of the entities denoted by the Pre-N MP is derived from the distinguishability of those entities. With this respect, I mainly use the former one rather than the latter one in this thesis.

[40] Hence it is possible to combine Pre-N and FL as follows. The number of sets of *three apples* is counted by another NQ in this example. On the contrary, acceptable ones are unlikely to co-occur with another NQ as in (2). See Chapter 3 for further discussions on the FL construction.

(1) [san-ko-no ringo]-o **hutatu** katta
3-CL-GEN apple-ACC 2.CL bought
'(I) bought two sets of three apples.'

(2) ? [san-mai-no e]-o **huta-kumi** katta
3-CL-GEN painting-ACC 2-CL(set)

(2.12b) is acceptable only when it is interpreted as '(I bought) **a set of** three sheets of drawing paper.' The crucial point is whether the set is recognized as an established one or not, rather than whether the given set is definite or not. The interpretation of the Pre-N MP does not have to be '**the** set of drawing paper.' This judgment on the plausibility of 'collectiveness' depends on whether such a context or 'frame'[41] is likely or not, and is often conditioned by some contextual support or our extra-linguistic world knowledge (Kato 1997: 56). When the two sentences in (2.14) are compared, (2.14b) is more likely to be assigned a collective reading than (2.14a) and therefore (2.14b) is more readily acceptable than (2.14a). This is based on our knowledge that the unit for selling *drawing paper* is more likely to be in *hundreds* rather than in *threes*. Thanks to this knowledge, the collectiveness of the plural entities in (2.14b) is appropriately evoked and a collective reading is available to the MP.

(2.14)

a ? Taroo-wa **san-mai**-no gayooshi-o katta. (=2.12b)
drawing.paper-ACC
'Taro bought three sheets of drawing paper.'
(→ **unlikely**: 'Taro bought **a set of** three sheets of drawing paper.')

b Taro-wa **hyaku-mai**-no gayooshi-o katta.
hundred-
'Taro bought 100 sheets of drawing paper.'
(→ **likely**: 'Taro bought **a set of** 100 sheets of drawing paper.')

Thus, quantitative information can be recognized as a legitimate attribute of the plural entities only when the plural entities are recognized as an established set.

'(I) bought two sets of three paintings.'

[41] This is relevant to 'semantic frame' introduced by Fillmore (1982:111). He defines the concept of 'frame' as follows:

> By the term "frame" I have in mind any system of concepts related in such a way that to understand any of them you have to understand the whole structure in which it fits; when one of the things in such a structure is introduced into a text, or into a conversation, all of the other are automatically made available.

This kind of framework often concerns the activation or accessibility of a referent and can account for how 'inactive' referents can become 'semi-active' or 'accessible' when they 'belong to the set of expectations associated with schema' (Chafe, 1987). However, the accessibility of Pre-N as a referent is not directly relevant to the above examples. The frames or schemas found in these examples are rather relevant to our world knowledge and the set eligibility of the Pre-N MP can be assigned through such frames or schemas.

Mass host nouns also have a similar functional restriction. When a bare content NQ modifies a mass host noun, the sentence may be as awkward as (2.8b).

(2.15) Taroo-wa 350-cc-no koora / ?koohii -o nonda.
-GEN cola coffee -ACC drank
'Taro drank 350cc of cola/?coffee.'
(→ **likely**: 'Taro drank **a 350cc-can of** cola.')
(→ **unlikely**: Taro drank **a 350cc-can of** coffee.')

This difference in acceptability is based on our knowledge, namely that one of the regular sizes of canned *cola* is, at least in Japan, *350cc*. On the contrary, such a size of container is not common for *coffee* and the sentence sounds slightly awkward. Mass nouns denote entities whose boundaries are unspecified; therefore their quantities are also unspecified. When an NQ modifies a mass noun, the denotation of the mass noun needs to be considered as an established chunk so that the NQ is interpreted as the quantitative attribute of a bounded entity. Thus the amount denoted by the NQ modifying a mass noun would not be unconditionally construed as a quantitative attribute. Only when the mass entity is considered as a single established chunk, the information denoted by the NQ is interpreted as its quantitative attribute, which is equivalent to the qualitative attribute of a single individual entity.

Thus regardless of the mass-count distinction, a pre-nominal NQ needs to be interpreted as the quantitative attribute of a single set or a bounded mass. I use the term 'single' reading instead of 'collective' reading because this reading is also applicable to bounded mass entities as well.

2.3.2 More examples of single reading

Due to the strong constraint on the single reading of Pre-N, this reading is not very frequent. However, this reading is relatively freely used in some special contexts in which certain extralinguistic knowledge helps the quantitative information denoted by the NQ in a Pre-N MP

to be regarded as attributive. First, consider the following example, which is a general description of a *dam*'s function.

(2.16) kono-damu-wa maihun **500-ton-no** mizu-o hooshutusuru.
this-dam-TOP every.minute -ton-GEN water-ACC eject
'This dam ejects 500 tons of water every minute.'

Mizu 'water' is a mass noun and *ton* is a content classifier. However the Pre-N MP *500 tons of water* is properly interpreted as a functional attribute of the *dam* in this context since we know that 'a dam regularly ejects water' and that 'the pace of ejection is stable.' This shared knowledge helps us have a set attributive reading for the Pre-N MP in (2.16). Note that what is actually known is 'the dam emits X tons of water per minute' and 'the value X is stable under regular conditions.' Based on these pieces of knowledge, we can assume the given quantity is readily interpreted as a functional attribute of the dam, no matter what value it actually takes.

The same is true for statements of habitual activities. Compared to non-habitual activities, a Pre-N example that has a habitual statement sounds more natural as in (2.17).

(2.17)
a Taroo-wa maiasa **ni-hai-no** ocha-o nomu.
-TOP every.morning 2-CL-GEN tea-ACC drink
'Taro drinks two cups of tea every morning.'

b ? Taroo-wa kesa **ni-hai-no** ocha-o nonda.
-TOP this.morning 2-CL-GEN tea-ACC drank
'Taro drank two cups of tea this morning.'

Since the activity described in (2.17a) is habitual, the number of *cups of tea* that he *drinks every morning* is fixed and readily interpreted as a *Taro*'s behavioral attribute. On the contrary in (2.17b), an attributive reading is unlikely since there is no such contextual support. Again, any amount is fine, as long as that value is interpreted as a regular quantitative attribute. The example (1a) in f.n.9 is also of this type.

Pre-N is often found in statistical statements, too.

(2.18) nihonzin-no dansee-wa itiniti-ni yaku **10-pon-no** tabako-o suu.
Japanese-GEN male-TOP one.day-in about 10-CL-GEN cigarette-ACC inhale
'A Japanese male smokes about 10 cigarettes per day.'

The amount of *cigarette-smoking* is readily interpreted as a behavioral attribute of a typical *Japanese male*. The actual figures in statistical statements may change from time to time. However, we can interpret the figure as a behavioral attribute of the given subject at a specific time because we assume that those figures are accurately calculated based on the statistical data collected for that survey.

Pre-N is also available in recipes. The amount of an ingredient in a recipe is regarded as fixed and pre-determined to cook the dish. Therefore, it can be taken as a set attribute in that cooking procedure. Note that this is not bottled *water* that contains 800cc. Thanks to the recipe context, such reading is not necessary to fulfill the attributiveness requirement of Pre-N.

(2.19) nabe-ni **800cc-no** mizu-o irete…
pot-DAT -GEN water-ACC put.in
'Pour 800cc of water in the pot, and …'

If the numeral in a certain context is well known or highly conventionalized, it is likely to be represented by Pre-N as in (2.20).

(2.20) Motonari-wa **san-bon-no** ya-o tsukatte kodomotachi-o satoshita.
-TOP 3-CL-GEN arrow-ACC using children-ACC persuaded
'*Motonari* persuaded his children using three arrows.'

Motonari is such a famous historical figure that most people are expected to be familiar with this episode in which he used *three arrows* to show how important it was for his *three sons* to be united against outside enemies. We do not know exactly which *arrows* were referred to, but we do know that the number of *arrows* in this episode has to be *three*. Thus the *three arrows* are interpreted as an attribute of this anecdote.

Thus collectiveness of the entities denoted by a Pre-N MP, which is decided by the overall contextual frame, not just by the MP itself, is a crucial factor for the acceptability judgment of Pre-N examples.

2.3.3 Specific reading

In the preceding sections we saw that examples like (2.12b) are unacceptable when a single reading is unlikely. However, this does not mean that a single reading is a necessary condition for the acceptability of Pre-N. In this section, I examine another important factor for the acceptability judgment of Pre-N, i.e. 'specificity'.[42]

As shown in (2.8) and (2.9), when there is no explicit modifier on the host NP in Pre-N, 'distinguishable' host nouns are readily acceptable while 'non-distinguishable' host nouns are not. Then, why is Pre-N with a distinguishable host noun more acceptable even though they do not have any overt contextual support? Downing (1993) claims that 'specificity' is a crucial condition for the acceptability of Pre-N examples and introduces the following three subclasses for Pre-N in terms of the specificity (individual identity) of the referents denoted by the Pre-N MP.

(2.21)

a san-nin-no tomodati-o matte-imasu. (specific individuals)
3-CL-GEN friend-ACC wait-PRG
'(I) am waiting for three friends.' (ibid: 78 (12a))[43]

b ? san-nin-no hisho-o sagasite-imasu. (non-specific individuals)
3-CL-GEN secretary-ACC be.searching
'(I) am looking for three secretaries (e.g. to hire).' (ibid: 78 (13a))
(acceptable if '(I) am looking for particular three secretaries.')

c ? i-ppon-no tabako-o suttee-mimasyoo. (individual identity irrelevant)
1-CL-GEN tobacco-ACC smok-let's.try
'Let's have a cigarette.' (ibid: 79 (14a))

[42] I simply follow the Lambrecht's definition of 'specificity' (1994: 81):
An NP is specific if its 'referent is identifiable to the speaker but not to the addressee.'

[43] These examples are all from Downing (1993) and the judgments are hers. When examples taken from other authors have indications of acceptability(/grammaticality) judgment, the judgments are basically theirs.

The denotation of the host noun in (2.21a), which is distinguishable entities, is interpreted as 'specific individuals.' The context that requires a specific reading fits this interpretation and the sentence is acceptable. When one *waits for* somebody the *waiter* knows who he/she is *waiting for* and in that sense that person being *waited for* must be specific. In (2.21b), *secretaries* are interpreted as 'non-specific individuals' and the sentence is not acceptable. As the alternative interpretation of (2.21b) shows, the sentence is acceptable only if the denotation of the host noun is interpreted as specific individuals. However, since the likelihood of such a discourse context for (2.21b) is less likely than the counterpart non-specific context, the sentence is judged awkward if not unacceptable.[44] The host noun *tabako* 'tobacco' in (2.21c) is considered 'individual identity irrelevant' and the sentence is unacceptable. Based on these differences found in (2.21), Downing argues that the Pre-N construction requires a 'specific' reading. Therefore when specific reading is not appropriate in a given context the sentence becomes unacceptable like (2.21b,c). The unacceptability of example (2.8) is also simply accounted for in the same way. The *paintings* are readily recognized as specific and individually identifiable but the individual identity is irrelevant to *drawing paper*.

Interestingly, even when its numeral is 'one', Pre-N is not unconditionally assigned a specific reading and the sentence can be still awkward as in (2.22). We still need a plausible reason why that particular *eraser* is distinguished as an isolated unique individual in the given context.[45]

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[44] If the Pre-N has an additional modifier like below, a specific reading is readily available.

zinzika-no san-nin-no hisyo-o sagasiteiru.
human.resources-GEN 3-CL-GEN secretary-ACC be.searching
'(they) are looking for the three secretaries of the human resources section.'

The information added by the modifier makes it easier for one to assume that such specific referents really exist compared to the non-modified counterpart. This increased plausibility makes the *non-hiring* context more likely.

[45] In Japanese, there is no contrast between singular and plural forms and no overt syntactic marking is required for singular forms. Therefore when there is no specification in quantity, the most likely default number interpretation is

(2.22) ? kinoo **ik-ko**-no kesigomu-o katta.
yesterday 1-CL-GEN eraser-ACC bought
'I bought an eraser yesterday.'

This specificity function of Pre-N is reflected in the frequent use of Pre-N for titles of novels and movies, e.g., *siti-nin-no samurai* "*the Seven Samurai*," and *san-biki-no kobuta* "*Three Little Pigs*." When a title consists of an NQ, other NQ constructions are far less commonly used.[46] The host nouns in such examples are usually distinguishable, though there are some titles with a non-distinguishable host noun such as *san-bon-no ya* "*Three Arrows*." Titles usually highlight particular main protagonists or key items in the stories. The referents introduced in the titles are not identifiable to the readers at the beginning, although the readers or viewers expect that the entities introduced in the titles will be elaborated on in the following stories. This consensus guarantees the specificity of the entities in the titles and allows Pre-N to be used in such a context (Kato 1997: 57).

Thus the specific reading seems to be quite important to Pre-N, and some Pre-N examples are unacceptable if the reading is not available. Then why is Pre-N coerced to have 'specificity'? As shown in 2.3.1, the attributive reading is obligatory for Pre-N, and the single (/collective) reading can satisfy this requirement. Does the specific reading also satisfy the attributive reading requirement like the single reading? How is the specific reading different from the single reading?

The specific reading mentioned above concerns the specificity of each of the entities denoted by the host noun since it is based on the presupposition of the distinguishability of each entity. If each of the plural entities is a specific individual, those entities as a whole are also to be specific as well and, therefore, they can be referred to as an established set. The quantitative

'one.' Explicitly expressing the numeral 'one' tends to be avoided unless a pragmatic emphasis is placed on the numeral.

[46] There are some titles in other NQ constructions. See 2.4 for further discussions.

information denoted by the NQ is considered as a fixed attribute of the set. Thus the coerced specific reading also satisfies the attributive requirement. In other words, in order to fulfill the attributive reading requirement, a specific reading is coerced to Pre-N, which is based on the distinguishability of the denoted entities. Therefore, when the denotation of the host noun is distinguishable as in (2.21a), a specific reading is quite likely for it. However, the coerced specificity to Pre-N is not always acceptable and the discourse context may cancel the reading as in (2.21b) or some host nouns are not likely to be used in Pre-N as in (2.21c). The denotation of the noun *hisho* 'secretary' is 'distinguishable' individuals in general, and the Pre-N construction requires the distinguishable entities to be interpreted specific. So the denotation of the host noun *hisho* in (2.21b) is to be interpreted as specific entities. However, the most likely sentential context for (2.21b) is *recruiting new secretaries* and the referent is supposed to be interpreted as 'any' *three secretaries*, which does not allow a specific reading. Due to this mismatch between the coerced specificity and the actual context, the sentence is judged unacceptable. If the host noun is modified as in the example of footnote 18, the context perfectly matches the potential specificity denoted by the host noun and the sentence is acceptable. On the contrary, when the denotation of the host noun is non-distinguishable, a specific reading is not available as in (2.21c). However, when the Pre-N MP is modified and the entire set denoted by the MP is interpreted as specific, the sentence is acceptable even when the host noun denotes non-distinguishable entities.

(2.23) **kono**-san-mai-no gayooshi-o kau.
this-3-CL-GEN drawing.paper-ACC buy
'I will buy these three sheets of drawing paper.'

Note that the 'specificity' requirement of Pre-N itself is intact in (2.21b) and it is because of this requirement that the sentence becomes unacceptable. However, specificity is not an

obligatory condition for Pre-N, instead attributiveness is obligatory. Specificity is merely one of the means to fulfill the attribute requirement of Pre-N. When the host noun denotes non-distinguishable entities, specificity is basically not readily available and the quantity of those plural entities is not interpreted as their attribute. Then they need to be interpreted as a set based on their physical proximity or other extralinguistic support so that they have a single reading.

Thus the specificity condition of Pre-N is a by-product of the obligatory attribute reading of Pre-N but is not necessarily obligatory itself, since the denotation of a Pre-N MP with single reading can be non-specific (/indefinite). When we judge examples like (2.12b) upon hearing them out of the blue, first we try to interpret them as specific entities, assigning the specificity condition to interpret the Pre-N MP. If the reading is not plausible, then we seek a single reading, which depends on a substantial contextual support. When either reading is not readily available, the Pre-N example is likely to be judged unacceptable.

In sum, single reading and specific reading both satisfy the attributive reading requirement of Pre-N. The quantitative attribute represented by the NQ in a Pre-N MP depends on whether the plural entities are recognized as an established set. This quantitative attribute then functions as a key characteristic for referencing the set. However, these two readings are different with respect to whether the entities in the set are recognized as homogeneous or as unique individuals. The former reading is available except when the context explicitly denies that reading while the latter is available only when the context explicitly supports that reading. In that sense, the former reading is unmarked while the latter reading is marked, which is also supported by the significant difference in the distribution of these two readings.

2.4 Other NQ constructions relevant to Pre-N

In this section, I examine two NQ constructions that are considered structurally relevant to Pre-N and discuss the association patterns between their constructional characteristics and functions through the similarities and differences of these three constructions.

2.4.1 NQ-N construction and Num-N construction

There are two NQ constructions in which the host noun is modified by a pre-nominal NQ/numeral as in Pre-N. One is 'NQ-N,' in which an NQ precedes the host noun, and the other is 'Num-N,' in which a bare numeral precedes the host noun. The morphological difference between these two constructions and Pre-N is the presence or absence of the genitive marker *no*.

(2.24)

a	**san-nin-no** kyoodai 3-CL-GEN brother	(Pre-N)
b	**san-nin**-kyoodai	(NQ-N)
c	**san**-kyoodai	(Num-N)

ALL: 'three brothers'

Kim (1995: 212) classifies these two constructions together as 'QN' due to the constructional similarity compared to Pre-N.[47] He simply claims that 'the QN construction is semantically similar to the [Pre-N]' and that '[t]he QN type sounds archaic and semantically more restricted than the [Pre-N] type' (ibid: 213). They actually have some characteristics in common. Host nouns that can be used in these NQ constructions are very limited and such examples are usually idiosyncratic. First, both are found in proper nouns, e.g. place names, while Pre-N has no such examples.[48]

(2.25) **NQ-N**

a Yotuya b Roppongi c Sangenjaya

[47] He further divides them into the native QN and the Chinese QN based on the two different counting systems in Japanese. (See Chapter 1)

[48] There are some place name examples that have a numeral and the genitive marker, e.g., San-no seki (three-GEN gate), but the numeral is actually an ordinal number, instead of a cardinal number, in such examples.

Num-N examples are also found in family names and all three examples in (2.26) can be used as family names too. On the contrary, most NQ-N place-name examples are not likely to be used as family names.

yo-tu-ya	ro-ppon-gi	san-gen-jaya
4-CL-valley	6-CL-tree	3-CL-café
Literally: ‘four valleys’	‘six trees’	‘three cafes’

(2.26) **Num-N**

a Miura	b Gotoo	c Ituki
mi-ura	go-too	itu-ki
3-inlet	5-island	5-tree
Literally: ‘three inlets’	‘five islands’	‘five trees’

Second, both NQ-N and Num-N are claimed to be idiomatic expressions (Kim: ibid). In such idiomatic examples, it is very unlikely that the numerals are replaced by other numerals.

(2.27)

a	**hutatu**-henzi	(NQ-N)
	2.CL-reply	‘agreeing very willingly (literally: ‘two replies’)’
b	**huta**-mata	(Num-N)
	2-crotch	‘two-timing’ (literally: ‘two legs’)

Thus these two constructions have similar usages and there seems to be no significant semantic difference between them. However, they are actually quite different as shown in the following set of examples.

(2.28)

a	**hutari-no** yokozuna	(Pre-N)
	2.CL-GEN grand.champion	
b	**hutari**-yokozuna	(NQ-N)
c	**ni**-yokozuna	(Num-N)

ALL: ‘two grand champions (in sumo wrestling)’

(2.28c) refers to ‘(specific) two grand champions’ therefore it sounds perfectly fine in (2.29) where the identity of those *two champions* is explicitly stated. On the contrary, (2.28b) sounds slightly awkward in the same context since the NQ-N is not likely to refer to the specific entities.

(2.29) Takanohana, Akebono-no **ni-yokozuna**/ ?**hutari-yokozuna**-ni tuti-ga tuita.
-GEN 2-G.C. 2.CL-G.C.-to soil-NOM attached
‘Two Grand Champions, Takanohana and Akebono, were beaten.’

Furthermore, when modified, Num-N often refers to a specific group of individuals while NQ-N is unlikely for such usage. The Num-N example in (2.30) represents a famous cartoon song character, but its NQ-N counterpart is not acceptable.

(2.30) **dango** san-kyoodai /??san-nin-kyoodai
dumpling 3-brother 3-CL-brother
'The Dumpling Three Brothers (title of a song) '

When the collectiveness of plural entities denoted by the MP, instead of the identity of each entity, matters, (2.28b) may be acceptable. The NQ-N expression in (2.29) represents 'a pair of Grand Champions' as a **type** and may refer to any 'pair of Grand Champions playing together (in the same tournament).' The denotation of NQ-N is generic and no specific referents are necessary in (2.31). On the contrary, its Num-N counterpart sounds slightly awkward because the specificity represented by the Num-N contradicts the generic interpretation.

(2.31) hutari-yokozuna /?ni-yokozuna -no basho-de yokozuna-ga yuushoosuru.
2.CL-G.C. 2-G.C. -GEN tournament-at G.C-NOM win.tournament
'A Grand champion wins a tournament in which two Grand Champions play.'

A similar pattern is found when the host noun is *kyoodai* 'brother(s).' Here the NQ-N *three brothers* represents just a type and does not have specific referents in (2.32). Again, NQ-N is acceptable but Num-N sounds awkward.

(2.32) (hitorikko nanode) **san-nin-kyoodai** /??san-kyoodai -ga urayamasii.
only.child because 3-CL-brother 3-brother -NOM envy
'I envy (those who have) three brothers because I am an only child.'

There are few NQ-N examples of this kind. (2.33a), which is used in Takarazuka[49], is quite similar to (2.28b) in that both describe hierarchical structures. (2.33b) describes a formation or strategy in Japanese chess using a certain type of pieces in a duo.

(2.33)
a hutari-toppu

[49] Takarazuka is a private organization of all-female theater troupes that perform musicals in Japan. The name comes from the name of the city in which their main theater is located.

2.CL-top
'two top performers or a hierarchy with top performers'

b nimai-gin
2.CL-silver
'a strategy in Japanese chess using two '*gin*' pieces to attack the opponent'

Again, these terms represent 'types' not individuals; however, (2.33b) may be specific as well because the number of *gin* pieces is limited to two to each player in Japanese chess. Their Pre-N counterparts, *ano-hutari-**no** toppu* 'those two top performers' and *kono-nimai-**no** gin* 'these two pieces of gin,' are both acceptable.

(2.34)

a * ano-hutari-toppu-wa odori-ga ii.
that-2.CL-top-TOP dance-NOM good
'Those two top performers in the hierarchy are good at dancing.'

b kono-nimai-gin-ga yoku hataraita.
this-2.CL-silver-NOM well worked
'This pair of *gin* pieces did a good job.'

Thus Num-N seems to represent 'a set of specific individuals.' On the contrary, NQ-N tends to represent 'a set as a type,' which may or may not represent an instantiation.

Both Num-N and NQ-N may independently function as a referring expression. The denotation of Num-N is specific and the identities of the referents must be recognizable, while that of NQ-N is rather collective as a set of homogenous members or generic and the individual identity of each entity is irrelevant.[50] Interestingly, these two readings roughly correspond to the

[50] NQ-N may refer to specific individuals when it is modified by a demonstrative as in (1).

(1) **ano**-san-nin kyoodai
that-three-CL brother
'those three brothers'

Such examples are far less common than their Num-N counterparts, if not impossible. Furthermore, some NQ-N may be used as titles like Num-N and Pre-N. The following NQ-N is the title of a famous classic novel and these *five women* are interpreted as specific individuals.

(2) **koosyoku** go-nin-onna /*go-onna
amorous 5-CL-woman
'The Five Amorous Women'

However, the host nouns that allow this kind of specific NQ-N examples are very limited, e.g., *otoko* 'man' and *musume* 'daughter/girl.' Interestingly its Num-N counterpart is not acceptable. As will be shown in the following

two readings of Pre-N, 'specific reading' and 'single (collective) reading.' Num-N has a similar reading to the specific reading of Pre-N in that the referent is specific individuals, while NQ-N has a similar reading to the collective reading of Pre-N in that the denotation of the Pre-N MP is an indefinite set that often represents a type (Amazaki 2004).

(2.35)

a san-nin-no tomodati-o matteiru.
3-CL-GEN friend-ACC be.waiting
'(I'm) waiting for three friends.'

b hyaku-mai-no gayoosi-o katta.
100-CL-GEN drawing.paper-ACC bought
'(I) bought (a pack of) 100 sheets of drawing paper.'

However the distribution of Num-N and NQ-N is much more limited than that of Pre-N, and most Pre-N expressions do not have legitimate Num-N and NQ-N counterparts as seen in (2.36).

(2.36)

a san-nin-no tomodati
3-CL-GEN friend

b * san-nin-tomodati

c ?? san-tomodati

ALL: 'three friends'

Although these two constructions are less productive than Pre-N, Num-N is much more productive than NQ-N. The host nouns of Num-N are mostly Sino-Japanese words. Loan words are also partially available but native Japanese words are never available as shown in (2.37).[51]

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section, there are some morphological and semantic restrictions on the host noun of Num-N and the above examples can be considered as alternatives for such Num-N expressions.

[51] In Japanese there are many loan words from Chinese, but those words are classified as part of Sino-Japanese words since they were introduced to Japan hundreds of years ago and deeply integrated into the Japanese lexicon. In this thesis I limit the meaning of the term 'loan words' to words that were introduced into Japan mainly from western languages excluding Chinese. When the host noun is a loan word, the numeral may be pronounced as an English numeral, e.g., *surii-bakku* (three-back) '(the formation of) three defensive players (in soccer).' These terms were imported as they are and the numeral part is rarely replaced by a Japanese numeral. However, when it happens, the expression will be NQ-N instead of Num-N.

hutari-boranti / * ni-boranti cf. tuu-/daburu- boranti
2.CL-*volante* 2-*volante* two-/double- *volante*
'(the formation of) two defensive mid-fielders (in soccer)'

The acceptable examples are productive in that the numeral can be freely replaced with another one. When they are paraphrased with Pre-N expressions, the general classifier *(t)tu* is inserted.[52]

(2.37)

a	**san**-gensoku	cf. mi**ttu**-no gensoku (Pre-N)
	3-principle	3.CL-GEN principle
	Both: 'three principles'	
b	**san**-tiimu	cf. mi**ttu**-no tiimu (Pre-N)
	3-team	3.CL-GEN team
	Both: 'three teams'	
c *	huta-kimari	cf. huta**tu**-no kimari (Pre-N)
	2-rule	2.CL-GEN rule
	'two rules'	

Thus NQ-N and Num-N have quite different functions, although they have some similarities. Compared to Pre-N, both of them are less productive; however, Num-N is much more productive than NQ-N. In the following section, I will show the productive usage of Num-N.

2.4.2 Non-specific reading of Num-N

Num-N does not necessarily refer to specific individuals. Actually, the non-specific use of Num-N is quite common; therefore it is better to assume that Num-N has two major functions. The following example may have either a specific or non-specific interpretation.

(2.38) san-kazoku
3-family
'(the) three families'

These examples show that these terms are supposed to be in NQ-N instead of Num-N because they are about the formation of players and the referents are not specific individuals, but indefinite or rather non-referential entities. However, due to the direct importation (or at least due to the influence of the original language), the terms remained Num-N with English (in this case Portuguese) pronunciation.

[52] Not all Sino-Japanese or loan words are available for this construction. When the host noun denotes concrete physical entities, this construction does not seem to be available.

a *	san-boosi	b *	san-baiku
	3-hat		3-motor.cycle
	'three hats'		'three motor-cycles'

When specific, the *three families* are interpreted as identifiable entities in the given context and may function as a pronominal expression.[53] When non-specific on the other hand, the host noun itself functions like a classifier to count the number of *families*. This kind of usage is widely found especially when the co-occurring classifier of a host noun is limited to the general classifier *tu*.

Greenberg (1975) discusses the crosslinguistic developmental patterns of classifier constructions. Based on his crosslinguistic data he argues that classifiers were originally nouns and that Q-N turned to Q-CL.[54] Downing (1996) also points out that Num-N might be relevant to the process of creating new classifiers, since bare numerals can be directly attached to some Sino-Japanese words or new loan words with which the general classifier *tu* was originally used.[55] This is a rather productive process and irrelevant to idiomatic meanings. However, the grammaticization for them to become full classifiers is not so easy because such classifiers are compatible with few host nouns and the extensions of their co-occurring host nouns are quite limited. The classifier *sya* is roughly considered to have been created through the following process (Downing1996: 144).[56]

(2.39) san-kai**sya** → san-**sya**
3-company 3-CL
Both: 'three companies'

[53] This is considered to be relevant to Independent NQ construction. (cf. Chapter 4)
[54] 'Q' stands for a numeral, 'N' for a noun, and 'CL' for a classifier respectively.
[55] Kim (1995: 214), however, suggests that they are 'an older form of the Q[N] construction which survived merely in formal rhetoric and fossilized idioms.'
[56] Downing thinks that the classifier *sya* has another source, which is *zya* in *zinzya* 'shrine.' (Due to the voicing assimilation *sya* is pronounced as *zya* here.) Since the same Chinese character is used for both *company* and *shrine*, they are considered as the same morpheme.

However, this classifier is not freely used in Pre-N as in (2.40). There seems to be some semantic clash or redundancy due to the co-occurrence of two substantial nouns in the phrase.[57] Its Pre-N counterpart has no such semantic clash and is perfectly fine.

(2.40) ?? **san-sya**-no sinbunsya cf. mittu-no sinbunsya
3-CL-GEN newspaper.company 3.CL-GEN
Both: 'three newspaper companies'

Although the host noun part of such an Num-N expression is somehow considered grammaticized to be a classifier, the process does not seem to be fully completed in that the host noun still maintains the original nominal meaning to a certain extent.

Greenberg (1975) also argues that the classifier construction has shifted from Post-nominal (N-Q.CL) to Pre-nominal (Q.CL-N) in many languages.[58] In modern Chinese only the latter construction is available, but in old Chinese the former construction was frequent.[59] In Gilyak, this shift is then ongoing and seen as generational varieties. So such new 'classifiers' like *sya* are not completely grammaticized as a full-fledged one. They have not been fully developed to the Pre-nominal one. The nominal characteristic is not completely neutralized or removed from them. Thus the non-specific reading of Num-N seems to be related to the grammaticization process of classifiers, therefore its difference from the specific reading of Num-N is not simply semantic as we found in the two readings of Pre-N. Rather these two are

[57] Its FL and JX counterparts are perfectly fine.
(1) ? **san-sya-no** sinbunsya-o hoomonsita. (Pre-N)
3-CL-GEN newspaper.company-ACC visited
(2) sinbunsya-o **san-sya** hoomonsita. (FL)
(3) sinbunsya **san-sya**-o hoomonsita. (JX)
All: '(I) visited three newspaper companies.'

[58] In child language acquisition, Japanese children seem to start using the post-nominal forms much earlier than pre-nominal forms. The use of the former type is dominant in my personally collected spoken data of small children at (3-5 years old (my personal data)).

[59] Nakagawa and Li (1992: 107) state that the N-NQ word order is possible only in a very special context, such as ordering at a restaurant and filling in an accounting book, which is considered as a list reading.

different constructions, undergoing changes in different directions, even though they share the same structure.

When the numeral is 'one,' Num-N has interesting meanings. First, when the host noun denotes a status of people as a generic class, the Num-N MP represents an anonymous sample of such people in that generic class. The host nouns in this kind of examples are generally limited to Sino-Japanese or loan words and the reading of the numeral is always Chinese.

(2.41)

a iti-simin cf. hitori-no simin (Pre-N)
1-citizen 1.CL-GEN citizen
Both: 'a citizen'

b iti-simin/ hitori-no simin tosite syakai-ni kookensuru (koto)
1-citizen/ 1.CL-GEN citizen as society-to contribute (thing)
Both: 'contributing to the society as a citizen'

Num-N whose numeral is 'one' simply represents an anonymous instantiation of the generic class and is quite unlikely to have a specific referent. Examples of this type usually have their counterpart Pre-N. The Num-N in (2.41b) denotes a person with that given status but not necessarily refers to a certain individual. Therefore, when referring to a specific individual, Num-N sounds awkward while its Pre-N counterpart is perfectly fine as in (2.42).

(2.42) ?iti-simin/ hitori-no simin -ga gikai-ni manekareta.
1-citizen/ 1.CL-GEN citizen -NOM assembly-to invite.PAS.PST
'A citizen was invited to the local assembly.'

The numeral cannot be changed to others in Num-N, while it is possible in Pre-N as in (2.43).

(2.43) *ni-simin/ hutari-no simin -ga gikai-ni manekareta.
2-citizen/ 2.CL-GEN citizen -NOM assembly-to invite.PAS.PST
'Two citizens were invited to the local assembly.'

Second, Num-N may have nominalized forms of activity verbs as its host noun. The numeral in such an example is mostly fixed at 'one' and generally has the native reading *hito-*.

Generally the distribution of Num-N is more limited than that of Pre-N; however, this type is exclusive to Num-N and counterpart Pre-N examples are not available.

(2.44) hito-oyogi
1-swimming
'a swim'

cf. * hitotu-no oyogi
1.CL-GEN swimming

This kind of expressions means '~ing a little' and represents a minimum instantiation of the activity. It does not count the actual number of times of activities; therefore, no other numerals can replace the numeral 'one'.

(2.45) *huta-oyogi
2-swimming

However, if the activity is repetitive, numerals larger than 'one' may be available in order to count the number of repetition of the activity. As in (2.46a), the number of *strokes* can be counted; however, numerals larger than two are not unconditionally likely, nor is wh-question word *nan*-. As shown in (2.46b), not all the verbal nouns representing repetitive activities are compatible with this pattern.

(2.46)

a hito-kogi, **huta**-kogi, *mi-kogi/?san-kogi, …, ?**nan**-kogi
1-rowing 2- 3- / 3- what-

b *hito-nage, ***huta**-nage, …
1-throw 2-

This might be relevant to the presence of a semantically similar expression. In (2.47) the host noun are represented by the same Chinese character 投(*too*) 'to throw' that has the same meaning but a different reading. This preempts the expressions like (2.46b).

(2.47) it-too > *hito-nage
1-throw 1-throw
'one act of throwing'

There are also some examples of this kind that have a Chinese reading.

(2.48) a. i-kken b. iti-doku

1-look 1-read

The amount of event or activity can be also represented by ordinary nouns.[60]

(2.49) a. hito-koto
1-word
'one utterance'

b. ip-pai
1-cup
'one occasion of drinking'

These examples also represent either a repetitive activity or a minimum instantiation of the activity according to the type of activity denoted by the host noun but regardless of the type of host noun, i.e. simple noun vs. verbal noun. The latter minimum instantiation reading is similar to the anonymous sampling reading in that the minimum portion/entity is instantiated and the only available numeral is 'one.'

Third, some of the verbal nouns seem to function as classifiers. These examples have similar English counterpart expressions.

(2.50) hito-tumami-no sio
1-pinch-GEN salt
'a pinch of salt'

Interestingly, the number of times of the activity denoted by the host noun is no longer the object of counting; instead the amount of entities handled by that activity is concerned. In (2.50) the number of times of *pinching* itself is not concerned; instead the amount of *salt* is actually measured by the verbal noun. In this sense, they function as non-unit counters.[61] Thus when the

[60] In addition, nouns representing events may be available in this pattern. These expressions also denote a minimal instantiation of the events denoted by the nouns.

(a) hito-ame (b) hito-huro (c) hito-haran
1-rain 1-bath 1-disturbance

[61] There are some verbal nouns that seem to have become more like classifiers.

hito-mawari, huta-mawari, …
1-round 2-round
'one round, two rounds, …'

Here, the original verb *mawaru* 'go round' is nominalized and represent the number of rounds as a classifier. This expression can be used to describe a temporal gap.

hito-mawari ue-no sedai
1-round up-GEN generation
'the immediately preceding generation'

numeral of Num-N is ‘one’ the denotation of the Num-N is non-specific, which is quite contrastive to the other reading of Num-N.

Thus Num-N always represents an instantiation of a set of entities regardless of the specificity of the set, while NQ-N usually represents a set of entities as a type and may not have a specific referent, but it may represent an instantiation as well.

2.5 Summary

Pre-N has two possible interpretations; specific reading and single reading. Both readings are derived from the general attributive reading of the genitive construction. In the former reading, the Pre-N MP refers to either ‘a specific set of entities’ or ‘a set of specific entities’, and the MP represents an established set of actually instantiated entities of the host noun denotation. In the latter reading, the denotation of the Pre-N MP refers to an established set of entities. The Pre-N MP with this reading does not necessarily have a specific set as its referent; instead it may refer to a type. These two readings have remarkable resemblance with the readings of the two different NQ constructions, Num-N and NQ-N, respectively. I will come back to the Pre-N construction in Chapter 5 and discuss how the process of measurement is encoded in Pre-N, comparing it to other NQ constructions.

Chapter 3 Floating numeral quantifier construction (FL)

In this chapter, I deal with the floating numeral quantifier construction (FL), which is well-known as 'quantifier (Q)-float.' First, I analyze its functional characteristics. Then, I discuss the constraints on Q-float in terms of syntax, semantics, and pragmatics, and show that the constraints are a combination of constraints layered at different linguistic levels. I also deal with other NQ constructions structurally relevant to this construction and discuss their functional relationships with FL.

3.1 Basic structure of FL

The basic structure of a FL sentence is as follows. The host noun is case-marked and the floating NQ (FQ) immediately follows the host NP. I call the unit of a host NP and an FQ 'NP-FQ pair.'

(3.1) kinoo gakusei-ga san-nin kita.
yesterday student-NOM 3-CL came
'Three students came yesterday.'

In (3.1) the host NP and FQ are usually adjacent to each other but it is not necessarily so.[62] Another element can intervene between the host NP and FQ as in (3.2).[63]

(3.2) gakusei-ga **kinoo** san-nin kita.
student-NOM yesterday 3-CL came
'Three students came yesterday.'

[62] In my data, 33 out of 39 FL examples have adjacent NP-FQ pairs (84.6%). This tendency is also found in fronted NQ construction (F-NQ, cf. (3.3) and §3.5.1); eight out of nine F-NQ examples have adjacent NP-FQ pairs (88.9%).

[63] As shown in Chapter 1, Kim (1995) and many others such as Fukushima (1991a,b) and Mihara (1998a-c) purposefully use this version, which has an explicit intervening element, as a default FL format for their discussions since they want to explicitly show that the NP-FQ pair is not a single syntactic constituent. However, since there is no significant difference in the propositional content between (3.1) and (3.2) I assume that the NP-FQ pair in FL is not a single syntactic constituent regardless of the presence or absence of an intervening element unless the case marking on the host NP is omitted (cf. Chapter 4). So I do not take special measures to indicate their non-constituency by inserting an additional element like Kim and Mihara. Actually there are some examples in which inserting an element between the host NP and the NQ may change the acceptability of some FL sentences. I will discuss this issue in 3.3.4.

An FQ may precede its host NP as in (3.3). I call this type 'fronted NQ construction (F-NQ),' which corresponds to Miyagawa (1989: 50)'s 'NQ scrambling' or Kim (1995: 231)'s 'QXN' construction.[64]

(3.3) **san-nin** gakusei-ga kita.
3-CL student-NOM came
'Three students came.'

The host NP and the FQ do not form a single syntactic constituent. However, they are considered as a semantic unit because the choice of proper classifier in the FQ is still conditioned by the semantic classification of the entities denoted by the co-occurring host noun (cf. Chapter 1).

It is also possible to omit the host NP in FL when the missing NP is pragmatically recoverable from the context. Hence the following sentence (3.4a) is acceptable as long as what *Taro* bought is clearly understood in the context. Kim (1995) classifies this type as 'Sentence external and post sentential ([..N..]s [..Q..]s).' I regard this kind of examples as a subtype of FL, whose host NP is omitted, as shown in (3.4b).

(3.4)
a Taroo-wa **san-mai** katta.
-TOP 3-CL bought
'Taro bought three (flat objects).'

b Taroo-wa (syatu-o) **san-mai** katta.
shirt-ACC
'Taro bought three (shirts).'

The host noun in FL can be freely modified while the FQ does not allow any immediately preceding modifier besides a certain type of modifiers such as *yaku* 'approximately' and *kei* 'total,' as shown in (3.5).

(3.5)

[64] Again, Kim (1995) purposefully inserts another element X between the NQ and the host NP for the same reason stated in fn 1. I will discuss this type in 3.5.2.

a **atarashii**-gakusei-ga san-nin kita.
new-student-NOM 3-CL came
'Three new students came.'

b * gakusei-ga **atarashii**-san-nin kita.
student-NOM new-3-CL

c gakusei-ga **kei**-san-nin kita.
total-
'A total of three students came.'

Although the FQ in FL is never case-marked as in (3.6a),[65] it can be marked by some pragmatic particles as in (3.6b).

(3.6)
a * gakusei-ga san-nin-**ga** kita.
student-NOM 3-CL-NOM came
'Three students came.'

b gakusei-ga san-nin-**mo** kita.
-P(as.many.as)
'As many as three students came.'

These restrictions show that the FQ is not nominal but has some adverbial characteristics (Okutsu 1969: 51).

3.2 Distribution of FL

As shown in Chapter 2, FL is usually not available when the host NP is not an argument, although there are some marginal cases when host NPs are marked by the dative case. The following is the general distribution pattern found in the FL construction (Okutsu 1969, Shibatani 1977, Inoue 1978, inter alia).

(3.7)
a gakusei-**ga** san-nin hon-o katta. (Nominative)[66]

---

[65] Examples like (3.6) are available in Korean.
[namhaksaeng]-**i** se myëng-**i** yëhakusaeng-íl mil-ës'-ta.
boy.student-NOM 3 CL-NOM girl.student-ACC push-PAST-DEC
'Three boy students pushed girl students.' (Lee 1989: 478)
An independent NQ, which does not co-occur with its host noun, may be case-marked; but I do not regard them as a variation of FL (cf. Chapter 4).

[66] The host NP in (3.1) is also nominative, i.e. the subject of an intransitive verb. The nominative host NP in (3.7a) is the subject of a transitive verb.

student-NOM 3-CL book-ACC bought
'Three students bought books.'

b gakusei-**o** san-nin maneita. (Accusative)
-ACC 3-CL invited
'(I) invited three students.'

c (?) gakusei-**ni** san-nin okane-o ageta. (Dative)
-DAT 3-CL money-ACC gave
'(I) gave money to three students.'

d * kooen-**e** mittsu itta. (Allative)
park-to 3.CL went
'(I) went to three parks.'

e * gakusei-**to** san-nin itta. (Comitative)
-with 3-CL went
'(I) went with three students.'

f * mura-**kara** mittsu hito-ga kita. (Ablative)
village-from 3.CL person-NOM came
'People came from three villages.'

g * kami-**de** san-mai hako-o tsukutta. (Instrument)
paper-by 3-CL box-ACC made
'(I) made a box with three sheets of paper.'

h * gakusei-**no** san-nin ie-e itta. (Genitive)
student-GEN 3-CL house-to went
'(I) went to three students' houses.'

i * kookoo-**de** san-koo rekishi-o oshieta. (Locative)
high.school-at 3.CL history-ACC taught
'(I) taught history at three high schools.'

Adjunct NPs such as comitative, ablative, instrumental, and genitive are generally not allowed to host FQs.[67] Compared to the distribution of their Pre-N counterparts; the distribution of FL

[67] However, there are some acceptable examples even with adjunct host NP cases, although there are wide individual differences in the acceptability judgment on them. The following examples are introduced as acceptable ones by the following authors respectively.

(1) doosookai-de watasi-wa mukasi-no gakusei-**to** san-nin saikai-sita.
alumni.meeting-at I-TOP former-GEN student-COM 3-CL reunion-did
'I met three former students again at the alumni meeting.' (Tsubomoto 1995: 83)

(2) boku-wa gantan-ni osiego-**kara** go-nin nengajoo-o moratta.
I-TOP New.Year's.Day-on student-from 5-CL New.Year's.card-ACC received
'I received five New Year's cards from my students on New Year's Day. (Takami 1998a: 94)

(3) kinoo sinai-no depaato-**de** ni-ten kasai-ga hasseisita.
yesterday city-GEN department.store-at 2-CL fire-NOM occurred
'Yesterday two department stores in the city had fire.' (Okutsu 1996:117)

examples is thus much more limited. The distribution of FL examples according to the case of host NPs is shown in Table 3.1. The host NPs in most FL examples are either nominative (intransitive subject) or accusative.[68]

Table 3.1. Distribution of FL examples according to the case of host NP

	Nom.(vi)	**Nom.(vt)**	**Acc.**	***wa/mo***	**others**	**total**
saga 3tu	1	0	1	3	0	5
saga 3nin	0	0	0	1	0	1
aozora 3tu	18	0	13	3	2	36
aozora 3nin	3	1	1	3	0	8
Total	22	1	15	10	2	50

There are some important differences between intransitive and transitive nominative host NPs with respect to the eligibility of hosting an FQ (Miyagawa 1989, Downing 1993, Gunji and Hasida 1998). Subject NPs are more strictly conditioned to host an FQ than Object NPs, which Downing calls 'absolutive pattern' since intransitive subjects and direct objects, in contrast to transitive subjects, show a similar pragmatic behavior in this regard.[69] Previous studies on the distribution of the host NP of Q-float such as Ohki (1987), Downing (1993, 1996) and Kim (1995) show that a significant absolutive pattern in actual text count data; the dominant host NPs are either direct objects or intransitive subjects but not transitive subjects.

In addition, even a genitive NP can host an FQ if it is an inalienable or an event nominal (Kikuchi 1994).

(4) Yamada-sensei-ga gakusei-**no kami**-o san-nin kitta.
-teacher-NOM student-GEN hair-ACC 3-CL cut
'Mr. Yamada gave a haircut to three students.'

(5) Yamada-sensei-ga gakusei-**no hatugen**-o san-nin seisita.
statement-ACC 3-CL stopped
'Mr. Yamada stopped three students' speech.'

This kind of examples can be regarded as exceptions, since they are very unusual and sporadic (Mihara 1998a: 95). However, it is important to note that FL may be available to these adjunct cases, if not perfectly acceptable.

[68] In the date shown in Table 3.1, there are ten examples of NPs marked by '*wa*' or '*mo*.' Although those host NPs are marked by these discourse markers, their original case markers are all considered nominative based on the semantic relationships between the NPs and their predicates. There are also two examples in 'others.' They are marked by the genitive marker *no* and occur in relative clauses. Since the genitive marker *no* in a subordinate clause can mark the subject (Shibatani 1990; 349), its grammatical functions are equivalent to those of nominative.

[69] This pattern is commonly found in many different languages such as Korean (Lee 1989), Pima (Munro 1984) and Tzotzil (Aissen 1984), which have the so-called Q-float construction.

FL is very common in colloquial text. However, my text-count data show a striking contrast in its distribution according to source genre, namely that it is quite frequently used in novels but significantly infrequent in newspaper articles (cf. Table 1.3). I will discuss the issues concerning the frequency of the NQ constructions in Chapter 5.

3.3 Functional characteristics of FL

In this section, I discuss major functional characteristics of FL in terms of the following aspects: 1) newness and focus, 2) partitive reading, 3) distributive reading, and 4) subject-object asymmetry of the host NP.

3.3.1 FQ as new element

One of the major functions of the FL construction is to code new information in the FQ (Ohki 1987, Downing 1993, Iwahata 1993, Kim 1995, Takami 1998a).[70] I discuss this functional characteristic of FL by examining FL examples with wh-words on quantity, the pragmatic particle *-sika*, and a 'contrastive' meaning on the NP-FQ pair respectively.

3.3.1.1 Wh-Questions

In wh-questions, unidentifiable or unpredictable information is marked by a wh-word. When the quantity of entities is unpredictable, the wh-word *nan-* 'what' is combined with an appropriate classifier according to the entities denoted by the host noun.[71] The unmarked choice for a wh-question asking the quantity of something is FL rather than Pre-N. If the questions in (3.8) are given out of the blue, (3.8a) sounds more natural than its Pre-N counterpart (3.8b).

(3.8)

a Taroo-wa gayoosi-o **nan**-mai katta-no? (FL)

[70] Lambrecht (1994) defines that 'new information' is propositional and distinguishes it from 'new element', which is not propositional. Strictly speaking as Lambrecht claims, 'newness' is determined according to what is presupposed and asserted in the proposition in a given context, not whether the element is activated or not at the time of utterance; however, I use the term 'new information' in a broader sense, which includes 'new element' for the sake of convenience.

[71] When the classifier is *tu*, the wh-word *iku-* is used and they form the wh-expression *ikutu*.

-TOP drawing.paper-ACC what-CL bought-P

b ? Taroo-wa **nan**-mai-no gayoosi-o katta-no? (Pre-N)
-GEN
Both: 'How many sheets of drawing paper did Taro buy?'

It is not impossible to assume an appropriate discourse context for wh-questions like (3.8b).[72] However, since such a context is quite limited and not very common, FL is preferred as a default construction for asking the quantity of given entities.

When the speaker omits the host NP in FL but if it is not recoverable for the hearer, the hearer may ask a question in which the host NP is marked by a wh-word instead of the FQ as in (3.9). In (3.9B1), the FQ is neither a new element nor a focal element. The omission of the host NP in (3.9A) shows that speaker A presupposes that the hearers know what that quantity is about. However, since speaker B, who has joined A and others in the middle of the conversation, does not have that presupposition, she asks the question, in which part of the presupposition of the proposition (3.9A) is challenged.[73] Compared to (3.9B1), the counterpart Pre-N (3.9B2) is not appropriate in such a context. Pre-N wh-questions are only acceptable when they have a single reading or they are interpreted as echo questions.

(3.9)
A: Taro-wa **mit-tu** katta-tte.
-TOP 3-CL bought-P
'I heard Taro bought three.'

B1: (Taroo-wa) **nani**-o mit-tu katta-no? (FL)

[72] Pre-N wh-questions like (3.8b) is only acceptable in a special context, for example, when uttered as an exam question where the interrogator knows the answer and is just trying to retrieve some response from the students. (3.8b) is also acceptable when a single reading is available. As discussed in Chapter 2, plural pieces of paper must be recognized as an established set for the reading. Therefore it is assumed that those pieces of paper are packed as a set in advance. The size of package may differ according to the value of the NQ; however, the 'singleness' of a set has to be presupposed. So there should be several types of packages of drawing paper, e.g., 100-sheet package, 200-sheet package, and so on, to make (3.8b) acceptable. Note that, in such a context, the question is not to ask the quantity of entities, but to identify the type of entities referred to by that MP.

[73] The order of the host NP and NQ of (3.9B1) can be reversed as below. See for the discussions on fronted NQ examples in 3.5.2

B1': Taroo-wa **mit-tu nani**-o katta-no?
'What did Taro buy three of?'

-TOP what-ACC 3-CL bought-Q

B2: # (Taroo-wa) mit-tu-no **nani**-o katta-no? (Pre-N)
-TOP 3-CL-GEN

Both: 'What did Taro buy three of?'

Furthermore, when wh-words are used for both host N and FQ, the FL question is acceptable as in (3.10B1), while the Pre-N question is not acceptable as in (3.10B2)

(3.10)
A: Taroo-wa suupaa-de iroirona mono-o tairyooni katta-rasii.
-TOP supermarket-at various thing-ACC a.lot bought-hearsay
'Taro seemed to have bought a lot of things at Takashimaya.'

B1: (Taroo-wa) **nani**-o **ikutu** katta-no? (FL)
-TOP what-ACC how.many bought-P

B2: * (Taroo-wa) **ikutu**-no **nani**-o katta-no? (Pre-N)
how.may-GEN

Both: 'What and how many did Taro buy?'

When the host noun is not identified, the denotation of Pre-N MP is hard to have a single reading, let alone a specific reading, since it is unlikely to be recognized as an established set. Therefore those Pre-N examples are quite awkward and hardly acceptable.[74]

The acceptability of murky FL examples may be enhanced when the FQ is marked by a wh-expression. Compared to its non-wh counterpart (3.7c), (3.11) sounds much more acceptable.

(3.11) gakusei-ni **nan-nin** okane-o ageta-no?
student-DAT what-CL money-ACC gave-Q
'How many students did you give money?'

As shown in the wh-NQ examples above, FL is suitable to code the quantity of entities as new information and introduce such new entities into the discourse context. On the contrary, the major function of Pre-N MP is reference and the NQ in Pre-N does not necessarily represent new information (cf. Chapter 2). Is this new quantitative information denoted by the FQ a focus?

[74] There are some exceptions. When the predicate is a psyche-verb, Pre-N wh-questions are acceptable. See further discussions in 3.4.

Since FQ represents unpredictable information, it is hardly part of presupposition. Instead it usually appears in assertion as a focal element. However, as shown in (3.9), when a part of presupposition is challenged, the FQ is not necessarily in focus.

In examples like (3.8a), in which the FQ is a wh-expression, the FQ and focus have a one-to-one mapping. However, it does not mean that FQ is exclusively focused in the sentence. FL can be used in event-reporting sentences as in (3.12), in which the entire sentence is in focus.

(3.12) kodomo-ga **san-nin** oyoideiru-yo.
child-NOM 3-CL swim.PRG-P
'Three children are swimming.'

Although the denotation of FQ is always in focus, the domain of focus in the entire FL sentence may include other elements. I will come back to this issue in 3.4.3.2.

3.3.1.2 Pragmatic particles

In this section, I deal with FL examples with overt pragmatic marking on FQ and further discuss the issues of focus in FL. Pragmatic particles put a certain pragmatic prominence on the elements that they mark and evoke a certain subjective 'anticipation' of the speaker. 'Anticipation,' which can be regarded as a 'pragmatic' presupposition, is different from 'presupposition' in that the former is based on the speaker's modal judgment while the latter is based on information structure. For example, the pragmatic particle -*sika* means 'only' or 'nothing but –,' and when it marks an FQ it means that the quantity is below the speaker's expectation in addition to that literal meaning.[75]

(3.13)
A gakusei-wa **nan-nin** kita-no?
student-TOP what-CL came-Q
'How many students came?'

[75] This pragmatic particle has to co-occur with a negative morpheme that is attached to the predicate. However, the function of -*sika* is not to negate a proposition, but to show a speaker's negative attitude toward an unsatisfactory result/state. When the actual result is below her expectation, the sub-par quantity of the element is marked by -*sika*. As will be shown later, this particle can also be attached to nouns.

B gakusei-wa san-nin-**sika** ko-nakatta.
3-CL-P(only) come-didn't
'Only three students came.'

These particles often mark the narrow focused element like above; however, it is not necessarily true and *sika* can appear in an FL with a sentence focus.

(3.14)
A zyugyoo-wa doo-datta?
class-TOP how-was
'How was your class?'

B gakusei-ga san-nin-**sika** ko-nakatta.
student-NOM 3-CL-P come-did.not
'Only three students came.'

(3.14B) strongly implies the speaker B's anticipation 'many more *students* would show up.' Although the subject NP in (3.14B) can be recognized as topical, the sentence has a sentence focus and no element in the sentence is presupposed.[76] However, with respect to the anticipation, only the FQ marked by the pragmatic particle is in assertion, which replaces part of the anticipation. Thus, assertion with respect to presupposition and assertion with respect to anticipation should be separately handled, although presupposition and anticipation often overlap as in (3.13B). These pragmatic particles express a prominence based on the speaker's modal judgment, which is not necessarily a focus based on the information structure. With this respect, those pragmatic particles cannot be regarded as 'focus particles.'

Let's consider some more examples with *sika*. This pragmatic particle can mark other elements besides the FQ when used in non-FL sentences.

(3.15)
a Taroo-ga biiru-o nonda.
-NOM beer-ACC drank
'Taro drank beer.'

b Taroo-ga biiru-**sika** noma-nakatta.

[76] In this context, g*akusei* 'student' is accessible through the 'frame' activated by mentioning to *zyugyoo* 'class.' However, all the elements in the sentence are new information in terms of information structure.

-only drink-did.not
'Taro drank only beer.'

c Taroo-**sika** biiru-o noma-nakatta.
'Only Taro drank beer.'

However, when the particle marks other elements besides FQ in FL, the sentences become quite awkward.

(3.16) (answering questions like 'Did Taro drink a lot?')
a Taroo-wa biiru-o san-bon nonda.
-TOP beer-ACC 3-CL drank
'Taro drank three bottles of beer.'

b Taroo-wa biiru-o san-bon-**sika** noma-nakatta.
-only drink-did.not
'Taro drank only three bottles of beer.'

c */?? Taroo-wa biiru-**sika** san-bon nomanakatta.[77]
Intended: 'Taro drank three bottles of BEER, not any other kind of beverage.'

d (answering questions like 'Did the students drink a lot?')
*/?? Taroo-**sika** biiru-o san-bon nomanakatta.
Intended: 'Only Taro drank three bottles of beer (not anybody else did so).'

When the FQ is marked by a pragmatic particle such as -*sika*, the acceptability of murky FL examples can be substantially raised as in (3.17) and (3.18), whose host NPs are dative and ablative respectively (Takami 1998; Mihara 1998).[78] There can be some individual differences in acceptability judgment, but it is certain that (b) sentences are better than their counterpart (a) sentences respectively.

(3.17)
a ? Taroo-wa **gakusei-ni** san-nin okane-o ageta.
-TOP student-DAT 3-CL money-ACC gave
'Taro gave money to three students.'

b Taroo-wa gakusei-ni san-nin-**sika** okane-o age-nakatta.

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[77] When the word order of the host NP and NQ in (3.16c) is reversed, the sentence is more acceptable, if not perfect. I discuss this issue in 3.5.2 (Fronted NQ).
(?) Taroo-wa **san-bon** biiru-sika noma-nakatta.
'Taro drank only three bottles of beer.'

[78] Kato (1997: 36) and Mihara (1998c: 105) mention that FL examples with these pragmatic markers should be handled separately since the markers may change the syntactic/semantic structure of the sentence; however, they do not give any further explanation on that structural change.

-only give-did.not
'Taro gave money to only three students.'

(3.18)

a ? Taroo-wa **gakusei-kara** san-nin okane-o atumeta.
-TOP student-from 3-CL money-ACC collected
'Taro collected money from three students.'

b Taroo-wa gakusei-kara san-nin-**sika** okane-o atume-nakatta.
-only collect-did.not
'Taro collected money from only three students.'

Overt marking on FQ by such markers enhances the acceptability of some murky FL examples, but the reason why the acceptability changes needs to be examined. I will discuss why the overt focus marking on FQ is relevant to the acceptability of FL in 3.4.

Some other pragmatic particles do not necessarily create such differences in acceptability like *sika*. When *sika* in (3.16) is replaced by the pragmatic particle *dake*, which also means 'only,' the counterpart sentences are perfectly fine.

(3.19)

a (answering questions like 'Did Taro drink a lot?')
Taroo-wa biiru-**dake** san-bon nonda.
-TOP beer-only 3-CL drank
'Taro drank only three bottles of beer.'

b (answering questions like 'Did the students drink a lot?')
Taroo-**dake** biiru-o san-bon nonda.
'Only Taro drank three bottles of beer.'

The above contrast in acceptability between the two pragmatic particles *sika* and *dake* comes from the different anticipations evoked by the pragmatic particles. Unlike *sika*, *dake* does not evoke any strong anticipations and the speaker simply states her subjective evaluation on the marked elements without any particular implications. The FQs in (3.19a,b) can be replaced by the wh-expression like below.[79]

[79] On the contrary, it is still impossible to replace the FQ in (3.16c,d) with a wh-expression.
(1) * Taroo-wa biiru-***sika*** **nan**-bon noma-nakatta-no?
-TOP beer-P(only) what-CL drink-didn't-Q
Intended: 'How many bottles of (exclusively only) beer did Taro drink?'

(3.20)

a Taroo-wa biiru-**dake** **nan**-bon nonda-no?
-TOP beer-only what-CL drank-Q
'How many bottles of (exclusively only) beer did Taro drink?'

b Taroo-**dake** biiru-o **nan**-bon nonda-no?
'How many bottles of beer did only Taro drink?'

In addition, the pragmatic particle *dake* is compatible with other pragmatic particles as shown below. In these examples, it is interpreted that the denotations of the elements marked by *dake*, 'beer' in (3.21a) and 'Taro' in (3.21b), are also in focus.

(3.21)

a (Answering to questions like 'Did Taro drink a lot?')
Taroo-wa biiru-**dake** san-bon-**mo** nonda.
-TOP beer-only 3-CL-as.many.as drank
'Only beer, Taro drank as many as three bottles.'

b (Answering to questions like 'Did everybody drink a lot?')
Taroo-**dake** biiru-o san-bon-**sika** noma-nakatta.
-only -only drink-did.not
'Only Taro drank no more than three bottles of beer.'

Thus, the acceptability of FL examples with pragmatic particles and the compatibility of FL with pragmatic particles are related to not only the information structures but also the anticipation frames evoked by those pragmatic particles.

3.3.2 Contrastiveness

The previous sections show that FQ codes new information and is likely to be interpreted as a focal element in the proposition. In this section, I show that 'contrastive' focus can also be relevant to the acceptability judgment of FL. Miyagawa (1991) and Gunji and Hasida (1998: 57) point that contrastive adverbials can raise the acceptability of murky Q-float examples. When a

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(2) * Taroo-***sika*** biiru-o **nan**-bon noma-nakatta-no?
-ACC
Intended: 'How many bottles of beer did (exclusively only) Taro drink?'
Thus, *sika* can hardly be part of presupposition.

contrastive focus is explicitly expressed by coordination of NP-FQ pairs as in (3.22b), the acceptability is substantially raised.

(3.22)
a ?? Taroo-ga **sensei-ni** hutari Hanako-o shookaisita.
-NOM teacher-DAT 2.CL -ACC introduced
'Taro introduced Hanako to two teachers.'

b Taroo-ga [**eigo-ka-no** **sensei-ni** hutari] (sosite)
English-section-GEN (and)
[**syakai-ka-no** **sensei-ni** hutari] Hanako-o shookaisita.
social.studies-section-GEN 2.CL
'Taro introduced Hanako to two English teachers and two social studies teachers.'

These two FL sentences, whose host NPs are dative, have the same basic structure except that the latter has coordination of NP-FQ pairs; however, it is certain that (3.22b) is more acceptable than (3.22a). It is likely that the acceptability of (3.22b) is enhanced by the contrastive focus on the FQs created by the coordination of two NP-FQ pairs.

Naito (1995) claims that contrastive focus is a crucial condition for FL and that the host noun denotation has to at least have another entity in the same 'semantic field' so that the contrastive interpretation is available. For example, the predicate *atta*, 'met', in (3.23) has a selectional restriction; namely that the referent of the *ni*-marked NP, as well as the subject NP, must be human. Hence the host noun, *hito* 'human', in (3.23a) is semantically not only redundant but also too general to have any other contrastive candidate in the semantic field evoked by the predicate because non-human entities are ruled out as eligible candidates due to the selectional restriction, which makes the sentence awkward. On the contrary, the host noun, *shitteiru-hito* 'acquaintance', in (3.23b) has a contrastive counterpart, namely *shiranai-hito* 'stranger,' in the same semantic field, which makes the sentence acceptable.

(3.23)
a * kinoo **hito**-ni go-nin atta.
yesterday person-DAT 5-CL met
'(I) met five people yesterday.' (Naito 1995: 205)

b kinoo **shitteiru-hito**-ni go-nin atta.
yesterday known-person-DAT 5-CL met
'(I) met five acquaintances yesterday.'

However, there is a serious problem with Naito's hypothesis. He claims that (3.23a) is awkward because the host noun *hito* 'person(s)' is too general. However, when the FQ is removed as in (3.24a), the sentence is also awkward as (3.23a). When the noun is modified as in (3.24b), the sentence is completely fine.[80]

(3.24)
a ? kinoo hito-ni atta.
yesterday person-DAT met
'(I) met people yesterday.'

b kinoo **kawatta** hito-ni atta.
yesterday strange person-DAT met
'(I) met a strange person yesterday.'

The same goes for direct object host nouns.[81]

(3.25)?? Taro-wa **mono**-o katta.
-TOP thing-ACC bought
'Taro bought a thing.'

Therefore, Naito's contrastive condition can be revised as a more general pragmatic condition, i.e., the host noun needs to convey some information worth mentioning, which can be accounted for by the Grician maxims. Furthermore, as Lambrecht claims (1994: 291), 'contrastiveness… is not a category of grammar but the result of the general cognitive processes referred to as

[80] If a generic interpretation is available for such unmodified nouns, the sentences may be acceptable.
(1) miti-de **hito**-ni au-to aisatu-suru.
road-at person-DAT meet-when greeting-do
'I say hello when I meet somebody on the street.'
(2) watasi-wa zibun-no heya-de hito-ni au.
I-TOP self-GEN room-at person-DAT meet
'I meet people in my own room.'

[81] When uttered out of the blue, these sentences sound relatively better than their counterpart examples in which the host NP is deleted. The awkwardness of these examples comes from the violation of the maxim of quantity1 in Grice (1975).

"conversational implicatures."'[82] Hence the contrastiveness of the host noun itself is not a sufficient condition for FL.

Although contrastiveness is, thus, not an independent grammatical category, it is still relevant to the acceptability judgment of murky FL examples as shown in (3.22b). If the host noun is marked by the particle *wa*, the contrastive meaning becomes more salient. The quantities represented by the two NP-FQ pairs have to be different as in (3.26a) and even a non-coordinated example becomes acceptable as in (3.26b).[83]

(3.26)

a Taroo-ga [eigo-ka-no sensei-ni-**wa** **hutari**] (sosite)
English-section-GEN teacher-DAT-P 2.CL (and)
[syakai-ka-no sensei-ni-**wa** **san-nin**] Hanako-o shookaisita.
social.studies-section-GEN teacher-DAT-P 3-CL -ACC introduced
'Taro introduced Hanako to two English teachers and three social studies teachers.'

b Taroo-ga [eigo-ka-no sensei-ni-**wa** hutari] Hanako-o shookaisita.
'Taro introduced Hanako to two English teachers.'

In sum, contrastiveness on the NP-FQ pair contributes to focus marking on it. Such a contrastive focus may enhance the acceptability of some FL examples; however, since contrastiveness is a relative category, it cannot be an essential condition for Q-float. I further discuss in §3.4.2 the influence of contrastive focus on the constraints on Q-float.

3.3.3 Two readings of FL

In this section, I sketch the two important readings of FL, partitive reading and distributive reading, and discuss why FL has those readings.

3.3.3.1 Partitive Reading

[82] In Japanese, it is often said that the topic marker *wa* may have a contrastive meaning (Kuno 1973); however, this distinction is not always clear-cut. As Kitahara (1981) argues, contrastiveness is a relative category, which is only available when the choice for the topical element is limited. A choice of a certain referent for the topic automatically entails that other referents have not been chosen.

[83] Note that (3.26b) is similar to (3.22b) but when the host NP is marked by *wa*, the quantities expressed by the NQs in two NP-FQ pairs cannot be the same as in (3.22b).

FL may have a partitive reading in certain contexts (Inoue 1978). (3.27a) has a partitive reading and the number of *cars* running in front of the speaker must be more than *two*. When FL has an exhaustive reading, an explicit marker is required as in (3.27b).[84]

(3.27)

a mae-o hasitteita zyooyoosya-ga ni-dai tukamatta.
front-ACC running.PST car-NOM 2-CL be.caught.PST
'Two of the cars running ahead of us were caught by police.' (Inoue 1978: 175)

b mae-o hasitteita zyooyoosya-ga ni-dai-**tomo** tukamatta.
-all
'Both of the two cars running ahead of us were caught by police.'

The following two sentences show another interesting contrast. The host noun in (3.28a) is modified by a demonstrative while the host noun in (3.28b) is not. The partitive reading is salient in the former but not in the latter (Ohki 1987: 43, Kim 1995: 226).

(3.28)

a **sono**-unagi-o san-biki katta.
that-eel-ACC 3-CL bought
'(I) bought three of those eels.'

b unagi-o san-biki katta.
'(I) bought three eels.'

These examples show that the partitive reading in FL becomes more salient when the host noun denotes a bounded set, while it is not salient when the denotation of the host noun is not bounded. Then, why do FL sentences have a partitive reading when the host noun denotation is bounded? On the contrary, is it possible for FL with a bare noun host NP to have a partitive reading?

As discussed in the previous sections, the FQ in FL denotes new information and the quantity designated by the FQ must be unpredictable in the given context. So when the host noun

[84] Pre-N has a default exhaustive reading without an explicit marker as in the following sentence.
mae-o hasitteita ni-dai-no jooyoosya-ga tukamatta.
front-ACC running.PST 2-CL-GEN car-NOM be.caught.PST
'The two cars running ahead of us were caught by police.'
It is interpreted that there are no other cars but those two or that other cars, if any, are regarded irrelevant.

denotes a bounded set, the quantity denoted by the FQ is supposed to be any quantity within the range of the quantity of the bounded set, which always implies a gap between the actual quantity denoted by the FQ and the potential quantity denoted by the host noun. This gap causes a partitive reading and FQ denotes the quantity of a subset partitioned out of the main set. FL may have an exhaustive reading when the subset exactly matches the main set. However, it is a marked case and an overt exhaustive marker on the FQ is obligatorily required as in (3.29).[85]

(3.29) sono-unagi-o san-biki-**tomo** katta.
that-eel-ACC 3-CL-all bought
'(I) bought all three of those eels.'

As long as the host NP denotes a bounded set, a partitive reading is available for FL regardless of the co-occurring predicate type. The predicate in (3.30a) is of creation, while that in (3.30b) is existential.

(3.30)
a sono-hakusen-o san-bon **kaita**.
that-white.line-ACC 3-CL drew
'I drew three of those white lines.'

b Taroo-no kurasu-no gakusei-ga san-nin kyoositu-ni **iru**.
-GEN class-GEN student-NOM 3-CL classroom-in exist
'Three of Taro's students are in the classroom.'

On the contrary, when the host noun in FL is a bare noun, a partitive reading is not likely as in (3.28b). The likelihood of a partitive reading may differ according to the type of predicate as in (3.31). The verb in (3.31a) is of 'consumption' while that in (3.31b) is of 'creation' and (3.31c) has an existential predicate. (3.31a) has a salient partitive reading while the latter two have no partitive reading.

(3.31)
a hakusen-o san-bon **kesita**.
white.line-ACC 3-CL erased
'(I) erased three white lines.'

[85] Cf. the Quantity Implicature by Grice (1975).

b hakusen-o san-bon **kaita**.
drew
'(I) drew three white lines.'

c hakusen-ga san-bon **atta**.
-NOM existed
'There were three white lines.'

Downing (1996) claims that when the host noun is a bare noun it represents a 'type' and the FQ represents the number of its instantiations.[86] The denotations of the host noun and the FQ do not have a part-whole relationship and therefore, a partitive reading is unlikely for (3.31b, c). However, when the predicate is of consumption, the host noun denotation is not simply a type. The existence of entities to be consumed needs to be assumed to exist in advance and the quantity denoted by the FQ in FL, which is new information and unpredictable, represents the quantity of actual consumption. Therefore, the host noun denotation is rather a non-bounded set whose quantity is non-specifiable; it may be relatively easy to visualize some leftover entities after the consumption although the boundaries of the set are not recognizable.

In sum, the partitive reading of FL relies on the denotation of the host noun. The numeral in the FQ represents the number of instantiations of the entities denoted by the host noun. When the host noun denotes a type, there is no set from which entities are chosen, and a partitive reading is not available. On the contrary, when the host noun denotes a set whose boundaries are

[86] The denotation of a bare noun is ambiguous in Japanese. It may mean a type, non-bounded set of entities, or an individual entity. The denotations of the noun *ringo* 'apple' can be different according to the context. In (1), it represents a type and has a generic reading. It represents a non-bounded set of *apples* in (2), and a particular *apple* or a particular set of *apples* in (3).

(1) ringo-o taberu (koto).
apple-ACC eat (thing)
'(to) eat apples'

(2) ringo-o 10-pun-**kan** taberu.
-minute-duration
'(I) eat apples for ten minutes.'

(3) ringo-o 10-pun-**de** taberu.
-minute-in
'(I) eat an apple in ten minutes.'

clearly perceived, the presence of the entities in the set is also perceivable and the FQ represents the number of the entities selected, instead of the number of the entities instantiated, in that case and a partitive reading is available.

3.3.3.2 Distributive reading and collective reading

Yazawa (1985) points out that FL examples like (3.32a) have two possible readings, i.e. a distributive reading and a 'simultaneous' reading; namely 'each student separately crossed the bridge' and 'five students simultaneously crossed the bridge' respectively. This ambiguity can be explicitly shown by adding manner adverbial expressions as in (3.32b).

(3.32)

a gakusei-ga go-nin hasi-o watatta.
student-NOM 5-CL bridge-ACC went.across
'Five students crossed the bridge.'

b gakusei-ga go-nin **isshoni** / **betubetuni** hasi-o watatta.
student-NOM 5-CL together / separately bridge-ACC went.across
'Five students crossed the bridge separately/together.'

Kitahara (1997:73) further claims that there are more possible scenarios for the interpretation of (3.32a) in terms of the actual number of events, e.g., two of the five students crossed together and the rest of them crossed separately. However, I only discuss two extreme cases here: quasi-single-event (simultaneous) reading and multiple-event (distributive) reading.[87] Gunji and Hasida (1998: 65) show that the default reading of the FQ hosted by the subject NP is distributive. FL is more likely to be associated with distributive reading compared to Pre-N as in (3.33).

(3.33) (G&H: ibid)

a gakusei-ga san-nin kabin-o motiageta. (FL)
student-NOM 3-CL vase-ACC lifted
'Three students (each) lifted a/the vase.'

b san-nin-no gakusei-ga kabin-o motiageta. (Pre-N)
3-CL-GEN

[87] Yazawa and Kitahara actually use the term 'simultaneous' instead of 'collective' for the former reading. However, since they claim that the number of event is one in the simultaneous reading, it is not clear whether they distinguish it from collective reading. See Landman (1996) for further discussions about the plurality of events and individuals.

'Three students lifted a/the vase (together).'

The default reading of the FL example (3.33a) is the distributive reading, 'each of them lifted a different vase (or the same vase),' while the Pre-N example (3.33b) is likely to have the collective reading, 'students lifted a/the vase together,' as well as the distributive reading. The following examples further show a sharp contrast between FL and Pre-N with respect to those readings.

(3.34) G&H (ibid: 66)

a (kinoo) tomodati-ga hutari kekkonsita. (FL)
(yesterday) friend-NOM 2.CL got.married
'Two friends got married (yesterday).'

b hutari-no tomodati-ga kekkonsita. (Pre-N)
2.CL-GEN
'Two friends got married (separately/to each other).'

In (3.34a), the FL example exclusively has a distributive reading and it is impossible to have the interpretation that '*two friends married each other*.' Even when the sentence is modified by a temporal adverb such as *kinoo* 'yesterday', it is still interpreted as two separate events that accidentally took place on the same day. On the contrary, either reading is available for the Pre-N example (3.34b). If *kinoo* 'yesterday' is inserted in (3.34b), the collective reading becomes more likely.

The distributive reading in FL is not limited to subject host NPs. A similar restriction is found with direct object host NPs. (3.35a) with the past tense predicate is acceptable while (3.35b) with the progressive predicate is not. Here again FL requires a distributive reading, therefore, the *steak* must be eaten individually, one by one. With past tense predicates, such an interpretation is possible and it matches our world knowledge concerning how we eat *steaks*. On the contrary, when the predicate is progressive, the aspectual restriction forces us to have a collective reading that the *three steaks* are eaten simultaneously by the same person; however,

this interpretation is not compatible with our world knowledge. Therefore (3.35b) is unacceptable.[88]

(3.35)
a gakusei-ga suteeki-o san-mai tabeta.
student-NOM steak-ACC 3-CL ate
'A student ate three steaks.'

b ? gakusei-ga suteeki-o san-mai tabeteiru.[89]
eat.PRG
'A student is eating three steaks.'

Note that (3.35b) becomes acceptable when adverbs like *ippenni* 'at the same time' are inserted and each of the entities in question is involved in the on-going action.

(3.36) gakusei-ga suteeki-o san-mai **ippenni** tabeteiru.
simultaneously
'A student is eating three steaks at the same time.'

When the host noun is a mass noun, accumulative reading is likely.[90]

(3.37)
a gakusei-ga **biiru**-o iti-rittoru nonda.
student-NOM beer-ACC 1-liter drank
'A student drank (a total of) one liter of beer.'

b ?? gakusei-ga **biiru**-o iti-rittoru nondeiru.
drink.PRG
'A student is drinking (a total of) one liter of beer.'

---

[88] The sentence may be acceptable, if it is interpreted as an on-going **single** event of eating of three steaks. For this interpretation, the three steaks must have been served in advance. The adverbial expression *iti-mai zutu* 'one by one' can be inserted at the immediately pre-verbal position as in (1) and the sentence is perfectly fine.

(1) gakusei-ga suteeki-o san-mai **iti-mai zutu** tabeteiru.
student-NOM steak-ACC 3-CL one-CL apiece eat.PRG
'A student is eating three steaks one by one.'

However, if the adverbial is inserted at the position preceding the FQ as in (2), it seems that the pre-served interpretation is not very likely for (2) and the sentence is not acceptable.

(2) ?? gakusei-ga suteeki-o **iti-mai zutu** san-mai tabeteiru.
'A student is eating three steaks one by one.'

[89] If the verb is interpreted as 'resultative,' instead of 'progressive,' the sentence is perfectly acceptable. When resultative, an accumulative reading is available. The same goes for the judgment of (3.37b).

[90] (3.37b) may be acceptable when the denotation of the NP-FQ pair has a single reading, i.e. the beer which is about to be drunk up is in a one-liter container. However, the single reading is more closely linked to Pre-N, and not likely with FL.

These examples also show that the default reading of FL is distributive. Even when FL seems to have a collective reading as in (3.36), all the individual events are just happening simultaneously but independently from each other. In this sense the simultaneous reading is a subtype of distributive reading and not equal to collective reading. On the contrary in Pre-N, both collective and distributive readings are available when it has a specific reading, while only a collective reading is available when it has a single reading. I will further discuss the contrast between distributive and collective readings in the NQ constructions in Chapter 5.

3.3.4 Subject-Object asymmetry in FL

Many studies show that the eligibility of NPs to host an FQ differs according to their grammatical roles (Haig 1981; Downing 1993). They claim that when there are two competitive candidates for the host NP of an FQ, the NP with the 'patient' semantic role usually wins the competition and the agentive NP is less likely to host the FQ, which is illustrated in (3.38). In (3.38a) the FQ is immediately preceded by the subject NP and followed by the object NP, while in (3.38b) the FQ is immediately preceded by the object NP and followed by the subject NP. The object NP does not have to immediately precede the FQ to host it, while the subject NP does.

(3.38)

a gakusei-ga **san-nin** kodomo-o nagutta.
student-NOM 3-CL child-ACC punched
Likely: 'A student punched three children.'
Equally likely: 'Three students punched children.'

b kodomo-o **san-nin** gakusei-ga nagutta.
Likely: 'A student punched three children.'
Unlikely: 'Three students punched children.'

The host NP and FQ are usually adjacent to each other as in most FL examples in the data.[91] However, the adjacency of the NP-FQ pair is not a necessary condition for FL. Another syntactic element can intervene between the host NP and FQ as in (3.39).

(3.39) gakusei-o **eki-de** san-nin mikaketa.
student-ACC station-at 3-CL saw
'I saw three students at the station.'

When the FQ is not adjacent to the target host NP, the object NP can host the FQ as in (3.40b), while the subject NP cannot.

(3.40)
a gakusei-ga kodomo-o **san-nin** nagutta.
student-NOM child-ACC 3-CL punched
'A student punched three children.'
(Impossible: 'Three students punched children.')

b kodomo-o gakusei-ga **san-nin** nagutta.
Likely: 'Three students punched children.'
Equally likely: 'A student punched three children.'

FL examples in which the FQ is not adjacent to its subject host NP are mostly unacceptable when the NP-FQ pair is separated by the object NP (Kuroda 1980; Haig 1980; Miyagawa 1989). (3.41a) is perfectly fine, while (3.41b), in which the direct object intervenes between the host NP and the FQ, is not acceptable.

(3.41)
a gakusei-ga **san-nin** hon-o yonda.
student-NOM 3-CL book-ACC read

b */?? gakusei-ga **hon-o** san-nin yonda.
Both: 'Three students read books.'

When an FQ occurs at the initial position, the FQ and its host NP may not be adjacent as in (3.42).

(3.42) **san-nin** eki-de gakusei-o mikaketa.

[91] In my text-count data, 33 FL examples out of 39 (84.6%), and 8 fronted NQ examples out of 9 (88.9%) have an adjacent NP-FQ pair.

3-CL station-at student-ACC saw
'I saw three students at the station.'

Both Miyagawa (1989) and Kim (1995) consider this type as a variation of FL. When the host NP is direct object, there are few restrictions on fronting of the FQ.

(3.43)
a gakusei-ga biiru-o san-bon nonda.
student-NOM beer-ACC 3-CL drank

b **san-bon** gakusei-ga biiru-o nonda.
Both: 'A student drank three beers.'

On the other hand, when the host NP is a transitive subject, there are some restrictions. In (3.44c) the scrambled direct object intervenes between the fronted FQ and the subject host NP and this sentence is as unacceptable like (3.41b).

(3.44)
a gakusei-ga **san-nin** tegami-o kaita.
student-NOM 3-CL letter-ACC wrote

b **san-nin** gakusei-ga tegami-o kaita.

c ??/* san-nin **tegami-o** gakusei-ga kaita
All: 'Three students wrote letters.'

The unacceptability of (3.44c) can be accounted for by the non-adjacency caused by the intervening direct object.[92]

[92] Miyagawa (ibid: 51) argues that a subject-oriented NQ cannot be scrambled to the initial non-adjacent position. However, this generalization is too strict. When the intervening direct object is a definite entity, this word order is acceptable.
(1) san-nin **sono-hon-o** gakuseitati-ga katteitta.
3-CL that-book-ACC student-NOM
'Three students bought the book and left.' (Fukushima 1991: 53)
Furthermore, Miyagawa argues that this kind of non-adjacency restriction is also relevant to intransitive agentive subjects, but irrelevant to patient subjects as shown in (2). However, his judgment is questionable because (2a) is also acceptable as (2b).
(2)a * kodomo-ga **geragerato** hutari waratta.
child-NOM loudly 2CL laughed
'Two children laughed loudly.' (Miyagawa 1989: 44)
b ringo-ga **potopototo** san-ko otita.
apple-NOM (dropping) 3-CL fell
'Three apples fell one after another.'

This kind of asymmetric patterns is found in many other languages that have Q-float constructions (Korean, Pima, Tzotsil, etc.). There are language-specific differences in eligibility of dative NP hosts, but the general tendency can be summarized as in (3.45).

(3.45) NP's eligibility to host an FQ in terms of its grammatical role.

(transitive sentence): DO > St (> IO)
(intransitive sentence): Si > IO

This set of eligibility hierarchies shows an 'absolutive pattern,' in which direct object (DO) and intransitive subject (Si) on one hand behave the same way against transitive subject (St) on the other (Downing 1993). These hierarchies are also relevant to the actual distribution pattern of FL examples in her data. Technically, St can host an FQ; however such examples are extremely few and barely found. Most FL examples in Downing's data have an absolutive host NP. Semantically, the quantity denoted by the FQ hosted by DO or Si and the quantity denoted by the FQ hosted by St are different. The former represents the amount of job done (the size of the event) and the latter represents the number of participants in the job (Kitahara 1997, G&H 1998). In terms of information structure, DO and Si usually encode new information while St encodes old information (Du Bois 1987). Therefore, a focal element is more likely to host an FQ than a non-focal element, which coincides with the argument in Ohki (1987) and Shimojo (2004). Indirect objects (IO) such as dative NPs may host FQs but its distribution is more limited than that of St and FL examples with IO host NPs are hardly found in text data. The distribution of FL examples shows a clear absolutive pattern and it is motivated by the semantics of absolutives and their roles in information structure.

3.4 Constraints on Q-float

As shown in 3.2, the distribution of FL is quite limited. The constraints on Q-Float have been one of the major topics in Japanese linguistics and quite a few studies have been conducted. FQs

measure different aspects of events mainly according to whether their host NPs are subject or object: a transitive subject FQ merely represents the number of participants (agents) in the events, while a direct object FQ represents the amount of job done in the events. However, as long as they share the same constructional template, there should be some common properties shared by both cases. In this section, I first look through the major preceding studies on Q-float that are classified into three groups according to their approaches; i.e., syntactic, semantic, and pragmatic approaches. I discuss what kinds of factors are involved in the constraints and present my own hypothesis at the end.

3.4.1 Syntactic approaches

At the early stage of the research, Q-Float was considered as a purely syntactic phenomenon. As shown in 3.2, the distribution of FL is so limited that only the nominative and accusative NPs are generally allowed to host FQs. Okutsu (1969) claims that grammatical relations play a crucial role in the constraints and that the host NP of an FQ must be either subject or object, which is generally marked by the nominative or accusative case. He argues that the following example in which the dative NP hosts the FQ *hutari* supports this hypothesis because the dative NP is considered as the subject of the embedded verb *kaite* 'write.'

(3.46) Taro-wa [sensei-**ni** hutari suisenzyoo-o kaite]-moratta.
-TOP teacher-DAT 2.CL recommendation.letter-ACC write-received
'Taro had two teachers write recommendation letters for him.'

Shibatani (1978: 800) rejects the above grammatical relation hypothesis because virtual subjects are not always eligible for Q-float. The dative NP in (3.47a), which is considered to be the subject of the sentence, cannot host the FQ and only the nominative one (3.47b) is acceptable.

(3.47)
a * korerano gakusei-**ni** san-nin furansugo-ga wakarimasu.
these-GEN student-**DAT** 3-CL French-NOM understand
b korera-no gakusei-**ga** san-nin furansugo-ga wakarimasu.

these-GEN student-**NOM** 3-CL French-NOM understand
Both: 'These three students understand French.'

He introduces two tests, 'reflexivization' and 'subject honorification,' to define the subjecthood of dative NPs. The dative NP in (3.47a) passes these syntactic tests; it can be the antecedent of the reflexive *zibun* as in (3.48a) and it may have a subject-honorific predicate as in (3.48b).

(3.48)
a sensei-**ni** zibun-ga wakara-nai.
teacher-DAT self-NOM understand-NEG
'The teacher does not understand him-/her-self.'

b sensei-**ni** eigo-ga owakarininaru.
teacher-DAT English-NOM understand (honorific)
'The teacher understands English.'

Therefore, the above dative NPs are supposed to be considered as virtual syntactic subjects; however they cannot host FQs, which contradicts Okutsu's hypothesis. On the contrary, the subject in (3.47b), which is marked by the nominative case, can host the FQ. Hence Shibatani argues that Q-float is only allowed for NPs marked by either nominative or accusative case.

However, Shibatani's surface-case hypothesis is too strict to account for acceptable FL examples with dative host NP such as (3.49).[93]

(3.49) watasi-wa dantaikyaku-o tomeru yadoya-**ni** ni-san-gen atatte-mita.
I-TOP group.guest-ACC let.stay inn-**DAT** 2-3-CL inquire-tried
'I inquired at two or three inns that let group guests stay.' (Inoue 1978: 176)

Furthermore, not all nominative and accusative NPs can freely host an FQ. In (3.50a) the direct object intervenes between the nominative host NP and the FQ and blocks their proper association. In (3.50b) the host NP is accusative but the sentence is unacceptable.

(3.50)
a ?* gakusei-ga **hon-o** yo-nin katta.

[93] Inoue (1978) assumes that the recipient NP of a ditransitive predicate and the non-subject NP of an intransitive predicate should be differentiated even though they are both marked by the same case-marker *-ni*. She claims that the latter type of NP functions like a direct object and allows Q-float. However, Inoue's claim is rather ad hoc because some recipient NPs may host FQs and not all non-subject NPs are eligible to host FQs.

student-NOM book-ACC 4-CL bought
'Four students bought books.' (Miyagawa 1989: 21)

b ?* Taro-wa gakusei-o **hutari** sinziteiru.
-TOP student-ACC 2.CL believe
'Taro believes two students.'

Miyagawa (1989) argues that direct objects and unaccusative intransitive subjects are less restricted to host an FQ than transitive subjects and unergative intransitive subjects.[94] He proposes a configurational constraint on FL, namely that the host NP (antecedent) and its FQ (predicate) must c-command each other throughout the derivation of the sentence (ibid: 70). However, his hypothesis has critical counterexamples like (3.51). Syntactically, neither of the host NPs can c-command the FQ due to the PP node. Therefore both are expected to be ungrammatical, but (3.51b) is acceptable. (Katagiri 1991)

(3.51)

a * hito-ga **mura-kara** hutatu kita.
person-NOM village-from 2.CL came
'People came from two villages.'

b watasi-wa kyoo **nomiya-e** ni-ken itta.
I-TOP today bar-to 2-CL went
'I went to two bars today.'

In sum, these purely syntactic approaches can account for most FL examples. Therefore, there should be some structural basis in the constraints on the distribution of FL. However, these approaches encounter quite a few counterexamples. There need to be further constraints to account for such exceptions.

3.4.2 Semantic Approaches

[94] The former group of direct objects and unaccusative intransitive subjects are classified as 'Patient' and the latter group of transitive subjects and unergative intransitive subjects as 'Agent' in other literature.

Some semantic approaches are also taken to deal with the issues. In this section I will discuss the three semantic approaches taken in Miyagawa (1989), Mihara (1998), and Gunji & Hasida (1998) respectively.

3.4.2.1 Affected theme

Since he finds that a purely syntactic approach cannot fully account for the constraints on Q-float, Miyagawa (1989) himself also takes a semantic factor '(affected) theme' into account. He assumes that only an affected theme NP can allow its FQ to move leaving a trace that holds a valid mutual c-command relation with the host NP and argues that only thematic direct objects can host an FQ as in (3.52) while non-theme direct objects cannot host an FQ as in (3.53) (ibid: 60). He uses the '*-te aru*' (intransitivizing resultative) construction to test whether the direct object is an affected theme (ibid: 61). Miyagawa argues that if the transitive sentence is not paraphrasable to the *tearu* construction the direct object is not a theme and therefore cannot host an FQ.

(3.52)

a Taroo-ga onigiri-o san-ko tukutta.
-NOM rice.ball-ACC 3-CL made
'Taro made three rice balls.'

b onigiri-ga tukut**tearu**.
rice.ball-NOM made.RSLT
'Rice balls have been made.'

(3.53)

a * Taroo-ga gakusei-o san-nin aisiteiru.
-NOM student-ACC 3-CL love
'Taro loves three students.'

b * gakusei-ga aisi**tearu**
student-NOM love.RSLT
'Students have been loved.'

However, there are some counterexamples against this prediction (Takami 1998b: 88).[95]

(3.54)

a san-nin, gakusei-ga sono-sensei-ni nagurareta.
3-CL student-NOM that-teacher-by hit.PAS.PST
'Three students were hit by the teacher.'

b * (sono-) gakusei-ga nagut**tearu**.
that- student-NOM hit.RSLT
'The student is hit.'

Thus the *tearu* test can not appropriately predict the acceptability of FL examples. Generally only telic verbs pass the *tearu* test since the *tearu* construction means the persistence of a change of state. However, the subject NP in some stative sentences can also host an FQ as in (3.55).

(3.55)

a gakusei-ga san-nin byooki-da.
student-NOM 3-CL sick-COP
'Three students are sick.'

b gakusei-ga san-nin iru.
student-NOM 3-CL exist
'There are three students.'

Therefore, this test is too strict to predict the plausibility of FL examples.

3.4.2.2 Aspectual delimitedness

Mihara (1998) argues that a resultative interpretation is a necessary condition for FL with an object host NP. He claims that the event denoted by the proposition must be 'aspectually delimited' by the context to have a Q-float. He classifies transitive verbs into four subtypes as in (3.56) according to the degree of affectedness, i.e. how the denotation of the direct object is physically (or in terms of the state or location) changed in the event described by the sentence. When the verb means that the denotation of the direct object is strongly affected as in (3.56a) or weakly affectedness as in (3.56b), the direct object NP is allowed to host an FQ. On the contrary,

[95] The *tearu* construction is compatible with Mihara (1998)'s 'strong affected verbs,' but not with his 'weakly affected verbs.' (cf. 3.4.2.2)

when the denotation of the direct object is totally unaffected as in (3.56c) or is interpreted as rather a stimulus of psychological activity as in (3.56d), the direct object is not allowed to host an FQ.[96] The host NPs are all direct objects in these examples; however only (3.56a) and (3.56b) are acceptable and (3.56c) and (3.56d) are unacceptable.

(3.56) (Mihara 1998a: 90-1)

a kodomo-ga omocha-o hutatu kowasita.
child-NOM toy-ACC 2.CL broke
'A child broke two toys.'

b kare-wa Yoshimoto Banana-no shoosetu-o toshokan-de ni-satu yonda.
he-TOP -GEN novel-ACC library-at 2-CL read
'He read two Yoshimoto Banana's novels at the library.'

c ? boku-wa yuuzin-o ekimae-de hutari matta.
I-TOP friend-ACC station.front-at 2.CL waited
'I waited for two friends at the front of the station.'

d * watasi-wa dooryoo-o honkide hutari utagatta.
I-TOP colleague-ACC seriously 2.CL distrusted
'I really distrusted two colleagues.'

Mihara argues that the difference in acceptability of these FL examples is due to the telicity of the verbs. The described events in the acceptable examples are 'aspectually delimited' and the verbs are interpreted as telic. The FQ denotes the amount of the result of the activity. On the contrary, the events in the unacceptable examples are not aspectually delimited; therefore the verbs cannot be interpreted as telic and the FQ cannot represent a result of the event. He further claims that the 'aspectual delimitedness by context' is required when a subject NP hosts an FQ. He claims that (3.57b) is better than (3.57a) because the activity is a temporally delimited by the temporal PP, *heikan-made* 'until the closing time.'[97]

(3.57)

a ?? gakusei-ga toshokan-de sanzyuu-nin benkyoosita.
student-NOM library-at 30-CL studied

[96] Mihara calls these four subtypes of verbs 'strongly affected verb', 'weakly affected verb', 'unaffected verb', and 'anti-affected verb' respectively. Translations of these terms are mine.

[97] Although Mihara uses a more precise sentence for the counterpart example for (3.57b), I simplified it as in (3.57b) in order to remove other factors' influence on the judgment. Mihara put '??' to (3.57a), but I would put a '(?)'.

'Thirty students studied at the library.' (Mihara 1998c: 106)

b **heikan-made** gakusei-ga toshokan-de sanzyuu-nin benkyoosita.
closing-until
'Thirty students studied at the library until the closing time.'

It is true that most FL examples are associated with telic verbs. Even if it is the case, however, it is not clearly stated why such association is required of FL. However, as shown in (3.55), some stative predicates are also compatible with Q-float. So his analysis has the same problem as Miyagawa's analysis.

Furthermore, Mihara admits that when the FQs in unacceptable FL sentences are marked by exhaustive markers such as *tomo* 'all' or focus particles such as *sika* 'only' those sentences may be acceptable as in (3.58).

(3.58)

a ? koochoosensei-wa seito-o choorei-de hutari hometa.
principal-TOP pupil-ACC morning.assembly-at 2.CL praised
'The principal praised two pupils at the morning assembly.' (1998a: 90)

b koochoosensei-wa seito-o choorei-de hutari-**tomo** hometa.
2.CL-all
'The principal praised both two pupils at the morning assembly.' (1998c: 105)

However, he does not further explain why the focus particles can change the acceptability of FL. In addition, his account cannot account for the FL with existential predicates like (3.55b).

3.4.2.3 Incremental theme

Gunji and Hasida (1998) deal with the subject-object asymmetry in the FL construction and discuss the phenomenon with respect to the following two points: transitive subjects are 1) more restricted than direct objects in terms of the eligibility to host an FQ, and 2) in terms of word order.[98]

[98] They also discuss the issue of transitive subject NQs having a wider scope than direct object NQs. I will discuss scope issues in general in Chapter 5.

As for the first point, they claim that 'an [FQ] can only be attributed to an argument that bears the incremental theme role' (ibid: 74). The notion of incremental theme is taken from Dowty (1991: 572) in which it is defined as one of the major entailments of the *proto-patient* role. He claims that 'the meaning of a telic predicate is a 'homomorphism' from its (structured) theme argument denotations into a (structured) domain of events' (ibid: 567). Thus an incremental theme can measure the size of the event. G&H introduce the following *donokurai* 'how many/much' test to check the incrementality of an argument.

(3.59) (G&H: 62, (3.53)-(3.55))
a – donokurai gakusei-ga kita-no?
how.many/much student-NOM came-Q
'How many students came?' / * 'How much did the student(s) come?'
– san-nin.
3-CL
'Three students.'

b – dono kurai gakusei-ga waratta-no?
how.many/much student-NOM laughed-Q
*'How many students laughed?' / 'How much did the student(s) laugh?'

– *san-nin. / sinuhodo.
3-CL to.death
*'Three students.' / 'To death.'

c – donokurai gukusei-ga sake-o nonda-no?
how.many/much student-NOM sake-ACC drank-Q
*'How many students drank sake?'/ 'How much sake did the student(s) drink?'

– *san-nin. / san-bon.
3-CL(person) 3-CL(bottle)
*'Three students.' / 'Three bottles.'

As shown in (3.59b) and (3.59c), the subject NPs cannot be interpreted as an incremental theme. 'A question involving size of the event can be adequately answered in terms of the quantity of the incremental theme involved' (ibid: 61). However this test is not always straightforward. They claim that the subject of the following sentence is the incremental theme based on the test.

(3.60)
a Ameriakazin-ga Nihon-o sanman-nin otozureta.

American-NOM Japan-ACC 30,000-CL visited
'Thirty thousand Americans visited Japan.'

b – donokurai Ameriakazin-ga Nihon-o otozureta-no?
how.many/much American-NOM Japan-ACC visited-Q
'How many Americans visited Japan?'
– sanman-nin.
30,000-CL
'Thirty thousand.'

However, the same predicate may show different results. Both subject and direct object can be the host NP in (3.61) and the answer can be ambiguous.[99]

(3.61) – donokurai gakusei-ga Nihon-no tosi-o otozureta-no?
how.many/much student-NOM Japan-GEN city-ACC visited-Q
'How many students visited a city/cities in Japan?'/ 'How many cities in Japan did the student(s) visited?'

– san-nin. / san-tosi.
3-CL(person) 3-CL(city)
'Three students.' / 'Three cities.'

When the direct object is definite, the agentive subject is more likely to be an answer to the question as in (3.62).

(3.62) – donokurai gakusei-ga sono-sake-o nonda-no?
how.many/much student-NOM that-sake-ACC drank-Q
'How many students drank that sake?' / 'How much of that sake did the student(s) drink?'

– san-nin(person). / san-bai(cup) .
3-CL 3-CL
'Three students.' / 'Three cups.'

Note that the direct object is still measurable and can be an answer to the same question. Furthermore, FL is compatible not only with telic predicates but also with some stative

[99] G&H (ibid: 56) claim that the subject of the following sentence can bear the semantic role of theme.
sensei-ga gakusei-o san-nin matteiru.
teacher-NOM student-ACC 3-CL wait.PROG
'The teacher(s) is (are) waiting for three students.
Unlikely: 'Three teachers are waiting for the student(s).'
However, neither of the subject or the direct object is an incremental theme since the most likely answer to the *donokurai* question for this sentence is the duration of waiting, e.g., 'For 30 minutes.'

predicates as in (3.56). G&H (ibid: 59) also admit that the notion of incremental theme has to be extended in order to account for such examples.

Thus these examples show that this test actually checks what is most likely to be measured in the given context instead of what is the 'incremental theme.' Although this notion is originally linked to the Proto-Patient role, it may be possible to extend the notion to non-patient NPs. Strictly speaking, there is a mismatch between this term and the Q-float condition because the semantic role of a host NP is not always patient. As shown above, when all the arguments are measurable, the default priority goes to the patient NP, if any.

Second, G&H (1998) claim that the acceptability of non-adjacent FL depends on whether the intervening element is 'measurable' or not. When indefinite direct objects are not specified in quantity, they are measurable and may block the non-adjacent FQ to be properly associated with the subject host NP as in (3.63a). On the other hand, definite direct objects are specified with its amount by default and no longer measurable, therefore it does not block the association between the FQ and its host NP as in (3.63b).

(3.63)

a * gakusei-ga sake-o san-nin nonda.
student-NOM sake-ACC 3-CL drank
Intended: 'Three students drank sake.'

b gakusei-ga sono-sake-o san-nin nonda.
that-
'Three students drank the sake.'

However, even when the host noun is marked by a demonstrative and refers to a specific entity, it can host an FQ as long as it is interpreted as a mass or a set of homogeneous entities as in (3.64).

(3.64)

a gakusei-ga sono-sake-o **san-bai** nonda.
student-NOM that-sake-ACC 3-CL(cup) drank
'A student drank three cups of that sake.''

b gakusei-ga sono-sake-o **san-bon** nonda.
3-CL(bottle)
'A student/students drank three bottles of those sake/of that sake.'

Third, G&H propose the following two conditions in order to account for the asymmetry of subject FQ and object FQ in word order and the constraints on the word order of the subject FQ in FL.

(3.65) (ibid: 71)
a Coercion: Coerced quantification caused by an adverbial measurement.
b Intervention: Intervention of an adverbially measurable NP in an NP-MP pair.

They claim that only incremental theme is 'measurable' in a strict sense because an FQ associated with a subject host NP merely represents the number of participants (agents) in events, which only indirectly measures events (amount of job done). G&H (ibid: 64) use the term 'quantification (coerced measurement)' for the latter type and distinguish it from 'measurement.' They further introduce the notion of 'cost,' which is a cumulative value to decide the acceptability of an FL sentence, and they claim that the simultaneous violation of these two conditions in (3.65) makes the cost go beyond the threshold level and eventually the examples like (3.63a) are judged unacceptable (ibid: 72).

An interesting point in their claim is that the cost is decided in an 'autonomous' process, which is independent of general semantic or pragmatic inferences. This autonomy includes not only syntax but also 'hard-wired' semantics consisting of semantic factors such as incrementality, quantification, and measurability (ibid: 74). However, as shown in the preceding sections, incremental theme is not always invariably decided. Passing the *donokurai* test does not guarantee the incrementality of the argument. Rather the test checks what element in the clause is most likely to be measured in the context, which is substantially relevant to pragmatics because

such information is often new and focused. Actually, they also discuss how contrastiveness is relevant to the acceptability judgment of FL examples.

(3.66) MP in contrastive context: A contrastive adverbial whose semantic scope contains an MP can increase acceptability. (ibid: 57)

The acceptability of (3.63a) can be drastically improved when adverbials or adjuncts that evoke some kind of contrast in the context as in (3.67).

(3.67) (G&H: 57 (3.39a,c))

a gaukusei-ga sake-o **imamadeni** san-nin nonda.
student-NOM sake-ACC so.far 3-CL drank
'Three students drank sake so far.'

b gaukusei-ga sake-o **kono-mise-de-wa** san-nin nonda.
this-shop-at-CNTR
'Three students drank sake in this shop.'

They argue that the acceptability is enhanced due to a stored mental table like below. Thanks to the lists in the table, the contrastive adverbial puts focus on the MP and prevents the predominant accusative object to block the association with the FQ.

(3.68) Stored mental tables (ibid: 57 (3.41))

a <u>(temporal contrast)</u>
imamadeni (so far) vs korekara (from now on)

b <u>(spatial contrast)</u>
kono-mise-de (in this shop) vs hoka-no mise-de (in other shops)

When contrastive interpretations are available for an entity, it is likely that there is something that is contrasted with the entity. This is a quite pragmatic phenomenon and it is not clear how this is associated with the 'autonomous' process of the calculation of cost. In addition, they claim that contrastiveness blocks the wrong but predominant association between the FQ and the direct object, but it is not certain why it needs to be so because when the FQ in (3.67) is replaced by an object-oriented FQ, e.g., *san-bai* 'three cups,' the association between the direct object host NP and the FQ is perfectly available and contrastiveness is still intact.

(3.69)

a gaukusei-ga sake-o imamadeni **san-bai** nonda.
student-NOM sake-ACC so.far 3-CL drank
'A student drank three cups of sake so far.'

b gaukusei-ga sake-o kono-mise-de-wa **san-bai** nonda.
this-shop-at-CNTR
'A student drank three cups of sake in this shop.'

G&H claim that the incremental theme constraint is a semantic condition; however, as they admit, pragmatic factors are also involved. The measurability itself may be considered as a semantic concept; however its application is heavily affected by the context.

Thus, although these semantic approaches point out important factors relevant to the constraints on Q-float, Q-float seems to go beyond the range of a purely semantic phenomenon. As shown in 3.3, one of the major functions of FL is coding unpredictable quantitative information and such information is in focus by default. Hence Q-float is closely related to information structure and taking pragmatic factors into account is inevitable for the discussion on the constraints on Q-float.

3.4.2.4 Topicalization eligibility of host noun

In this section I examine a Q-float constraint proposed by Takami (1998b) and reinterpret the relevant examples from a different functional perspective. Takami claims that the eligibility of an NP being a sentence topic and the eligibility of an NP hosting a floating quantifier are both relevant. As shown in (3.70), not every NP can host an FQ (host NPs are underlined).

(3.70)

a gakusei-ga kami-de hikooki-o tukutta.
student-NOM paper-with plane-ACC made
'A student made a plane with paper.'

b <u>gakusei-ga</u> **san-nin** kami-de hikooki-o tukutta.
3-CL(human)
'Three students made planes with paper.'

c * gakusei-ga <u>kami-de</u> **san-mai** hikooki-o tsukutta.
3-CL(flat)

'A student made a plane with three pieces of paper.'

d gakusei-ga kami-de hikooki-o **mittu** tsukutta.
3.CL(general)
'A student made three planes with paper.'

He points out that a parallel relationship in terms of acceptability is found when the host NP is topicalized. The sentences in (3.71) are created from their counterparts in (3.70) by topicalization of the host NP and these pairs of two different sentence types are given the same acceptability judgment.

(3.71)

a gakusei-**wa** kami-de hikooki-o tukutta.
student-TOP paper-with airplane-ACC made
'As for the student, s/he made a plane.'

b * kami-**wa** gakusei-ga hikooki-o tukutta.
* 'As for the paper, a student made a plane'

c hikooki-**wa** gakusei-ga kami-de tukutta.
'As for the airplane, a student made it with paper.'

Takami argues that this is because the host noun and the FQ have a topic-comment relationship. Therefore the host NP functions as a topic for both the FQ and the VP. Based on this association, he introduces the following constraint.

(3.72) Functionalist constraint on Quantifier Floating (ibid: 93)[100]
An NP in a sentence allows quantifier floating if it can function as a topic of the sentence.

This constraint correctly predicts the unacceptability of (3.71b) since the ingredient NP marked by *-de* cannot be topicalized as in (3.71b). Takami claims that this correlation reflects the functional relationship between FQs and their host NPs, which is that an FQ behaves like a secondary predicate for the topical element in the sentence.

(3.73) (Takami 1998b: 93)

a gakusei-wa **hadakade** odotta.
student-TOP naked danced

[100] This constraint is exactly opposite of Ohki (1987)'s hypothesis in that Ohki claims that the host NP must be a potentially focal element. See 3.4.3 for details. (Translation is mine.)

'The student danced naked.'

b gakusei-wa **san-nin** odotta.
3-CL
'Three students danced.'

The primary predicate for the topic NP is the verb predicate ('*the student danced*') and the manner adverb is interpreted as its secondary predicate ('*the student be naked*'). The same goes for (3.73b) and the FQ is interpreted as the secondary predicate for the topic NP ('*(the number of) students be three*').

However, it is not clear why we have this kind of correlation between the two different syntactic constructions. When topicalizing an argument NP, the case marker is obligatorily dropped as in (3.71a) and (3.71c), whereas adjunct NPs can also be topicalized if the case marker is not omitted.

(3.74) kami-**de**-wa gakusei-ga hikooki-o tukutta.
paper-with-TOP student-NOM airplane-ACC made
'With the paper, a student made a plane'

As pointed out in Shimojo (2004), Takami's constraint itself does not account for the absolutive pattern or the subject-object asymmetry in Q-float.[101] Subject and direct object are supposed to be equally eligible for hosting an FQ. Therefore, I would rather interpret his test in terms of argumenthood of the NP. In other words, what is actually tested in (3.71) is not 'topicalization eligibility', but whether the semantic relationship between the host NP and the predicate is recoverable, i.e., the omittability of the case marker of the host NP.

(3.75)
a gakusei tukutta-yo.
student made-P
'Students made (something).'

b * kami tukutta-yo.

[101] Shimojo (2004) argues the eligibility of host NP in Q-float in terms of focus of attention. He claims that Takami's hypothesis is based on 'aboutness-relationship' between the given NP and the predicate, which is evoked by the semantic frame of the predicate.

paper
Intended: '(somebody) made (something) with paper.'

c hikooki tukutta-yo.
airplane
'(somebody) made planes.'

In (3.75), the non-case-marked NP is properly interpreted as agent in (3.75a) and as patient in (3.75c), but the instrumental role is not recoverable if omitted as in (3.75b).[102] FQs need to be properly interpreted in terms of the semantic relation with their predicates. This acceptability judgment is exactly parallel to the one in which all the elements except the FQ and the predicate in FL are omitted as in (3.76).[103]

(3.76)

a **san-nin** tukutta-yo.
3-CL(human) made-P
Possible: '(I) made three people.' (Patient)
Likely: 'Three people made (something).' (Agent)

b **san-mai** tukutta-yo.
3-CL(flat)
Likely: ' (I) made three flat objects.' (Patient)
Impossible: '(I) made (something) with three flat objects.' (Instrumental)

c **mittu** tukutta-yo.
3.CL(general)
Likely: ' (I) made three objects.' (Patient)
Impossible: 'Three things made (something).' (Agent)

The correlation of the acceptability between (3.70) and (3.76) shows that FQ needs to be directly linked to the predicate for proper semantic interpretation. If the semantic association between the FQ and the predicate is not available, the FQ is not interpretable and the sentence is unacceptable. The eligibility of NP to host an FQ can be tested by whether the NP can maintain the semantic relation with the predicate without being case-marked. This is exactly the same condition applied to FQ for its interpretation. Hence, I revise Takami's constraint as follows, which automatically

[102] It should be noted that when the agent and patient roles are reversible, the agent interpretation may be blocked by the patient interpretation.
[103] This type of NQ construction, in which a non-case-marked NQ appears independently, will be discussed in 3.5.1.

rules out Adjunct host NPs.[104] This condition is motivated by the morphosyntactic property of FQ. FQs are not case-marked, but their semantic relationships with the co-occurring predicates have to be properly interpreted. I call this process 'semantic recovery of FQ.'

(3.77) An NP allows Q-float, if its semantic role, which is subcategorized by the predicate, is recoverable even without being explicitly case-marked.

Even if the semantic role of an NP is subcategorized by the predicate, when there are competitors in the same clause, the intended semantic relationship may not be recoverable. FL with an indirect object marked by the dative marker is often unacceptable as in (3.78a), because the recipient role is not fully recoverable due to the other prospective semantic roles as in (3.78c).

(3.78)

a ?? Taroo-ga gakusei-ni **san-nin** Hanako-o shookaisita-yo.
-NOM student-DAT 3-CL -ACC introduced-P
'Taro introduced Hanako to three students.'

b gakusei shookaisita-yo.
Most Likely: '(I) introduced students (to someone).' (Patient)
Unlikely: '(I) introduced (someone) to students.' (Recipient)
Unlikely: 'Students introduced (someone to someone)' (Agent)

c **san-nin** shookaisita-yo.
Most Likely: '(I) introduced three people (to someone).' (Patient)
Unlikely: '(I) introduced (someone) to three people.' (Recipient)
Unlikely: 'Three people introduced (someone to someone)' (Agent)

When there is more than one subcategorized semantic roles, the default choice for an FQ is patient as shown above.[105] In actual discourse contexts, there can be other co-occurring elements and those elements may contribute to the recoverability. For example, it is possible to assign another role such as agent, to the FQ as in (3.76a), when the default patient interpretation is pragmatically implausible due to the selectional restriction of the predicate.

[104] Similar statements are made in many studies such as Saji (1969: 163) and Ohki (1987: 45). There are some exceptional examples in which adjunct NPs host FQs (cf. f.n. 6). The acceptability judgment of those examples is considered to be influenced by the pragmatic factors, which will be discussed in 3.4.3.2.

[105] This tendency is found in some other languages too. In Pima, patient is also the most privileged semantic role to host a FQ (Munro 1984).

This condition applies to the so-called quasi-objects, which are marked by the dative *-ni*, as well. If the NP denotes a goal, hosting an FQ is possible as in (3.79), while the NP denotes a location, it is impossible as in (3.80).

(3.79)

a gakusei-ga **nomiya-ni** ni-ken itta-yo.
student-NOM bar-to 2-CL went-P
'A student/students went to two bars.'

b nomiya itta-yo.
Likely: '(I) went to the bar.'
Impossible: 'The bar went (somewhere).'

c ni-ken itta-yo.
Likely: '(I) went to two (buildings).' (Goal)
Impossible: 'Two (buildings) went.' (Agent/Theme)

(3.80)

a **kooen-ni** buranko-ga hutatu aru-yo.
park-at swing-NOM 2.CL exist
'There are two swings in the park.'

b kooen aru-yo.
Likely: 'There is a park.'
Impossible: 'There is (something) in the park.'

c hutatu aru-yo.
Likely: 'There are two (things).' (Theme)
Impossible: 'There are something at the two (places).' (Location)

Some examples, however, may pass the test but their host NPs can not necessarily host FQs as in (3.81). The semantic role of the direct object is recoverable as in (3.81b), but assigning that semantic role to the FQ is unlikely as shown in (3.81c).

(3.81)

a * Taroo-ga **gakusei-o** san-nin sinziteiru-tte.
-NOM student-ACC 3-CL believe.PRG-hearsay
'I hear that Taro believes three students.'

b **gakusei** sinziteiru-tte.
Likely: 'I hear that (somebody) believes a student.'
Less likely: 'I hear that a student believes (somebody).'

c **san-nin** sinziteiru-tte.
Likely: 'I hear that three (people) believe (somebody/something).'

Unlikely: 'I hear that (somebody) believe three (people).'

Thus the recoverability of the semantic role of FQ is important for Q-float and this condition corresponds to the structural condition discussed in 3.4.1. Host NPs of Q-float are limited to argument NPs. However, as shown above, the eligibility of each argument is not equal. There is a clear subject-object asymmetry and it is reflected in the hierarchical relationship among the arguments with respect to the hosting eligibility. In addition, the subject-object asymmetry is found in the adjacency restriction on the host NP and its FQ when the host NP is non-absolutive. If the host NP and its FQ are not directly adjacent to each other and an absolutive argument intervenes between them, FL examples may not be acceptable. These conditions are all relevant to how to establish the appropriate link between the host NP and its FQ, which are not in the same syntactic constituent. In the following section, I deal with pragmatic factors and discuss how those factors are deeply involved in establishing the appropriate link between the host NP and the FQ and relevant to the Q-float constraints in addition to the abovementioned syntactic and semantic factors.

3.4.3 Pragmatics based approaches

In this section, I further discuss the constraints on FL in terms of pragmatic factors based on the discourse functions of FL. First, I discuss the 'focus conflict' hypothesis proposed by Takami (1998) and then I propose the hypothetical open proposition hypothesis and discuss the constraints on Q-float from a pragmatic perspective.

3.4.3.1 Focus conflict

The word order is important to the acceptability judgment of FL. As shown in the non-adjacent examples, when the direct object intervenes between the host NP and the FQ as in (3.81a), the

sentence may be unacceptable. However if the intervening direct object is definite, the sentence is acceptable as in (3.82b).

(3.82) same as (3.63)
a * gakusei-ga sake-o **san-nin** nonda.
student-NOM sake-ACC 3-CL drank
Intended: 'Three students drank sake.'

b gakusei-ga **sono**-sake-o san-nin nonda.
that-
'Three students drank the sake.'

Takami (1998) accounts for this contrast in acceptability by the focus conflict between the FQ and the direct object. Indefinite direct object represents new information and is likely to be interpreted as a default focal element in the clause. Thus the FQ, which also needs to be focused, competes with the intervening indefinite direct object and this focus conflict makes (3.82a) unacceptable. On the other hand, when the direct object is definite and represents an activated entity, the sentence does not have a focus conflict and eventually (3.82b) is acceptable.[106] As discussed in 3.3.1, FQs always code new information and eventually often coincide with the narrow-focused elements.

Iwahata (1994) and Takami (1998a) further show that if the non-adjacent FQ is more overtly focused by a pragmatic particle as in (3.83b) non-adjacent examples may become acceptable. They assume that the pragmatic particles enhance the degree of focus assigned to the FQ and resolve the focus conflict. The focus conflict hypothesis is based on this observation.

(3.83)
a * gakusei-ga hon-o san-nin katta.
student-NOM book-ACC 3-CL bought
'Three students bought books.'

b gakusei-ga watasino hon-o san-nin-**sika** kawa-nakatta.

[106] Shimojo (2004) analyses this pairing of examples with a slightly different perspective based on the activation status of the host noun denotation. He claims that the higher acceptability of (3.82b) is due to the fact that the subject NP is new information and focused in the context for (3.82b) where the direct object is already activated at the moment of uttering the sentence.

my -only buy-did.not
'Only three students bought my books.' (Takami 1998a: 92)

Takami argues that (3.83b) is acceptable because the focus conflict between the direct object and the FQ is resolved by the pragmatic particle explicitly marking the FQ. However, in order to discuss the issues with respect to the focus conflict, we have to take the information structure into consideration and examine the discourse context of given examples. In Takami, this point is not always clear. In addition, as discussed in 3.3.1.2, pragmatic particles do not necessarily mark an element in a sentence with an exclusive narrow focus. Instead their basic function is to evoke certain anticipation schemes reflecting speaker's subjective modal judgment. Thus, other pragmatic factors besides information structure also need to be taken into account for the discussion of the Q-float constraints.

3.4.3.2 Adjacency of the host NP and FQ

As discussed in 3.3.4, the physical proximity is relevant to the acceptability of FL examples with non-absolutive host NPs. This adjacency condition can be associated with the eligibility hierarchy of host NP. When the host NP is a direct object, the adjacency between the host NP and its FQ has nothing to do with the acceptability as in (3.84). When the host NP is a transitive subject, the sentence may be unacceptable due to the intervention of a direct object as in (3.85b).

(3.84)
a gakusei-ga **hon-o** **san-satu** katta.
student-NOM book-ACC 3-CL(book) bought

b **hon-o** gakusei-ga **san-satu** katta.
Both: 'A student bought three books.'

(3.85)
a **gakusei-ga** **san-nin** hon-o katta.
student-NOM 3-CL(human) book-ACC bought

b ?* **gakusei-ga** hon-o **san-nin** katta.
Both: 'Three student bought books.'

When the host NP is a dative NP, even adjacent examples may be awkward and non-adjacent ones are not acceptable regardless of the intervening argument NP as in (3.86b,c).

(3.86)

a (?) gakusei-ga **inu-ni** **san-biki** mizu-o yatta.
student-NOM dog-DAT 3-CL(creature) water-ACC gave

b * **inu-ni** gakusei-ga **san-biki** mizu-o yatta.

c * gakusei-ga **inu-ni** mizu-o **san-biki** yatta.

'A student gave some water to three dogs.'

When the host NP is a transitive subject, non-adjacent examples may be acceptable if the intervening direct object is definite or if the FQ is marked by a pragmatic particle as in (3.87).

(3.87)

a **gakusei-ga** **sono**-hon-o **san-nin** katta.
student-NOM that-book-ACC 3-CL(human) bought
'Three students bought that book.'

b **gakusei-ga** hon-o **san-nin-mo** katta.
3-CL-P(as.many.as)
'As many as three student bought books.'

Similar effects are found in dative host NP examples; however it is limited to when the intervening element is a subject. Both examples in (3.88) are more acceptable than (3.86b), if not perfectly acceptable. When the intervening element is a direct object, on the other hand, such effects are unlikely as in (3.89).

(3.88)

a (?) **inu-ni** **sono-**gakusei-ga **san-biki** mizu-o yatta.
dog-DAT that-student-NOM 3-CL(creature) water-ACC gave
'That student gave some water to three dogs.'

b (?) **inu-ni** gakusei-ga **san-biki-mo** mizu-o yatta.
3-CL-P(as.many.as)
'A student gave some water to as many as three dogs.'

(3.89)

a * gakusei-ga **inu-ni** **sono-**mizu-o **san-biki** yatta.
student-NOM dog-DAT that-water-ACC 3-CL(creature) gave
'That student gave some water to three dogs.'

b * gakusei-ga **inu-ni** mizu-o **san-biki-mo** yatta.
3-CL-P(as.many.as)
'A student gave some water to as many as three dogs.'

Thus, the adjacency of the host NP and its FQ is crucial for FL examples with non-absolutive host NPs. Shimozaki (1989) statistically analyzes this constraint and concludes that the adjacency is a crucial factor for the acceptability judgment of FL examples with either dative or nominative host NPs. An interesting point with these results is that the tolerance to the adjacency requirement differs exactly according to the hosting eligibility hierarchy. The adjacency is hardly required for Direct object host NPs, while transitive subject host NPs are occasionally conditioned and dative host NPs are always conditioned by the adjacency.

3.4.3.3 Unpredictability of the quantity

In this section, I argue that the 'measurability' proposed by Gunji and Hasida (1998) can be reinterpreted as a pragmatic condition with respect to the information structure and other pragmatic factors. The FQ in FL obligatorily encodes an 'unpredictable' quantitative value as new information.

When the FQ has an exclusive narrow focus, it is possible to assume that the FL sentence has a presupposition in which only the FQ is to be asserted. (3.90B) is assumed to have the presupposition presented in (3.91). In this presupposition, the numeral part is represented by the variable *x*. The numeral value is focused and its association with the variable is asserted in (3.90B).

(3.90)
A: gakusei-ga **nan-nin** kita-no?
student-NOM what-CL came-Q
'How many students came?'

B: gakusei-ga **san-nin** kita.
3-CL
'Three students came.'

(3.91) Presupposition: '*gakusei-ga x-nin kita*'
Assertion: 'x=3'
Focus: '*san-nin*'
Focus domain: NQ

Lambrecht (1994) shows that the same proposition can have different information structures according to the different presuppositions derived from different discourse contexts. FL can also be used when the sentence has an argument focus, a predicate focus, or a sentence focus. However, FQs are optional when simply answering their preceding questions as in (3.92).

(3.92)

a Q: **dare-ga** kita-no?
who-NOM came-Q
'Who came?'
A: **gakusei-ga** (**san-nin**) kita.
'(Three) students came.'

b Q: gakusei-ga **doo sita-no**?
student-NOM what did-Q
'What did the students do/what happened to the students?'
A: gakusei-ga (**san-nin**) **kita**.
'(Three of) the students came.'

c Q: **nani-ga** atta-no?
what-NOM happened-Q
'What happened?'
A: **gakusei-ga** (**san-nin**) **kita**.
'(Three) students came.'

The simple assertions to the preceding questions do not include the FQs unless the wh-NQ is explicitly inserted in the questions like below.

(3.93)

a **dare-ga nan-nin** kita-no?
who-NOM what-CL came-Q
'Who and how many of them came?'

b gakusei-ga **nan-nin doo sita-no**?
student-NOM what-CL what did-Q
'What happened to how many of the students?'

These questions are not very natural, if not unacceptable, since each of these questions has two open propositions.[107] (3.93a) presupposes the proposition 'somebody came,' and asks not only 'who they are' but also 'how many of **them** came' simultaneously. The second open proposition relies on what is asserted for the first open proposition. Unless such a link between the two open propositions is readily available in the context, (3.93a) is awkward. (3.93b) presupposes the proposition 'the students did something/something happened to the students' and asks not only 'what the students did/what happened to the students' but also 'how many of the students did **it**/are involved' simultaneously. Again the second open proposition relies on what is asserted for the first open proposition. It is not very common to ask such questions. Hence it is not likely to assume the questions like (3.93a,b) for (3.90B), even though the unknown elements are directly marked by wh-elements. As stated above, the FQs in the answers in (3.92) are optionally added to those answers. Therefore, it is reasonable to assume a separate open proposition for the unknown value of FQ for the second open propositions for (3.93a,b). FL examples with a sentence focus do not have presuppositions. They can be uttered as event reporting or existential statements out of the blue. For such event reporting statements, we can also assume preceding wh-questions like in (3.92c). Again, the information denoted by the FQ is optional to such a question and a further hypothetical wh-question like (3.90A), in which the FQ is explicitly asked, can be assumed. I call such a hypothetical question with wh-NQ 'hypothetical open proposition (HOP)' and regard as a crucial condition for FL because it can check the unpredictability of the quantitative information denoted by the FQ. The unpredictability is defined by the following two

[107] When the wh-expression refers to non-human entities, the dual wh-question is more acceptable.

nani-o **ikutu** katta-no?
what-ACC how.many bought-Q
'What and how many of them did you buy?'

However, again, this question is not as natural as its counter part wh-question without the wh-NQ because this question strongly implies that the speaker knows that the hearer bought some plural entities, which is not very common.

points. The first criterion states that the value of FQ is unpredictable in that any numeral value can be chosen for the FQ and the second criterion states that the denotation of FQ is unpredictable in that any relevant entities can be instantiated.

(3.94) unpredictability required of FQ
(i) arbitrariness of the number of instantiations represented by the numeral of the FQ
(ii) homogeneity of the instantiated entities with respect to the event described by the given sentence.

An FL example is acceptable only when it has a plausible HOP. This condition is supported by the following points.

First, when judging declarative FL sentences, we check whether appropriate HOPs can be assumed for them. If we judge FL examples with wh-NQs, the context in which the FQ is interpreted as unpredictable is automatically available since we do not have to assume any hypothetical wh-NQs. Therefore, wh-NQ counterparts of some murky examples like (3.87a) are much better than those original examples, if not perfectly acceptable. In addition, when the FQ denotes an approximate quantity, its HOP is easily available and the sentence becomes better as in (3.95).

(3.95)
a gakusei-ga hon-o **nan-nin** katta-no?
student-NOM book-ACC what-CL bought-Q
'How many students bought books?'

b gakusei-ga hon-o **nan-nin-ka** katta.
what-CL-Q
'Some students bought books.'

Compared to assuming an HOP for a declarative FL example, actual open propositions have no need to do so due to the explicit wh-questions. The quantitative value denoted by the wh-FQ is automatically interpreted as an unpredictable value and the sentence is readily acceptable.

Second, the plausibility of HOP can be influenced by our world knowledge. Even though two sentences have the same syntactic structures, the acceptability may differ according to the

likelihood of the context. Dative NPs can not always host FQs; however, (3.96a), which has the same syntactic structure with (3.96b), is perfectly acceptable.

(3.96)

a zyoshu-wa ratto-ni san-biki sin'yaku-o ataeta.
assistant-TOP rat-DAT 3-CL new.drug-ACC gave
'The assistant gave a test drug to three rats.'

b ? Taroo-wa inu-ni san-biki mizu-o yatta.
-TOP dog-DAT 3-CL water-ACC gave
'Taro gave some water to three dogs.'

This difference in the judgments comes from the likelihood of the HOP with respect to our world knowledge. It is not difficult for us to imagine a context for (3.96a), in which the number of subjects for an experiment is changed, because we know that rats are used for such scientific experiments. It is this knowledge that makes the HOP plausible because the FQ is properly interpreted as unpredictable. On the contrary, for (3.96b), an appropriate HOP is not readily available because we seldom have a context, in which the number of *dogs* you give water to change from time to time.[108]

Let us consider the following examples, in which our world knowledge limits the plausibility of HOP in (3.97).

(3.97)

a ? tori-ga hane-o **ni-mai** hirogeta.
bird-NOM wing-ACC 2-CL stretched
'A bird stretched its two wings.'

b ? tori-ga hane-o **nan**-mai hirogeta-no?
what-CL stretched-Q
'How many wings did the bird stretch?'

[108] There are some other options to make the HOP more readily available. If sentence (3.96b) is modified by the adverb *tamesini* 'as a trial,' the quantitative value of the NQ is interpreted as an unpredictable value more easily, and the acceptability is enhanced due to the more likely HOP. If the sentence has a trial reading, the number of trials, which is denoted by the NQ, is more likely to be interpreted as a variable.

tamesini Taroo-wa inu-ni san-biki mizu-o yatta(/yatte-**mita**).
for.trial -TOP dog-DAT 3-CL water-ACC gave(give-saw)
'Taro gave some water to three dogs to see how it would go.'

The awkwardness of (3.97) comes from our world knowledge about birds, namely that they normally stretch their two wings together. This knowledge makes the HOP (3.97b) unlikely because the numeral, *two*, denoted by the FQ is too predictable in this context.[109] If there were imaginary *monster birds* which have more than two wings, sentence (3.98a) could be acceptable because we can regard the numeral as an unpredictable variable with a proper HOP (3.98b).[110]

(3.98)

a kaichoo-ga hane-o **ni-mai** hirogeta.
monster.bird-
'The monster bird stretched two of its wings.'

b kaichoo-ga hane-o **nan**-mai hirogeta-no?
what-CL -Q
'How many wings did the monster bird stretch?'

Third, Q-float can be found with atelic predicates as in (3.99a); however, it is not compatible with psych-verbs as in (3.99b).

(3.99)

a ii-mise-o mittu **sitteiru**.
nice-shop-ACC 3.CL know
'I know three nice shops.'

b ?? osiego-o san-nin **sinziteiru**.
own.student-ACC 3-CL believe
'I believe three students of mine.'

It should be possible to believe an unpredictable number of students. However, there is a large difference between the above two examples. The number of entities initiated by the NP-FQ pair

[109] In addition, the exhaustive particle does not seem to make the sentence acceptable, even though the sentence has an exhaustive reading. On the contrary, if the CL is marked by the focus particle *dake* 'only' and the numeral is 'one,' the sentence is acceptable.

(1) ? tori-ga hane-o ni-mai-**tomo** hirogeta.
2-CL-all stretched
'The bird stretched both wings.'

(2) tori-ga hane-o iti-mai-**dake** hirogeta.
1-CL-only
'The bird stretched only one wing.'

[110] The HOP requirement is one of the reasons that FL may have a partitive reading with FL. If the FL has a plausible HOP, the numeral is interpreted as a numerical variable within a certain range.

is not only unpredictable, but also their instantiations take place randomly. This can be checked whether the sentence is compatible with adverbs like *tamatama* 'by chance.'

(3.100)
a **tamatama** ii-mise-o sitteiru.
by.chance nice-shop-ACC know
'I know a nice shop by chance.'

b ?? **tamatama** osiego-o sinziteiru.
by.chance my.student-ACC believe
'I believe my student by chance.'

Psych-verbs like *believe* require the object to be specific and the experiencer to have some commitment to the object for a certain period of time prior to the utterance. Therefore, it is unlikely that the experiencer conducts random instantiations and creates a brand-new set along this statement. For these psych-verbs, Pre-N is preferred to FL even in a wh-question since it has a specific reading for the denotation of the MP.[111]

(3.101)
a **san-nin-no gakusei**-o sinziteiru.
3-CL-GEN student-ACC believe
'I believe three students.'

b **nan**-nin-no gakusei-o sinziteiru-no?
what- -Q
'How many students do you believe?'

Fourth, Q-float may take place in negative sentences, but it is strictly limited. (3.102) is not ungrammatical, but sounds quite unnatural.[112]

(3.102) (?)Taroo-ga biiru-o san-bon noma-**nakatta**.

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[111] The counter part FL wh-question of (3.99b) is not acceptable.
?? osiego-o **nan-nin** sinziteiru-no?
own.student-ACC what-CL believe-Q
'How many students of yours do you believe?'

[112] If it is to negate a certain element in an FL sentence, cleft or cleft-like sentences are used instead.
a Taroo-ga nonda biiru-no kazu-wa san-bon-dewanai.
-NOM drank beer-GEN number-TOP 3-CL-isn't
'The number of bottles of beer that Taro drank is not three.'
b Taroo-ga san-bon nonda-no-wa biiru-dewanai.
-NOM 3-CL drink-NOMI-TOP beer-isn't
'What Taro drank three bottles of is not beer.'

-NOM beer-ACC 3-CL drink-didn't
'Taro didn't drink three bottles of beer.'

However, some FL sentences are perfectly fine with negative predicates.

(3.103) gakusei-ga hutari ko-**nakatta**.
student-NOM 2.CL come-didn't
'Two (of the) students didn't come.'

The discourse context for this example is that a particular number of students were supposed to come, and the sentence expresses that two of them did not show up. Thus, when there is a quota or norm, and if the quota is not fulfilled, the gap is represented by an FQ with a negative predicate. When such a quota is not likely as in (3.102), it is awkward to state that a certain amount of entities are NOT involved in the event or part of the state.

Fifth, the acceptability of an FL clause is enhanced when more than one FL is coordinated in the same clause. This can also be explained in terms of HOP.[113]

(3.104) (=3.22)
a ?? Taroo-ga sensei-ni hutari Hanako-o shookaisita.
-NOM teacher-DAT 2.CL -ACC introduced
'Taro introduced Hanako to two teachers.'

b Taroo-ga [eigo-no sensei-ni **hutari**] (sosite)
-NOM English-GEN teacher-DAT 2.CL and
[syakaika-no sensei-ni **hutari**] Hanako-o shookaisita.
social.studies-GEN teacher-DAT 2.CL -ACC introduced
'Taro introduced Hanako to two English teachers and two social studies teachers.'

[113] Lambrecht (1994: 291) claims that contrastive focus is a relative concept and should be considered as a subclass of 'regular' focus since there is no overt distinctive marking for contrastive focus. In Japanese, the particle *wa* is considered to have two functions; one as a topic marker and the other as a contrastive marker. However, Kitahara (1981: 270) claims that this distinction is a matter of degree concerning how limited the choice for the referent marked by *wa* in the discourse context. When there is no restriction about the choice (infinite candidates), *wa* is interpreted as a topic marker, while when the choice is limited among a set of specific entities in the context (finite candidates), it is interpreted as a contrastive marker. Thus contrastiveness is not an independent syntactic concept, rather a pragmatically derived concept from a more general concept. However, this discourse function can play an important role in marginal FL examples. Miyagawa (1989) assumes that these two *wa*'s have different syntactic representations.

When two NP-FQ pairs are coordinated, contrastiveness on the FQs is considered to contribute to raise the acceptability of the sentence. Contrastiveness is more explicitly marked when the host NPs are marked by the discourse particle *wa* as below.

(3.105) Taroo-ga [eigo-no sensei-ni-**wa** **san-nin**] (sosite)
-NOM English-GEN teacher-DAT-CNTR 3-CL and
[syakai.ka-no sensei-ni-**wa** **hutari**] Hanako-o shookaisita.
social.studies-GEN teacher-DAT-CNTR 2.CL -ACC introduced
'Taro introduced Hanako to three English teachers and two social studies teachers.'

Interestingly, when the host NPs are marked by *wa*, the numerals of the two FQs have to be different, unlike (3.104b).[114] Since (3.105) is also acceptable, contrastiveness on the FQ is considered relevant to the acceptability judgment. When two NP-FQ pairs are coordinated, they mutually enhance the association between the NP and the FQ. The host NPs in the two different pairs may not have the same denotation but the host NPs share the same semantic role and their links to the FQs are enhanced due to the repetition. This effect is found in non-adjacent examples. (3.106) is better than its non-coordinated counterpart, if not perfectly acceptable.[115]

(3.106) gakusei-ga hon-o **san-nin**, zassi-o **hutari** katta.
student-NOM book-ACC 3-CL(human) magazine-ACC 2.CL(human) bought
'Three students bought books and two bought magazines.'

In addition to the strengthened link between the host NP and the FQ, the unpredictability of the value of FQ can also be enhanced when the denotation of the host NP is contrasted with something else because the contrasted entities are expected to have different values from each other. Even when coordinated pairs are not explicitly stated, as long as contrastiveness is clearly

[114] When the two NQs have the same numeral values, the dative host NPs have to be marked by *mo* 'also.'
[115] This effect is not always available. A direct object intervenes between the NP and the FQ in the following example, and the sentence is not acceptable.
gakusei-ni hon-o san-nin, zassi-o hutari ageta.
student-DAT gave
'(I) gave books to three students and magazines to two students.'

perceived, other alternative candidates are readily evoked in the context and such potential inexplicit 'coordination' produces a similar effect.

In addition, HOP is further applicable to a different pragmatic scheme. Pragmatic markers on FQs may enhance the acceptability of murky FL examples. Takami (1998) simply claims that those markers raise the information value of the marked FQ and solve the 'focus conflict' between the FQ and other potentially focal elements.

(3.107) gakusei-ga hon-o **san-nin-sika** kawa-nakatta.
student-NOM book-ACC 3-CL-P(only) buy-didn't
'Only three students bought books.'

However, it is not clear why those murky sentences become more acceptable when the FQs are overtly marked by the 'focus' particles and become more 'focused.' Instead, when such particles are used, we interpret the denotation of the other elements as part of anticipation that the speaker has. For interpreting (3.107), we understand first that the speaker had an anticipation (pragmatic presupposition), namely '*a certain number of students would buy books*' due to the pragmatic particle, and then that the sentence asserts that the number is *three*, which is far below the expected number. Even though the sentence is uttered out of the blue, such an anticipation evoked by the pragmatic particle should always be available. Due to this anticipation, the association between the host NP and the FQ in the non-adjacent NP-FQ pair is reinforced and the FQ is readily interpreted to denote an unpredictable quantity of the entities denoted by the host noun. Other pragmatic particles on FQs also evoke similar anticipations, in which the quantity denoted by the FQ is asserted with a speaker's modal judgment while the denotations of the other elements are presupposed in the anticipation scheme.

(3.108) (=3.16)
a Taroo-wa biiru-o san-bon-**sika** noma-nakatta.
-only drink-did.not
'Taro drank only three bottles of beer.'

b*/?? Taroo-wa biiru-***sika*** san-bon nomanakatta.
Intended: 'Taro drank three bottles of BEER, not any other kind of beverage.'

c (answering questions like 'Did the students drink a lot?')
*/??Taroo-***sika*** biiru-o san-bon nomanakatta.
Intended: 'Only Taro drank three bottles of beer (not anybody else did so).'

The difference in unacceptability of the three sentences in (3.108) can be accounted for by the difference in their anticipations. In (3.108a), the speaker's anticipation is '*Taro* would drink *x* amount of beer' while the assertion is 'the actual amount is *three bottles*,' and 'that amount is far lower than *x*.' In (3.108b), the anticipation is 'Taro would drink three bottles each for multiple types of beverage' while the assertion to the anticipation is 'the types of beverage is only beer against the speaker's expectation.' In (3.108c) the anticipation is 'multiple people would drink three bottles of beer' and the assertion to the anticipation is 'the drinker is only Taro against the speaker's expectation.' (3.108b,c) are unacceptable because the discourse contexts, in which those anticipations take place, are not very realistic. However, if such contexts were forcefully given, the acceptability of those sentences would be raised, if not perfectly acceptable.

Thus *sika* requires a very strict anticipation and is interpreted to mark an element in focus. In this respect, *sika* can be called a 'focus particle.' Since the element most preferentially marked by *sika* in an FL sentence is FQ, the default focal element in FL is considered the FQ.[116] The difference in acceptability may be due to the different pragmatic relations evoked by these particles. Unlike *sika*, the presupposition required by *dake* is flexible and not semantically

[116] The Pre-N counterpart of (3.108a) is also awkward as in (1). If the Pre-N is modified by a demonstrative and explicitly shown as identifiable and accessible entities as in (2), the sentence is acceptable. Since identifiable and discourse active entities are readily interpreted as part of the presupposition, the subject NP marked by *sika* is properly focused as in (2). On the contrary, if the object denotes new elements that are not identifiable as in (1), they are not likely to be part of the presupposition and the sentence is unacceptable.

(1) ?? Taroo-**sika** **san-mai-no** **e**-o mi-nakatta.
-only 3-CL-GEN painting-ACC see-did.not
'Only Taro saw three paintings.'

(2) Taroo-**sika** **sono**-san-mai-no e-o minakatta.
that-
'Only Taro saw those three paintings.'

limited. (3.109a) can be uttered to answer questions like 'how much liquor did Taro drink?' or even 'what did Taro do?' (3.109b) can be uttered to questions like 'did everybody drink at the party?' In these discourse contexts the denotation of FQ is not interpreted as part of their presuppositions, but part of their assertions.

(3.109) (=(3.19))
a Taroo-wa biiru-**dake** san-bon nonda.
-TOP beer-only 3-CL drank
'Taro drank only three bottles of beer.'

b Taroo-**dake** biiru-o san-bon nonda.
'Only Taro drank three bottles of beer.'

Pragmatic particles express not only semantic meanings but also pragmatic relations relevant to information structure and anticipation structure. Some of those particles may be considered as focus particles since the element they mark usually overlaps with the location of focus due to the assertions (and presuppositions) associated with those particles.

3.4.4 Summary

The constraints on Q-float are not single-layered but multi-layered. The three factors, argumenthood, adjacency, and unpredictability, are discussed here and all three of them are relevant to ensuring the link between the host NP and its FQ. The structural constraint limiting the host NPs to arguments is motivated by the non-overt case-marking on FQs. Arguments are all potentially eligible to host FQs, so the physical proximity between the host NP and its FQ is a crucial factor for their association. The unpredictability comes from the functional properties of FL and this requirement has to be fulfilled regardless of the grammatical role of the host NP.

3.5 Other NQ constructions relevant to FL

Before concluding the discussions on FL, I discuss two other NQ constructions seemingly relevant to FL in this section. One is the fronted NQ construction and the other is the relativized

FL construction. I regard these two constructions as variations of FL and discuss their similarities to and differences from FL respectively.[117]

3.5.1 Fronted NQ construction (F-NQ)

An NQ may appear at the clause initial position as shown below.

(3.110)
a gakusei-ga hon-o yon-satu katta.
student-NOM book-ACC 4-CL bought

b **yon-satu** gakusei-ga hon-o katta.
Both: 'A student bought four books.' Takami (1998c: 104 (85))

Takami (1998c: 103) claims that the clause initial position is the marked focus position in Japanese and that an FQ occurring in that position has a marked focus, which is schematically presented in (3.111).

(3.111) Functionalist restriction on FQ in Japanese (ibid: 104)
(The word order of) FQ has to observe the following information structure.[118]

[P_1 [S … e_1 … __ **V**] P_2]
marked focus ⟶ (more important information) non-focus

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[117] In Kim (1995), there is one more NQ construction, in which NQs occur independently without being accompanied by their host NPs as in the following examples. The answer part in (1) and the second clause in (2) do not have overt host NPs for their NQs. Even though the host NPs do not explicitly appear in the clause, they are mentioned in the preceding utterances respectively and easily recoverable in the context.

(1) Q: kodomo-wa nan-nin imasu-ka?
child-TOP what-CL exist-Q
'Do you have any children?'
A: san-nin imasu.
3-CL exist
'I have three (children).'

(2) moti-ga takusan atta-node, **hutatu** tabeta.
rice.cake-NOM many existed-because 2.CL ate
'Since there were many rice cakes, I ate two (of them).'

Kim (ibid: 237) classifies examples like above as 'sentence external Q.' However, it may be better to assume that the recoverable or identifiable host NPs are simply omitted in those examples because without such discourse contexts, independent NQs (I-NQ) are not interpretable. Therefore, I consider I-NQ as a subclass of FL and do not deal with it in this section. There are case-marked NQs and the case markers on such NQs may be omitted. I will discuss this type in Chapter 4.

[118] The scheme presented here is slightly modified from Takami's original version. The initial position in the scheme is for not only marked FQs but also for other elements. In the Role and Reference Grammar (RRG) framework, P1 is called the pre-core slot and P2 the post-core slot (VanValin and LaPolla 1997). See Chapter 5 for further discussions on the NQ constructions with the RRG framework.

Within the clause, the information value becomes higher towards the pre-verbal position, which is the default focus position. P_1 is the marked initial position, which is out of the clausal boundary, and P_2 is the marked post-verbal position, which is also out of the clausal boundary.[119] The former is a marked focus position while the latter is a non-focal position (Kuno 1978). FQ may occur in the former position, but seldom in the latter position.[120]

This construction shows a similar subject-object asymmetry to that in FL with respect to non-adjacency of the host NP and the FQ.

(3.112)
a hutatu, [kodomo-ga kozutumi-o okutta].
2.CL child-NOM package-ACC sent
'The child sent two packages.' (Miyagawa 1989: 50 (109))

b ?* hutari, hon-o [gakusei-ga katta].
2.CL book-ACC student-NOM bought
'Two students bought a book.' (ibid: 50 (110))

Such unacceptable examples are found when a dative NP or an instrumental PP intervenes as in (3.113).[121]

(3.113)
a * hutari **Tanaka-san-ni** [gakusei-ga omiyage-o ageta].
2.CL DAT student-NOM present-ACC gave
'Two students gave Mr. Tanaka a present.' (ibid: 50 (111))

b ?* hutari **naifu-de** [kodomo-ga roopu-o kitta].

[119] In Takami's information structure scheme, the initials 'e1' and 'V' are put in the inner pair of the brackets and its first bracket is marked by 's.' It is not clear what boundaries the inner pair of the brackets indicates, let alone the outer pair of the brackets. He only describes that NQs may appear at the sentence initial position (P1) or at the post-verbal position (P2).

[120] A speaker may change her plan after starting the utterance and add some elements at the end of the utterance. In such a second-thought utterance, an FQ may be added after the predicate. Shimojo (2005) argues that a post-verbal element may be either focal or nonfocal in the sense of focus being new information. However, in either type, the post-verbal element represents information that is non-important, which typically does not persist in the cataphoric context ("de-focused").

[121] Judgment of these sentences is Miyagawa's. Some native speakers find these sentences not completely unacceptable. In addition, instrumental PPs do not always make non-adjacent examples unacceptable. If the predicate in (3.113b) is changed to the one with progressive aspect as below, the sentence becomes much more acceptable. This is relevant to the plausibility of HOP of FL with an activity verb in past tense.

(?) hutari naifu-de [kodomo-ga roopu-o **kitteita**].
2.CL knife-by child-NOM rope-ACC cut.PROG.PST
'Two children were cutting the rope with a knife.'

2.CL knife-by child-NOM rope-ACC cut
'Two children cut the rope with a knife.' (ibid: 51 (112))

On the other hand, a temporal adverb or location adverbial phrase may not cause such an effect. They are originally out of the verb phrase and therefore not moved to that marked position by scrambling.

(3.114)
a hutari **kyoo** [gakusei-ga nihongo-no hon-o katta].
2.CL today student-NOM Japanese-GEN book-ACC bought
'Today two students bought Japanese language books.' (Miyagawa ibid: 51(113))

b hutari **sunaba-de** [yoozi-ga asondeita].
2.CL sandbox-in toddler-NOM play.PRG.PST
'Two toddlers were playing in the sandbox.' (Takami ibid: 105 (88b))

The constraints on the non-adjacent examples in F-NQ are equivalent to those in FL.[122] However, as pointed out in Miyagawa (1989: 73-74), when the host NP is marked by *wa*, fronting of FQ is generally unacceptable.

(3.115)
a gakusei-**wa** hutari odotta.
student-TOP 2.CL danced

b * **hutari** gakusei-**wa** odotta.

Both: 'As for students, two danced.' (Miyagawa 1989: 73-74 (211) (212))

(3.116)
a gakusei-**wa** boku-ga hutari yonda.
student-TOP I-NOM 2.CL invited

b * **hutari** gakusei-**wa** boku-ga yonda.

Both: 'As for students, I invited two.' (ibid: 74 (215) (216))

The host NPs in (a) examples function as topic of the sentence and each sentence describes a statement about the topic. The original case marker is nominative in (3.115a) and accusative in (3.116a). However, if their FQs are fronted, the sentences become unacceptable as in (b) examples, regardless of the original case marker of the host NP.

[122] According to Takami (1998c), (3.112b) is unacceptable because not only the NQ but also the object NP are in the initial marked focus position and they create a focus conflict.

Miyagawa (1989) claims that examples like (3.115b) and (3.116b) may be acceptable when the NP marked by *wa* is interpreted with a clear contrastive reading. In (3.117), another NP-FQ pair is explicitly stated and a contrast is clearly perceived.[123]

(3.117) hutari **gakusei-wa** boku-ga yonda-kedo **sensei-wa** daremo yoba-nakatta.
2.CL student-TOP I-NOM invited-but teacher-TOP anyone invite-didn't
'I invited two students, but did not invite any teachers.' (ibid: 75 (219))

An NP marked by *wa* is interpreted as topic when it occurs initially, while non-sentence-initial topic tends to be associated with a marked sense of contrast. When the default word order of the topic-comment construction is reversed as comment-topic, the topic can be interpreted as contrastive. This kind of restriction in word order is found between the FQ and the host NP marked by *wa*. Miyagawa assumes that sentences (3.115b) and (3.116b) are derived by NQ-scrambling and argues that the fronted NQs land on the unacceptable position for Q-float while both the FQ and the topical host NP in (3.117) move to the acceptable adjoining sites to have a contrastive reading.

However, what is contrasted in (3.117)? The contrast in quantity of the two different categories is clearly seen in the two NP-FQ pairs in (3.118a) and the sentence is acceptable. On the contrary, if the quantities represented by the FQs are equal as in (3.118b), the sentence sounds awkward because no contrastive interpretation is available between the two quantities.

(3.118)
a gakusei-wa **hutari**, sensei-wa **san-nin** yonda.
student-CNTR 2.CL teacher-CNTR 3-CL invited
'I invited two students and three teachers.'

b ?? gakusei-wa **hutari** sensei-wa **hutari** yonda.[124]
2.CL
'I invited two students and two teachers.'

[123] Miyagawa claims that if the *wa* is topical it is base generated under S" while if it is contrastive it either moves and adjoins to the S or remains *in situ* (ibid: 76). However, this explanation is purely syntactic and ignores the discourse functions of the particle *wa* and Q-float.
[124] When the quantities denoted by the FQs in two NP-FQ pairs are the same as in (3.118b), the particle *mo*, which means 'also,' should be used for the host NPs instead of *wa*.

When we try to put contrast on the FQs in two NP-FQ pairs whose host NPs are marked by *wa*, FL examples with the canonical word order are acceptable as in (3.118a) while fronted FQ examples are not acceptable as in (3.119a). If the contrast were to be found between the quantities represented by the fronted FQs, (3.119a) should be acceptable like (3.118a). The two NP-FQ pairs in (3.119a) are connected by the predicate with adversative conjunction *yonda-ga* (invited-but), but the sentence is not fully acceptable. When the fronted FQs have overt extra focus marking on them such as stress and pragmatic particles, the fronted FQs are contrastive enough and the sentences are acceptable as in (3.119b,c).

(3.119)

a ? **hutari** gakusei-wa yonda-ga, **san-nin** sensei-wa yonda.
2.CL student-CNTR invited-but 3-CL teacher-CNTR invited
'I invited two students and three teachers.'

b **HUTARI** gakusei-wa yonda-ga, **SAN-NIN** sensei-wa yonda.
'I invited TWO students and THREE teachers.'

c hutari-**sika** gakusei-wa yoba-nakatta-ga, san-nin-**mo** sensei-wa yonda.
-P(only) invite-didn't-but -P(as.many.as)
'I invited only two students and as many as three teachers.'

Thus, what is contrasted in (3.117) is not the quantity, rather the polarity of the two clauses; *students* were invited, while *teachers* were **not** invited. FQs are contrastive when the sentences have the canonical word order as in (3.118). F-NQ examples with host NPs marked by *wa* are acceptable when those FQs have overt focus marking as in (3.119). Takami (1998c) claims that the sentence initial position is a marked focus position and the FQ occurs in that position receives that marked focus. However, as Lambrecht shows, the sentence initial position is for either topic or focus.[125] These examples show that the host NP is focused in F-NQ examples. This is why the host NP marked by *wa* is not compatible with F-NQ as in (3.115b) and (3.116b).

[125] When the NQ is interpreted as a topical element, the proposition with its host NP is like '(being) three is the students.'

Fronted FQs have to be explicitly focused in order to have a 'marked' focus interpretation as in (3.119b,c). Due to the explicit focus marking on the fronted FQ in those examples, the host NP marked by *wa* is not interpreted as being in focus and the sentences are acceptable. This explanation coincides with the information structure of Japanese on two points. First, the immediately pre-verbal position is the default focus position in Japanese and fronting of the FQ eventually makes the host NP appear closer to that position. Second, the fronted NQ, on the other hand, goes further away from the default focus position and needs explicit focus marking to be interpreted as a 'marked' focus.[126]

Let's consider some more examples. The fronted FQ in (3.120a) can be interpreted as part of either a topical element or a focal element, but the fronted FQ needs to be pronounced with stress for the latter interpretation. If there is no stress on the fronted FQ, the immediately pre-verbal element is most likely to be interpreted as the default focus in both examples.

(3.120)

a **san-bon** biiru-o **Taroo-ga** nonda.
3-CL beer-ACC -NOM drank

Focal: 'As for beer, Taro drank three (bottles).'
Topical: 'As for the three bottles of beer, Taro drank them.'

b **san-bon** Taroo-ga **biiru-o** nonda.
3-CL -NOM beer-ACC drank
'Three bottles, Taro drank beer.'

There can be three different wh-questions for (3.120a) as in (3.121). The first two wh-questions are both acceptable. In (3.121a), the fronted FQ is marked by the wh-expression, while in (3.121b) the subject occurring in the default focus position is marked by the wh-expression. On the other hand, (3.121c) sounds a little awkward, in which two wh-elements co-occur.[127] When

[126] I assume that non-canonical word order sentences have the same default focus position. However, since this may not necessarily be true, I need further investigation on the relationship between the word order and the focus position.

[127] The cannonical word order counterpart of (3.121c) is also awkward.
(1) ? **dare-ga** biiru-o **nan-bon** nonda-no?

there are two unknown elements represented by wh-elements, the canonical word order is preferred because the preceding one often has a wider scope than the other.

(3.121)

a **nan-bon** biiru-o **Taroo-ga** nonda-no?
what-CL beer-ACC -NOM drank-Q
'How many bottles of beer did Taro drink?'

b **san-bon** biiru-o **dare-ga** nonda-no?
3-CL
'As for the three bottles of beer, who drank them?'

c ? **nan-bon** biiru-o **dare-ga** nonda-no?
what-CL beer-ACC who-NOM drank-Q
'Who drank how many bottles of beer?'

The marked focus interpretation for fronted FQs requires explicit focus marking. However, when the fronted FQ is marked by pragmatic particles, the acceptability of the sentence may go down, compared to (3.120a).

(3.122)

a **san-bon-mo** biiru-o Taroo-ga nonda.
3-CL-P(as.many.as) beer-ACC -NOM drank
'Taro drank as many as three bottles of beer.'

b ? **san-bon-sika** biiru-o Taroo-ga noma-nakatta.
-P(only) drink-didn't
'Taro drank only three bottles of beer.'

c ? **ip-pon-mo** biiru-o Taroo-ga noma-nakatta.
1-CL-P(even)
'Taro didn't drink even one bottle of beer.'

---

who-NOM beer-ACC what-CL drank-Q
'Who drank how many bottles of beer?'

For this question, only the direct object denotation is presupposed with respect to the given activity and other elements are unknown in the context. However, such a discourse context is not very likely and the question sounds awkward. (2a) is not a question but multiple wh-elements are allowed because the above discourse presupposition is considered likely in this context of taking records. As in (2b), a non-canonical word order counterpart is not fully acceptable. This shows that a sentence with multiple wh-elements is not very compatible with a non-canonical word order mainly due to the complicated information structure.

(2)a **dare-ga** biiru-o **nan-bon** nonda-ka kakitometa.
who-NOM beer-ACC what-CL drank-Q wrote.down

b ? **nan-bon** biiru-o **dare-ga** nonda-ka kakitometa.
Both: 'I wrote down who drank how many bottles of beer.'
'Who drank how many bottles of beer?'

These particles tend to not only directly mark the focal elements but also require certain discourse contexts for their interpretations. The topical interpretation of the fronted FQs or the whole NP-FQ pairs is not likely for (3.122a-c) due to the explicit focus marking on the FQs. Again, since they are in the default focus position, the subject NPs are also need to be in focus. However, the discourse contexts based on the anticipations evoked by those pragmatic particles may not be compatible with the 'subject NP in focus' interpretation. In (3.122a), the potential agent was not expected to drink that much beer. In (3.122b), the potential agent was expected to drink a lot of beer. In (3.122c), the potential agent was expected to drink at least some beer. The acceptability of the above sentences depends on the compatibility of the above contexts and the interpretation of the subject NPs. If the subject NP is to identify who the potential drinkers are, the sentence is acceptable. If the subject NP is topical and the sentence is to represent a statement about that particular individual, the sentence is less likely to be acceptable. In (3.122b,c) the judgment on the quantity is decided based on the quantity of the regular beer consumption of the agent. Therefore who the agent is needs to be identified prior to making such a judgment. The subject NPs in (3.122b,c) are not likely to be interpreted as topical because they are at the default focus position. On the contrary, for (3.122a), it is possible to assume that the subject NP is interpreted as the focal element. Three bottles of beer can be regarded as a large amount to many people. Due to this common sense knowledge, the fronted FQ is not necessarily interpreted as part of assertion. The sentence can be interpreted as identifying who that drinker is as well as a statement about that particular person. Therefore, the acceptability of the sentence goes down as the amount of beer becomes less. For example, one bottle of beer cannot be regarded as a large amount to many people, so the sentence is more likely to be interpreted as a statement about that

given person. However, this interpretation contradicts the focus on subject NP interpretation, and the sentence is awkward.

Furthermore, when the participants are not identified, it is impossible to make such judgments. (3.123a) is acceptable since we understand (3.123a) is utterred in the context that the speaker knows that somebody has not drunk even one bottle of beer and asks who he/she is. In this respect the denotation of the FQ marked by the pragmatic particle is part of the presupposition, not of the assertion. (3.123b) is slightly awkward because, first, the FQ marked by the pragmatic particle is fronted unlike (3.123a) and is not likely to be interpreted as part of the presupposition, but as part of assertion with respect to the anticipation. With the FQ being a marked focus, asking the identity of the agent is unlikely. Instead as in (3.123c), if the agent is a particular individual, the sentence is interpreted as a statement about that individual, and the anticipation evoked by the pragmatic particle on the fronted FQ is compatible with the statement. Note that (3.123c) can be uttered out of the blue and has a sentence focus.

(3.123)

a dare-ga biiru-o **ip-pon-mo** noma-nakatta-no?
who-NOM beer-ACC 1-CL-P(even) dronk-didn't-Q

b ? **ip-pon-mo dare**-ga biiru-o noma-nakatta-no?

a & b: 'Who did not drink even one bottle of beer?'

c **ip-pon-mo Taroo**-ga biiru-o noma-nakatta.
'Taro did not drink even one bottle of beer.'

In sum, the fronted FQ construction is considered as a subtype of FL and these two constructions are different with respect to information structure. The fronted FQ itself can be narrow-focused when it has stress on it.

3.5.2 Relativized FL construction (RelQ)

There are some relative clause examples in which an NQ with no case-marking appears independently without its host NP. The host noun is relativized and functions as the head noun of

the relative clause. The NQ *san-dai* 'three (machinery objects)' has no host noun in the relative clause and its host noun is the head noun of the relative clause.[128]

(3.124)
a [kinoo san-dai ureta] kuruma
yesterday 3-CL sold car
'The car three of which were sold yesterday'

b kinoo kuruma-ga san-dai ureta. (FL)
car-NOM 3-CL sold
'Three cars were sold yesterday.'

Kim (1995: 234-6) classifies this type of NQ construction as 'endogenous Q type' and points out a structural similarity to FL. I call this type of NQ construction 'RelQ' since this NQ type is restricted to those with a relative clause. There are two types of RelQ examples in terms of the predicate type in the relative clause; one has a non-existential predicate like (3.124a) and the other has an existential predicate as in (3.125). Kim claims that (3.125b) is an FL counterpart of (3.125a) and the head noun, *hai* 'cup,' is semantically construed as the host noun of the NQ in the relative clause in (3.125a).[129]

(3.125)
a Keizoo-wa [hutatu naranda] **hai**-ni sasita.
-TOP 2.CL lined.up cup-DAT poured

---

[128] Kim (1995: 235) considers (1a) as an example of RelQ. He claims that the counterpart FL expression for (1a) is (1b).
(1)a [**hutatu** aru] x to y nouti, hitotu-o oidasuto, … (Kim's (55))
2.CL exist and among 1.CL-ACC chase.out.when
'If we get rid of one out of the two, x and y, …'
b ?? [x to y]-ga **hutatu** aru.
and -NOM 2.CL exist
'There are two elements, x and y.'
However, (1b) itself is not acceptable, since the host NP does not denote a non-bounded set, but a pair of specific individuals. In addition, this is not totally productive. When the host nouns are proper nouns and refer to unique individuals, it sounds less acceptable.
(2)a ? [**hutari** iru] Taroo to Hanako nouti, hitori-o oidasuto, …
2.CL exist and among 1.CL-ACC chase.out.when
'If we get rid of one out of the two, Taro and Hanako, …'
b * Taroo to Hanako-ga **hutari** iru.
and -NOM 2.CL exist
'There are two people, Taro and Hanako.'

[129] (3.125b) is not a natural expression. The resultative form, *narandeiru*, or its past tense counterpart *narandeita* is a more appropriate expression.

'Keizo poured (sake) into the two cups set side by side.' (ibid: 234 (54a))

b **hai**-ga hutatu naranda. (FL)
cup-NOM 2.CL lined.up
'Two cups were set side by side.' (ibid: 235 (54b))

Before discussing the semantic/pragmatic constraints on RelQ and the functional similarities between FL and RelQ constructions, I briefly sketch two general characteristics of the relative clause in Japanese; one is relativization eligibility and the other is the distinction between restrictive and non-restrictive relative clauses. Kuno (1973) discusses what is eligible for relativization and claims that relativization in Japanese can apply only to a topic NP. This functional constraint can account for most relative clause examples because the so-called 'aboutness' relationship between topic and comment can be also found between a head noun and its relative clause. However, there are two types of counterexamples: one is that topicalization is acceptable but relativization is not as in (3.126b), and the other is that relativization is acceptable but topicalization is not as in (3.127b).

(3.126) (Kuno 1973)
a sakana-**wa** tai-ga ii.
fish-TOP snapper-NOM good
'Speaking of fish, snapper is good.'

b * [tai-ga ii] sakana
snapper-NOM good fish
'The fish, as for which snapper is good'

(3.127) (Kuno 1973)
a [kono keeki-o yaita] ondo
this cake-ACC baked temperature
'the temperature at which I baked this cake'

b sono-onodo *-wa/??-de-wa kono-keeki-o yaita.[130]
that-temperature-TOP/-at-TOP this-cake-ACC baked
'Speaking of that temperature, I baked this cake.'

[130] When the subject is marked by *-dewa*, the sentence can be judged acceptable, though that interpretation is pragmatically quite awkward.

Matsumoto (1991: 396) examines Kuno's hypothesis and claims that relativization and topicalization are not necessarily compatible. The functions of relativization and topicalization are contradictory because the topic in the 'topic-comment' construction is typically an activated definite element while the head noun of a relative clause is often a brand-new element. Thus 'there are differences in terms of information structure and of the degree of pragmatic assertiveness between relative clause and topic-comment constructions.'[131] Then she introduces a frame-semantic approach to deal with this issue and argues that a 'relative clause provides a frame into which the denotation of the head noun can be integrated to identify or characterize the referent of the NP' (ibid). Therefore the head nouns must be associated with possible participant roles in the domains evoked by the relative clauses. This means, however, that relativization is quite freely applicable to any sentential elements since most of them usually have some kind of participant roles in the frame evoked by the sentence.

However, this does not seem to apply to RelQ because, as shown by the small number of examples in the data (only four examples in my data and only 13 examples in Kim (1995)), the distribution of this NQ construction type is actually very limited. Not all FL examples can have their RelQ counterparts as shown in (3.128) and (3.129). The syntactic structures of (3.128a) and (3.129a) are equivalent, but relativization of the host noun is only acceptable in (3.128b), but not in (3.129b).

(3.128)

a gakusei-ga **hon**-o san-satu katta.
student-NOM book-ACC 3-CL bought
'A student bought three books.'

b [gakusei-ga san-satu katta] **hon**
'the book that a student bought three copies of'

[131] Matsumoto (ibid: 394) further discusses a functional difference between the two constructions. The comment part of the topic construction is new information (pragmatic assertion), while the information denoted by a typical relative clause is pragmatically presupposed.

(3.129)

a gakusei-ga **hon**-o san-satu yonda.
student-NOM book-ACC 3-CL read
'A student read three books.'

b ??/*[gakusei-ga san-satsu yonda] **hon**
(Intended): 'The books that a student read three of'
'books, which a student read three of'

Thus, the relativization of the host noun in FL is possible but not always acceptable. Then when is relativization available for FL?

There are two types of relative clauses; one is restrictive and the other is non-restrictive, but they are syntactically not distinguished and only pragmatically differentiated in Japanese.

(3.130) [ashi-ga hayai] Taroo
leg-NOM fast
'Taro who can run fast' or 'Taro, who can run fast'

If there are more than two *Taro*s in the given context, the relative clause is interpreted as restrictive, while if there is only one *Taro* in that context, it is interpreted as non-restrictive. The former context is quite unlikely when the head noun is a proper noun as in (3.130). On the contrary, when the head noun is a common noun, it is restrictive and the non-restrictive interpretation is quite awkward.

(3.131)

a Taroo-ga **hon**-o yonda.
-NOM book-ACC read
'Taro read a book/books.'

b [Taro-ga yonda] **hon**
-NOM read book
'the book(s) that Taro read'

This distinction is relevant to the acceptability of RelQ.

As shown in (3.128) and (3.129), the (a) examples are both acceptable. The host noun in an FL is considered to represent a type or a non-bounded set, and therefore the *three books* in the

(a) examples can refer to any entities as long as they are categorized as *books*.[132] When an unmodified noun in a simple sentence is relativized as in (3.131b), it is not impossible to interpret that the head noun has a generic reading with a non-restrictive relative clause. However, such interpretation is quite unlikely because what the relative clause denotes is too trivial to modify the generic category. The head noun in examples like (3.131b) refers to particular individuals and the relative clause is restrictive. Thus, although the FL and RelQ appear to be constructionally related, the host noun denotation shifts from type to individual(s) or from generic to specific when FL examples are paraphrased to their RelQ counterparts. In a simple sentence like (3.131a), the noun in question can be interpreted to denote individuals, and it can be relativized without causing any semantic shift. However, when the host noun in FL is relativized, the head noun in the RelQ is structurally required to refer to a particular entity but at the same time it has to denote a type or a nonbounded set. In order to fulfill these two requirements simultaneously, the head nouns of (3.128) and (3.129) need to be interpreted to denote 'multiple copies of the same book'. This reading is acceptable with the predicate *buy* in (3.128); however, it is not with the predicate *read* in (3.129). One can **buy** *three copies* of the same *book*, but does not **read** *three copies* of the same *book*. This gap in interpretation of the host nouns makes (3.129b) unacceptable.[133]

It is possible for the head noun to represent a plural entity. (3.132a) has a Pre-N MP and (3.132b) has a JX MP as the head noun respectively.[134]

(3.132)

a [Taroo-ga yonda] **san-satu-no hon**

[132] I will further discuss the denotations of the host noun and the NQ in the three NQ constructions in Chapter 5.
[133] The 'generic and non-restrictive' interpretation is possible, but again very unlikely due to the fact that the restriction is too trivial.
[134] In (3.132), the NQs are extracted together with their host nouns. I do not assume that RelQ is relevant to either Pre-N or JX because the functional mismatch found in RelQ is only attributable to the functional properties of FL.

-NOM read 3-CL-GEN book

b [Taroo-ga yonda] **hon san-satu**
book 3-CL
Both: 'The three books that Taro read'

The subject-object asymmetry is also relevant to this phenomenon. Relativization of a subject host noun is usually not acceptable as in (3.133).

(3.133)
a kinoo **gakusei-ga** san-nin Hanako-o nagutta.
yesterday student-NOM 3-CL -ACC punched
'Three students punched Hanako yesterday.'

b * [kinoo san-nin Hanako-o nagutta] gakusei
Intended: 'The students three of which punched Hanako'

Although RelQ has very strong restrictions due to the contradictory conditions simultaneously required by the FL and relative clause constructions, RelQ is less restricted when the predicate in the relative clause an existential predicate.

(3.134)
a [butudan-ni kore-made hitotu suwatte gozatta] **Kannonsan-ga** hutatu
altar-in now-until 1.CL sitting exist.HON Avalokitesvara-NOM 2.CL
suwatte gozatta.
sitting exist.HON
'There was one Kannon goddess sitting in the Buddhist altar a moment ago, and now there are two of them.' (Kim 1995: 235 (56))

b butudan-ni kore-made **Kannonsan-ga** hitotu suwatte gozatta.
altar-in now-until Avalokitesvara-NOM 1.CL sitting exist.HON
'There was one Kannon goddess sitting in the Buddhist altar a moment ago.'

The head noun of this type does not seem to represent a type or a non-bounded set, rather a specific set of individuals since its counterpart Pre-N expression is almost synonymous.

(3.135) [butudan-ni kore-made suwatte gozatta] **hutatu-no** Kannonsan
altar-in now-until sitting exist.HON 2.CL-GEN Avalokitesvara
'the two Kannon goddesses sitting in the Buddhist altar a moment ago'

In a RelQ with a non-existential predicate, the head noun refers to a type or non-bounded set, while a RelQ with an existential predicate, the head noun refers to a bounded set whose members

are exhaustively specified by the preceding relative clause. It makes sense that RelQ and Pre-N have similar functions since both denote specific individuals. The quantitative information denoted by the NQ in a relativized Pre-N is a fixed attribute of the plural entities as a set, while that in RelQ is introduced as new information and not established as a fixed attribute. Therefore, the quantity represented in the latter construction is more flexibly changeable, and actually (3.134a) describes a change of the given entities in quantity in the relative clause, namely from 'one' statue to 'two' statues.

3.6 Summary

The FQ in FL encodes new information and often has narrow focus. The constraints on Q-float consist of a structural factor and a functional factor. Structurally, being not case-marked, FQs have to maintain their semantic relationships with the predicates on their own. Thus, FQs are limited to arguments which are subcategorized by the predicates. Functionally, the quantitative information denoted by the FQ needs to be interpreted as an unpredictable quantity that has a corresponding hypothetical open proposition (HOP). The plausibility of HOP heavily depends on the pragmatic conditions.

FL has two NQ constructions that have constructional similarities. The fronted NQ construction (F-NQ) is considered as a word order variation of FL and has a slightly different information structure. The relativized NQ construction (Rel-Q) has some additional restriction on the interpretation of the head noun. Although these two constructions have some differences from FL, they have the basic functional commonality, namely that the FQ denotes a new/unpredictable quantity.

Chapter 4 Juxtaposed NQ Construction (JX)

In this chapter I discuss the third major NQ construction, the juxtaposed NQ (JX) construction. This construction has barely been discussed in the literature partly because it occurs less frequently than the other two NQ constructions (cf. Downing 1996). There are some studies on this construction but their major concern is its syntactic relationship to the FL construction. For example, Okutsu (1998) deals with many JX and FL examples and discuss when they are mutually paraphrasable. Although he does not assume any syntactic transformation, he marginalizes the pragmatic/functional differences between FL and JX.[135] In this chapter, however, as in the functional studies by Kim (1995) and Downing (1996), I discuss the functions and the constructional characteristics of JX, comparing them to those of Pre-N and FL. I also deal with two other NQ constructions and discuss their functional similarities to and differences from the other NQ constructions.

4.1 Basic structure of JX

In a JX MP, the host noun is immediately followed by an NQ, and a case-marker is attached to the whole MP as shown in (4.1).

(4.1)
a [**gakusei san-nin**]-ga kita.
student 3-CL-NOM came
'Three students came.'

The superficial difference between FL and JX is the location of the case marker. Therefore, technically speaking, FL and JX are not distinguishable when the case marker is omitted.[136]

(4.2) gakusei san-nin kita.
student 3-CL came

[135] In Okutsu (1969) he argues that FL is syntactically derived from JX construction but this claim is denied in Okutsu (1998).
[136] Out of the blue, examples like (4.2) are ambiguous. However, as will be shown in this chapter, FL and JX are different in function and distribution pattern. So they can be properly interpreted according to the discourse context.

'Three students came.'

This indicates JX's constructional similarity to FL.[137] However, there are some crucial differences between the two constructions. First, the NQ is out of the host NP in FL, therefore other clausal elements can be inserted between the host noun and the NQ while such insertion is impossible in JX since the NQ and the host noun are in the same NP. When the temporal adverb *kinoo* 'yesterday' is inserted before the NQs as in (4.3), only FL is acceptable. Hence the host noun and the NQ in JX are inseparable.

(4.3)

a * [gakusei **kinoo** san-nin]-**ga** kita. (JX)
student yesterday 3-CL-NOM came

b gakusei-**ga** **kinoo** san-nin kita. (FL)
-NOM yesterday

Both: 'Three students came yesterday.'

Second, the order of the host noun and the NQ is irreversible. Reversing the order in a JX MP seems acceptable as in (4.4), but it is actually its 'fronted FQ' counterpart since this marked word order has the same distributional restriction as FL does.

(4.4) **san-nin** gakusei-ga kita.
3-CL student-NOM came
'Three students came.'

As in (4.5b), the reversed word order is not acceptable with adjunct host NPs.[138] If the fronted NQ is still in the same NP, this word order variation should also be allowed for adjunct host nouns; however, it is not the case.[139]

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[137] Kim (2000) proposes that FL and JX are diachronically related and share a proto-construction in Old Japanese.

[138] There is one exceptional case. When the NQ *hitori* 'one.CL(person)' is used with a pronoun or a proper noun in JX, the reversed word order is also acceptable. The meaning is more emphatic than that of the non-reversed counterpart.

(1)a sekinin-ga [kare/Taroo **hitori**]-no kata-ni kakatteiru.
responsibility-NOM he/Taro one.person-GEN shoulder-DAT hangRSLT

b sekinin-ga [**hitori** kare/Taroo]-no kata-ni kakatteiru.
Both: 'The responsibility completely depends on him/Taro alone.'

(4.5)

a watashi-wa [gakusei san-nin]-to itta.
I-TOP student 3-CL-with went

b * watashi-wa [**san-nin** gakusei]-to itta.
Both: 'I went with three students.'

Is it possible to construe a JX MP as a compound? I assume that the host noun and NQ are still independent elements because of the following three reasons: first, the host noun can be pronominal as in (4.6) and a pronominal expression is unlikely to be part of a compound.

(4.6) [**karera** san-nin]-ga kita.
they 3-CL-NOM came
'The three of them came.'

Second, the NQ can be modified as in (4.7) where a relative clause is inserted between the host noun and NQ.

(4.7) [Taroo-tati [**soko-ni ita**] san-nin]-ga deteitta.
-PL there-at existed 3-CL-NOM left
'The three people, Taro et al., who were there left.'

Third, the host noun and NQ are pronounced as two separate words with their own word accent, not as a single unit with a compound accent (Kubozono 1994: 18). [140]

(4.8)

However, this kind of paraphrase is not allowed with any other NQ. It may be possible to interpret the NQ is actually floating and preposed since floating NQs can be hosted by Genitive NPs. However, if the NQ is placed at the default pre-verbal position or another element is inserted between the NQ and the host noun, the sentences are no longer acceptable. Thus this is a very restricted idiosyncratic case.

(2)a * kare/Taroo-no kata-ni **hitori** kakatteiru.
he/Taro-GEN shoulder-DAT one.person hangRSLT

b * hitori **sekinin-ga** kare/Taroo-no kata-ni kakatteiru.
one.person responsibility-NOM he/Taro-GEN shoulder-DAT hangRSLT
'The responsibility completely depends on him/Taro alone.'

[139] As will be shown in 4.2, the distribution of JX is wide and adjunct host nouns are basically acceptable.

[140] Here's an example of compound accent. Capital letters indicate high-pitched and lower letters low-pitched.

(1) SYAkai + SYUgi → syaKAI-SYUgi (compound accent)
society ism 'socialism'

Two different word accents are merged to one compound accent. This kind of merge of individual word accents is also found in the NQ-N construction as in (2) (cf. Chapter 2). In this respect, the host noun and the NQ in an NQ-N MP are more tightly merged than those in a JX MP.

(2) saN-NIn + KYOodai → saNNIN-KYOodai
3-CL brother 'three brothers'

a KYOodai saN-NIn (separate word accent)
brother 3-CL

b * kyoODAI-SAnnin (compound accent)[141]
'three brothers/sisters'

Shibatani claims that Japanese has another type of compounding, which does not take place in the lexicon but at the post-syntactic level. Such post-syntactic compounds 'are distinct from lexical compounds in that the members making up the compounds have independent syntactic status' (1990: 247). The lexical accents of the members are retained in post-syntactic compounds. So a JX-MP can be regarded as a subtype of post-syntactic compound. However, since the elements in the JX MP can be modified by a relative clause or a genitive expression, it is not likely that the host noun and the NQ are compounded. Thus, the host noun and the NQ in a JX MP forms a unit, but it is not united as tightly as a nominal compound.

A JX MP may have some additional elements besides a host noun and an NQ as in (4.9), but it is very unusual, if not impossible.

(4.9) [Taroo-ra gakusei san-nin]-ga kita.
-PL student 3-CL-NOM came
'The three students of Taro et al. came.'

In sum, the order of the host noun and NQ in JX is strictly fixed, which is the same as the default word order in the FL construction. On the other hand, both the host noun and NQ are in the same syntactic constituent as in Pre-N. These constructional similarities are related to their functional similarities to FL and Pre-N respectively.

4.2 Distribution of JX

This construction can be used with host NPs of any grammatical roles as in (4.10). The distribution of JX is as wide as that of Pre-N.

[141] This is not the only nominal compound accent pattern; however, other possible nominal compound accent patterns are not available for this example, either.

(4.10)

a	gakusei san-nin-**ga** kita. student 3-CL-NOM came 'Three students came.'	(Nominative)
b	gakusei san-nin-**o** taihosita. student 3-CL-ACC arrested '(I) arrested three students.'	(Accusative)
c	boo san-bon-**ni** musubituketa. bar 3-CL-DAT tied '(I) tied (it) to the three bars.'	(Dative)
d	gakusei san-nin-**to** itta. student 3-CL-with went '(I) went with three students.'	(Comitative)
e	kinzyo-no kooen mittu-**e** itta. neighborhood-GEN park 3.CL-to went '(I) went to three parks.'	(Allative)
f	kinko mittu-**kara** okane-o nusunda. safe 3.CL-from money-ACC stole '(I) stole money from three safes.'	(Ablative)
g	himo san-bon-**de** koteisita. rope 3-CL-by fixed '(I) fixed (it) with three ropes.'	(Instrument)
h	ringo san-ko-**no** nedan-o kiita. apple 3-CL-GEN price-ACC asked '(I) asked the price for three apples.'	(Genitive)
i	sinai-no gakkoo san-koo-**de** osieta. in.city-GEN school 3.CL-at taught '(I) taught at three schools in the city.'	(Locative)

The distribution of JX in terms of the grammatical relations of host NPs is quite wide; however, the use of JX is pragmatically restricted and the actual frequency of JX is not so high.[142] The distribution of the three NQ constructions is summarized in Table 4.1.

[142] According to Kim (1995), the frequency of each NQ construction in his database is as follows; Pre-N, 45.8%; FL, 21.4%; JX, 6.4%. He deals with five other NQ constructions as well. However, there are some problems with his classification. He includes nominal compounds with a numeral in his inventory as QN; however, many of them are fossilized fixed expressions and do not have counterpart NQ constructions. If the NQ examples are excluded, the frequencies of the three constructions will be as follows; Pre-N, 53.0%; FL, 24.7%; JX, 7.4%. Note that the data source does not include newspaper articles. If the data included newspaper articles, the proportion of JX might be much higher.

Table 4.1 Acceptability of NQ constructions in terms of the host NP's grammatical role

	NOM(-*ga*) /ACC(-*o*)	DAT (-*ni*)	Genitive (-*no*)	Alative (-*e*)	Ablative (-*kara*)	Comitative (-*to*)	Locative (-*de*)	Instrument (-*de*)
Pre-N	✓	✓	✓	✓	✓	✓	✓	✓
JX[143]	✓	✓	✓	✓	✓	✓	✓	✓
FL	✓	?	?	??	??	??	??	*

(✓= almost always acceptable, ? = sometimes acceptable, ?? = rarely acceptable, * = never acceptable)

Although Downing (1996) states that this construction is not uncommon, there were not many examples in her data. She claims that this is partly because she excluded examples with case-particle deletion like (4.2). However, since such deletion is limited to oral context, it is doubtful that her decision 'resulted in a greater loss of' this construction in her data. Instead, this infrequency is mainly due to the source genres in her texts. First, she included speech data, but this construction is barely used in casual speech. It is much more likely to be found in written texts. Secondly, the genres in which this construction is frequently used are limited. Compared to other NQ constructions, this construction is most dominantly used in newspaper articles, which usually are full of new information. Thus, even though a JX MP can be marked by most case markers, the actual distribution of JX is pragmatically quite limited. In the following sections, I analyze the functions of JX taking its unique distribution patterns into account.

4.3 Functional characteristics of JX

In the preceding literature, quite a few studies have mentioned this construction (Miyagawa 1989, Kato 1998, etc.); however, only a few of them conducted comprehensive analyses of the functions of this NQ construction. Downing (1996) points out two basic functions of JX, i.e. 'reference' and 'listing', and claims that the basic relationship between the host noun and NQ in

[143] Tentatively I regard these JX examples as all acceptable, given appropriate contexts. Pragmatic conditions for this construction will be discussed in the later sections of this chapter.

both cases is 'appositive.'[144] Kim (1995) claims that this construction has two major functions, i.e. 'anaphoric' and 'indefinite-specific', which roughly corresponds to Downing's two readings respectively, but he emphasizes that the common characteristic 'specificity' is shared in both cases. In this section, I first analyze the functions of these two readings and show that 'apposition' is the basic function of JX. As pointed out in Kamio (1983: 92), I assume that the syntactic template of this construction is not exclusive for the JX construction but based on the general appositive construction, and I discuss the functions of this construction comparing them with the functions of FL and Pre-N.

Downing claims that the host noun and NQ in a JX MP can denote either new or old information. This difference may cause the JX construction to have ambivalent functions. In order to clarify the functional differences in this construction, I introduce two subtypes for JX, JX-spec (=specific) and JX-list. JX-spec generally denotes specific entities and those entities are often regarded as old information, while JX-list exclusively represents new information.[145] In the following sections, I will show some unique aspects of each reading.

4.3.1 Specific reading

The host noun of JX can be definite and represents old information. This point is clearly shown in the following examples in which the host noun is a pronoun or consists of a proper noun. The pronoun is definite by default and the host noun in (4.11b), which is the proper noun *Taroo* followed by the plural marker, *-tati*, represents a set of definite individuals. These host nouns are followed by an NQ that specifies the number of the members in the set.

(4.11)

[144] Okutsu (1969) claims that the NQC (=JX) construction has an appositive reading and that the host noun is the head and the NQ is subordinate (appositive) to the head.

[145] Okutsu (1969) distinguishes JX into two subtypes: one with a 'definite' host noun and the other with an 'indefinite' host noun. His classification may look like my distinctions, but the former type is not necessarily definite.

a [**karera** san-nin]-ga kita.
they 3-CL-NOM came
'The three of them came.'

b [**Taroo-tati** san-nin]-ga kita.
-PL
'Taro et al., the three of them, came.'

Kim (1995) classifies this class as 'anaphoric NQs' since the host noun is definite and refers to an activated or accessible set of individuals. The information denoted by the NQ is redundant and the function of the NQ is deemed as 'emphasis through individuation' (Downing 1996).

It is impossible for the other two NQ constructions to have a proper noun for their host nouns (Downing 1996: 229).[146]

(4.12)

a * san-nin-no Taroo-**tati**-ga kita. (Pre-N)
3-CL-GEN -PL -NOM came

b * Taroo-**tati**-ga san-nin kita. (FL)
-PL-NOM 3-CL came
Impossible: 'Three people including Taro came.'

(4.12a) is acceptable if it is interpreted as '*three Taros came*' as Downing points out. However, such an interpretation is very unlikely, which makes us judge these sentences as unacceptable. In (4.12b) the host noun does not represent a 'homogenous set,' therefore the sentence is not acceptable. If the host noun is not modified by the plural marker, technically speaking, the sentence may be acceptable. However, again since it is quite unlikely that a group of *Taros* exists in an ordinary situation, the sentence is quite awkward. Thus the members of the groups in sentences (4.12a,b) have to be homogeneous, while in JX-spec, the host noun is a referring expression and simply functions as a label of the group of unique individuals. Therefore each

[146] When the host noun is a pronoun, Pre-N and FL counterparts are not acceptable, either.

(1) * san-nin-no karera-ga kita. (Pre-N)
3-CL-GEN they-NOM came
'The three of them came.'

(2) * karera-ga san-nin kita. (FL)
they-NOM 3-CL came
'Three of them came.'

member does not have to share a specific membership feature to be a member in the set besides being counted by the same classifier, *-nin*.

Topicalization is likely for JX-spec because both the host noun and NQ can represent old information, so the nominative case marker in (4.11) can be replaced by the topic marker *-wa* as in (4.13a). However, when the numeral is 'one,' the sentence with the topic marker sounds quite awkward, while the nominative counterpart is perfectly fine as in (4.13b). The default number of a referent is likely to be 'one' when it is not specified. So when it is explicitly expressed as 'one,' some kind of pragmatic prominence is created. In (4.13b), the NQ functions like an adverb and creates the exclusive interpretation that *it is only him*. This interpretation makes the MP focal and therefore the MP is not compatible with the topic marker.

(4.13)

a [Taroo-tati san-nin]-**wa** kuruma-de kita.
-PL 3-CL-TOP car-by came
'As for the three people including Taro, they came by car.'

b [**kare hitori**] *-wa/ -ga kuruma-de kita.
he 1.CL -TOP/ -NOM
'Only he went to the hospital.'

As Downing (1996: 229) claims, a JX-spec MP refers to an activated referent in the discourse context and the information denoted by the NQ is normally predictable. Therefore in JX-spec, the host noun alone has enough referential information to identify the referent(s) and the NQ is optional and redundant in terms of the referential function. However, if the referent is recognized as a mere group, instead of a set of fully identified individuals, where the hearer does not know the exact number of the members in the group, the NQ can convey to the hearer new information or at least supplementary information about the referent. In sum, the NQ in JX-spec is redundant in terms of the referential function but may provide some supplementary information of the referent.

4.3.2 List reading

JX-list has three unique characteristics. First, in JX-list, both host noun and NQ in an MP represent new information. Therefore, the MP cannot be marked by the topic marker *-wa* as in (4.14).[147]

(4.14) [gakusei san-nin]-ga/***wa** kita.
student 3-CL -NOM/-TOP came
'Three students came.'

Second, a typical example of JX-list has a 'list reading'.[148] Given a list of multiple entries, where each entry in the list consists of an item and its quantity, the default order will be 'item-quantity.' If the order is reversed as in (4.15b), it is hardly recognized as a list.

(4.15)
a [ringo san-ko](-to), [banana go-hon](-to), [budoo huta-husa](-to)….
apple 3-CL (-and) 5-CL (-and) grape 2-CL (-and) …

b ?? san-ko ringo (-to), go-hon banana (-to), huta-husa budoo (-to)….
Both: 'Three apples, five bananas, two bunches of grapes, …'

FL also has the same reading when it has a coordinated construction as in (4.16b).

(4.16)
a [ringo san-ko]-to [banana go-hon]-**o** kudasai. (JX-list)
apple 3-CL-and 5-CL-ACC give.me.please

b ringo-**o** san-ko-to banana-**o** go-hon kudasai. (FL)
-ACC -and -ACC
Both: '(I) would like to buy three apples and five bananas.'

The two sentences are semantically equivalent and both can be used for ordering a list of things simultaneously specifying their amounts. However, there is a subtle difference between them. JX-list sounds like that the items and their amounts have already been determined before

[147] If a contrastive reading is available, *wa*-marking in JX-list is acceptable. For example, looking at a shopping list, you can say the following sentence, contrasting other entries in the list.
[ringo mittu]-**wa** katta (-ga hoka-wa kawanakatta).
apple 3.CL-CNTR bought(-but other-CNTR buy.NEG.PST)
'(I) bought three apples (but no other things).'

[148] Downing (1996: 228) also points out that JX has a 'list reading'. I use the term 'list reading' not only when the clause has more than one MP but also when it has only one MP.

utterance, while FL sounds like that the choice of items may have been made but that their amounts are not necessarily pre-determined. The value of the NQ in FL can be interpreted as more unpredictable than that in JX-list, in other words, the latter is more likely to be pre-determined than the former.

Kim (1995: 218) points out the function of 'categorical negation' of this construction, in which the numeral 'one' co-occurs with a negative predicate. The following example depicts *Taro*'s feeble character by negating his capability of *killing even the smallest creature* that a man can kill. However, as shown in the translation, this often means some additional implications not just its literal meaning.

(4.17) Taroo-wa [musi ip-piki](-mo) koros-e-nai.
-TOP insect 1-CL (-P) kill-POT-NEG
'Taro cannot kill a single insect. (=Taro is very gentle.)'

Kim presents a unique analysis of the categorical negation of this construction. He claims that this single entity denoted by the numeral 'one' is 'indefinite but specific' since it is the last member of the given set. Hence, even in this example, 'specificity' is observed in that sense. However, it is not clear why the last member has to be interpreted as '(indefinite-) specific,' because the last one is not necessarily the weakest one and any member can be left as the last one. Rather, what the numeral 'one' indicates here is that the amount is minimal, not necessarily that it is the last or the weakest member. In this categorical negation use of JX, the category itself is negated; therefore the specificity of the members in the group is irrelevant to that negation. In the above example, it is very unlikely that the speaker has in mind a particular *insect* that *Taro* is actually trying to *kill*. Rather the speaker chooses the most minor category relevant to the situation denoted by the proposition, in this case 'the least difficult creature to kill' and the minimum amount of the members in the category, which always contains the numeral 'one.' By

negating this pair of the most minor category and the minimum amount, it can negate the entire things and categories relevant to the proposition.[149]

Kim (ibid: 219) also claims that this categorical negation is 'to negate an entire set in an exhaustive manner'. By negating a chosen single member in a given set, 'the rest of the members in the set are conceptually cancelled out'. However, if we want to simply negate the category itself, we would use the FL construction instead of the JX construction.

(4.18) Taroo-wa musi-ga ip-piki-mo koros-e-nai.
-TOP insect-NOM 1-CL-P kill-POT-NEG
'Taro cannot kill even one insect.'

These two sentences (4.17) and (4.18) can be ambiguous when the case marker on the host NP is omitted. However, these two have a crucial difference. As shown in (4.17), marking of the pragmatic particle *mo* on the NQ is optional, while it is obligatory for the NQ in FL examples like (4.18). If the particle *mo* is dropped as in (4.19), the sentence is no longer categorical negation.[150]

(4.19)?? Taroo-wa musi-ga ip-piki koros-e-nai.
-TOP insect-NOM 1-CL kill-POT-NEG
'Taro cannot kill a single insect.'

Thus, there are two types of categorical negation according to the syntactic structures. The categorical negation with JX negates not only the members in the category but also any element in the relevant semantic categories. With this exhaustiveness, any *killing* activities are negated in (4.17). On the contrary, the categorical negation by FL only literally negates the

[149] In some cases where content classifiers are involved, the lower degree might be acceptable instead of the entire negation. In the following example, since the unit of millimeter is quite small, it practically negates any error.
[gosa iti-miri]-mo yurusarenai
error 1-milimeter-FP intolerable
'Even an error of one milimeter is intolerable'

[150] Actually, such a sentence is quite awkward since it is not clear why the NQ is explicitly stated. If it is an affirmative sentence it may make sense to distinguish the ability to kill **one** insect from the ability to kill **two or more** insects. However, since it is a negative sentence, such distinction does not make sense.

category in question and does not necessarily evoke any further implication. In (4.18), what is negated is *Taro's insect-killing* and his other killing-activities are not certain from this sentence.

This categorical negation construction even has variations with wh-words like below.[151] Each wh-word is followed by the relevant NQ whose numeral is 'one' respectively, and the predicate is marked by the negative marker. The pragmatic particle *-mo* on the NQ is often optional in the categorical negation, but it is not allowed in these examples.

(4.20)

a [**nani** hitotu](*-mo) oboetei-**nai**.
what 1.CL (-P) remember-NEG
'(I) don't remember anything at all.'

b [**dare** hitori](*-mo) ko-**nakatta**.
who 1.CL (-P) come-NEG.PST
'No one came.'

Only these two wh-words have this usage and other wh-words such as *doko* 'where' *itu* 'when' are not available for the categorical negation.[152]

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[151] These examples can be analyzed as FL as well as JX since they have no overt case-marking on either the host noun or the NQ.

*nani-**o** hitotu /*nani hitotu-**o** oboeteinai.
what -ACC 1.CL what 1.CL-ACC remember.NEG
'I don't remember anything.'

There is no positive evidence for either analysis. However, there is some negative evidence against the FL analysis. An obligatory *mo* marking on the NQ is required for the categorical negation of FL, while it is optional for that of JX. This suggests that the JX analysis is more likely since the wh-NP categorical negation does not have *mo* on the wh-NP.

[152] NQ constructions cannot express categorical negation with these wh-words. Instead simply the focus particle *mo* is used.

(1) doko(-ni)-**mo** ikanai.
where(-DAT)-P go.NEG
'(I) will not go anywhere.'

(2)a itu-**mo** ie-ni inai.
when-P home-LOC exist.NEG
'(He) is not at home anytime.'

b ittoki-**mo** wasurenai.
one.moment-P forget.NEG
'(I) will never forget (it) even for a single moment.'

This construction is also available for *dare* 'who' and *nani* 'what'.

(3)a **dare**-mo siranai.
who-P know.NEG
'Nobody knows.'

b **nani**-mo siranai.

(4.21)

a * [doko hitotu/i-kkasho] ik-anai.
where 1.CL/1-CL(place) go-NEG
'I don't go anywhere.'

b * [itu ittoki] wasure-nai.
when 1.moment forget-NEG
'I will never forget (it) at any moment.'

In addition to the categorical negation, the JX construction with the NQ whose numeral is 'one' can be used in affirmative sentences, which assigns a 'minimal' reading. In (4.22a), it means that the requirement for the handling is minimal, i.e., just *one finger*. In (4.22b), it literally means that minimal observation about *the way a butterfly flies* is enough to know the current condition of the given *butterfly*, which implies that the person has a lot of knowledge about *butterflies*.

(4.22)

a [yubi ip-pon]-de soosa dekiru.
finger 1-CL-by control do.POT
'(You) can control (it) with one finger. (=It is very easy to handle.)'

b [choo-no tobikata hitotu]-o mireba, subete-no koto-ga wakaru.
butterfly-GEN way.tofly 1.CL-ACC see.if all-GEN thing-NOM understand
'Watching a butterfly flying, (I) can tell all the conditions of that butterfly.'

The numeral 'one' in these examples is hardly replaced by another numeral. Relevant to categorical negation, another contrast between JX and FL can be found in the following examples with the focus particle *sika* (see §3.3.1.2). In JX the scope of *sika* covers both host noun and NQ, while in FL it covers only NQ.[153] (4.23a) means that nothing else was *bought* while (4.23b) means that other things might have been *bought*.

(4.23)

a hon san-satu-**sika** kawa-nakatta. (JX)
book 3-CL-only buy-NEG.PST

---

what-P know.NEG
'(I) don't know anything.'

[153] The focus particle -*sika* is also compatible with JX-spec. The interpretation is the same. The potentially available elements are all negated besides the referent marked by the particle.

[Taroo-tati san-nin]-**sika** konakatta.
-PL 3-CL-FP didn't.come
'Taro et al., only the three of them, came.'

'I bought only three books (and nothing else).'

b hon-o san-satu-**sika** kawa-nakatta. (FL)
-ACC
'I bought only three books (and no other books).'

The difference in interpretation between JX and FL reflects the difference in how the quantitative information represented by the NQ is presented in the discourse context. I will come back to this issue in Chapter 5.

4.3.3 Discussion

In the preceding sections, I analyzed the basic functions of the two subtypes of JX. In this section, I discuss the general characteristics of this construction, looking at the similarities and differences of the two subtypes as well as comparing JX with Pre-N and FL.

4.3.3.1 Internal structure of JX MP

Most JX examples consist of a host noun and an NQ in the MP and those elements have an appositional relationship. Interestingly, both JX-spec and JX-list are expandable and may have more than two elements in the MP as in (4.24). (4.24a) has an exhaustive quantifier and (4.24b) has two host nouns.

(4.24)

a [sankasya 30-nin **zen'in**]-ga moosikonda.
participant -CL all.people-NOM signed.up
'All the 30 participants signed up.'

b [**Taroo-ra gakusei** 10-nin]-ga kita.
-PL student -CL-NOM came
'Ten students including Taro came.'

However, this does not mean that a JX MP is unconditionally expandable. Rather, such examples with multiple elements are barely found, if not impossible. In those examples, is the appositional relationship still intact? In the following section, I will analyze the internal semantic relationship

among the elements in a JX MP and discuss the similarities and differences of the two subtypes of JX.

It may be possible to simplify the word order restriction on JX as 'the host noun must precede the NQ,' as shown in (4.4). This is also true for JX examples which have three or more elements in the MP.

(4.25)

a [Taroo-ra gakusei 10-nin]-ga kita.
-PL student -CL-NOM came

b * [Taroo-ra 10-nin gakusei]-ga kita.

c * [gakusei Taroo-ra 10-nin]-ga kita.

d * [gakusei 10-nin Taroo-ra]-ga kita.

e * [10-nin Taroo-ra gakusei]-ga kita.

f * [10-nin gakusei Taroo-ra]-ga kita.

All: 'The ten students including Taro came.'

As discussed above, the host N and NQ in JX are irreversible. This general principle explains the unacceptability of the above examples except (4.25c), in which two host nouns both precede the NQ. In order to explain the unacceptability of (4.25c), we need to examine the relationship between the two host nouns. Why are they irreversible in the first place?

Based on the appositional relationship, in the acceptable word order example, the adjacent elements in the MP can be paraphrased with a sentence with the topic marker *-wa* and a nominal predicate marked by the copula as in (4.26).

(4.26)

a Taroo-ra-**wa** gakusei-**da**.
-PL-TOP student-COP
'Taro et al. are students.'

b gakusei-**wa** 10-nin-**da**.
student-TOP -CL-COP
'The number of students is 10.'

On the other hand, in the unacceptable examples, such paraphrasing is not available.[154]

(4.27)
a ? gakusei-**wa** Taroo-ra-**da**.
student-TOP -PL-COP
'The students are Taro et al.'

b ? 10-nin-**wa** gakusei-**da**.
-CL-TOP student-COP
'The ten people are students.'

How can we interpret this paraphrasablity and the pragmatic relation of the elements in a JX MP? Sakahara (1990) analyzes the copula sentence, A-*wa* B-*da* 'A is B' and claims that this construction has two different usages: 'predication' and 'identification.' 'The predication involves attribution, or addition of a property (B) to the subject NP (A) whose referent has been identified (or is identifiable) independently of that property. The identification is the association of an object (B) to a non-referential NP (A), that is, the selection of a value (A) by a role function (B)' (ibid: 29). The following sentence can be interpreted either as a predicating or identifying sentence.[155]

(4.28) 1929-nen-ni-wa, daitooryoo-wa akanboo-deatta.
-year-in-TOP president-TOP baby-COP.PST
'In 1929, the president was a baby.' (ibid: 40)

If it is a predicating sentence, the above sentence means that the current president was a baby in 1929. On the other hand, if it is an identifying sentence, it means that the role 'president' with the parameter 'in 1929' takes the value 'a baby', that is, 'the president in 1929 was a baby.' The former one can be paraphrased as 'B-*ga*(NOM) A-*da*' with the basic meaning unchanged, while

[154] Of course, these sentences in (4.27) are both grammatical. However, they are unnatural unless the topichood of the subjects is enhanced like below.

a **sorera-no**-gakusei-wa Taroo-ra-da.
those-GEN student-TOP -PL-COP
'Those students are Taro et al.'

b **sono**-10-nin-wa gakusei-da.
that-10-CL-TOP student-COP
'Those ten people are students.'

[155] Cf. Fauconnier (1985) for further analysis of the original English example of (4.28).

the latter type is not allowed to have this paraphrase. The meaning found among the elements in a JX MP is predication, not identification.

Thus the word order restriction in a JX MP is caused by this pragmatic relationship between the immediately adjacent elements. There is an information flow in the JX MP, in which a more topical element comes at the beginning and a more predicative element at the end. Then, it is possible to map this pragmatic relation onto the syntactic template. In JX-spec, the elements (host noun and NQ) appear on the left-hand side of the scale, while in JX-list, the elements appear in the right-hand side. Thus, the two different readings of JX-spec and JX-list that share the same syntactic structure are caused by the different values (location) of the elements on the scale.

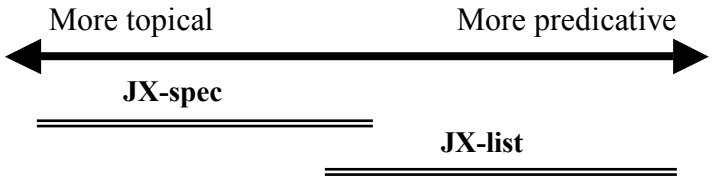

Figure 4.1 Information flow in a JX MP

The crucial point concerning this information flow scale is that the word order is relatively decided. Therefore, an element modified by a relative clause can precede an element consisting of a proper noun that is typically considered more topical in a default context as in (4.29d).

(4.29)

a [Taroo-ra gakusei 10-nin] -ga kita. (same as (4.25a))
-PL student -CL-NOM came
'The ten students including Taro came.'

b [[soko-ni ita]-Taroo-ra gakusei 10-nin]-ga kita.
there-at existed
'Taro et al. that were ten students and were there, came.'

c [Taroo-ra [soko-ni ita]-gakusei 10-nin]-ga kita.

d [[soko-ni ita]-gakusei Taroo-ra 10-nin]-ga kita.

c and d: 'The ten students, Taro et al., who were there, came.'

e * [Taroo-ra gakusei [soko-ni ita]-10-nin]-ga kita.
'Taro et al. that were students and ten people, who were there, came.'

In the acceptable variations, any two adjacent elements in the NP have a legitimate topic-comment relationship, which is 'predication,' not 'identification.' Even in (4.29d) where the order of the two host nouns is reversed from the typical order, the topic-comment relationship is predication, as shown in (4.30a). On the contrary, in the unacceptable example (4.29e), the relationship is not valid because it is identification, as shown in (4.30b).

(4.30)

a [soko-ni ita] gakusei-wa Taroo-ra-da. (predication)
there-at existed student-TOP -PL-COP
'The students who were there are Taro et al.'

b ?? gakusei-wa [soko-ni ita] 10-nin-da. (identification)
-CL-COP
Unlikely: 'The students are the ten people who were there.'
Likely: 'It is the ten people who were there that are students.'

Thus the modification by a relative clause enhances the topicality of the modified noun since the modified noun becomes more specific; however, the elements in a JX MP still have to follow the information flow in Figure 4.1.

This information flow can be combined with the syntactic template of JX. I assume that there are four basic slots in a JX MP and the order of the slots, and what they are to be filled with, are more or less fixed since there seem to be some typical placeholders in the template. Generally, the initial element tends to be a highly referential and topical element such as pronoun or nominal including a proper noun, and the last slot is occupied by an exhaustive LQ, if any. The potential sequence of slots is summarized in Figure 4.2.[156]

1	2	3	4
pronoun/ proper noun	common noun[157]	NQ	LQ (exhaustive)

[156] However, it is possible to assume that the template is like a simple scale without a sequence of specific fixed slots. Elements are simply placed somewhere on the scale according to the topicality/predicativeness. Technically speaking, the latter assumption seems more appropriate since such topicality is a matter of degree and can be slightly different from an element to element, even though such elements are considered to fill the same slot. In addition, as mentioned above, modification by a relative clause can change the degree of topicality of the element and not all of those slots are necessarily filled. Therefore, just a scale without specific slots depicts the relationship of the elements

Figure 4.2 Template of a JX MP with potential slots

Both JX-spec and JX-list can be created from this template. The difference between the two just comes from which slots are to be filled. In JX-spec, mostly slots 1 and 3 are occupied, while in JX-list slots 2 and 3. Slot 4 is always optional. In addition, when slots 1 and 2 are occupied while neither of slots 3 and 4 is occupied, it is not JX but a simple appositive. It is also possible to assume that only slot 3 is filled for the independently case-marked NQ construction (see 4.4). Thus, the two different readings of JX can be integrated into this general template.

4.3.3.2 Wh-question

The NQ in a JX MP has strong restrictions on having a wh-element. It is not completely unacceptable, but it sounds quite unnatural as in (4.31).[158]

(4.31)

a ? [gakusei **nan**-nin]-ga kita-no?
what-CL-NOM came-Q
'How many students came?'

b ?? Taroo-wa [ringo **nan**-ko]-o katta-no?
-TOP apple what-CL-ACC bought-Q
'How many apples did Taro buy?'

---

more appropriately. However, as shown above, the elements appear in a JX set are rather typical and fall in a limited number and types. Therefore, I adopt a template with a set of fixed number of slots, which is four, for the sake of descriptive convenience here.

[157] Technically, it seems possible that more than one common noun occurs in this template and they occupy multiple slots accordingly. However, due to the pragmatic condition, the number of slots for 'common noun' is usually just one.

[158] Wh-NQ examples with a nominative host NP sound slightly better than those with an accusative host NP. Bare wh-NQ examples show a similar pattern.

(1) ?? **nan-nin**-ga kita-no?
what-CL-NOM came-Q
'How many people came?'

(2) * **nan-ko**-o katta-no?
what-CL-ACC bought-Q
'How many did you buy?'

Compared to JX-list, JX-spec has a much stronger restriction and is never allowed to co-occur with a wh-expression.

(4.32)
a * [Taroo-tati **nan**-nin]-ga kita-no?
-PL what-CL-NOM came-Q
'How many people including Taro came?'

b * Taroo-wa [sorera-no e **nan**-mai]-o katta-no?
-TOP those-GEN painting what-CL-ACC bought-Q
'How many paintings of those did Taro buy?'

The host noun in JX-spec is often definite since it is a highly topical element. The numeral information denoted by the NQ is referentially redundant and interpreted as supplementary information about the referent, if not old information. Therefore, encoding a wh-element onto the NQ in JX-spec is contradictory to its information structure.

When we ask about the quantity of some entities, the FL construction is most preferred, while its Pre-N counterpart is not appropriate. As discussed in the preceding chapters, the wh-NQ in Pre-N is only allowed for an echo or exam question.

(4.33)
a Taroo-wa ringo-o **nan**-ko katta-no? (FL)
-TOP apple-ACC what-CL bought-Q

b ?? Taroo-wa **nan**-ko-no ringo-o katta-no? (Pre-N)
what-CL-GEN apple-ACC

Both: 'How many apples did Taro buy?'

It seems that the JX construction is not compatible with wh-NQ. However, we saw that JX-list can encode new information. If the NQ in a JX MP can denote new information, why is it incompatible with wh-NQ? Actually, wh-NQ in JX-list is possible when the JX-NP is a non-argument as in (4.34a).[159] However, this is limited for JX-list and it is still unacceptable for JX-spec as in (4.34b).

[159] Pre-N can also have wh-questions when the host NPs are non-arguments.

(4.34)

a [basu **nan**-dai]-de itta-no?
bus what-CL-by went.POL-Q
'By how many buses did you go?'

b * Hanako-wa [Taroo-tati **nan**-nin]-to kita-no?
-TOP -PL what-CL-COM came-Q
'How many people including Taro did Hanako come with?'

The general acceptability patterns of JX, Pre-N, and FL in terms of the host NP type and the sentence type are summarized as in Table 4.2. There are some differences in acceptability between the declarative and wh-NQ sentences. The NQ in JX-spec is not compatible with a wh-element.

Table 4.2 Distribution patterns of NQ constructions in declarative and wh-NQ sentences

	Declarative				Wh-NQ			
	JX-spec	JX-list	Pre-N	FL	JX-spec	JX-list	Pre-N	FL
Argument (ARG) host NP	✓	✓	✓	✓	*	**?**	**?**	✓
Adjunct (ADJ) host NP	✓	✓	✓	*	*	✓	✓	*

(✓=acceptable, ?=sometimes acceptable, *=unacceptable)

The most interesting point in this distribution pattern is that JX-list and Pre-N with wh-NQ have lower acceptability than their declarative counterparts. The question is why wh-NQ questions with ARG are blocked in JX-list (and Pre-N). This question can be rephrased as why wh-NQ questions with ADJ are NOT blocked in JX-list (and Pre-N)? Is this constructionally conditioned? Interestingly, if two JX MPs are coordinated, the wh-NQ examples with ARG hosts become perfectly fine.

(4.35) [ringo **nan-ko**] to [mikan **nan-ko**]-o katta-no?
apple what-CL and tangerine what-CL-ACC bought-Q
'How many apples and tangerines did you buy respectively?'

---

nan-dai-no basu-de ikimasita-ka?
what-CL-GEN bus-by went.POL-Q
'By how many buses did you go?'

This illustrates at least that the constraint on wh-NQ in JX with an ARG host is not purely constructional. Why, then, does the coordination enhance the acceptability? This is mainly due to the salient list reading. Although even a single entry could make a list and may qualify to have a list reading, it is certain that two or more entries make the list better. As discussed in chapter 3, a contrastive reading may change the acceptability of some FL examples.

However, if this kind of effects is required for wh-NQ JX examples with ARG host NPs to be acceptable, why are ADJ host NP counterpart examples acceptable without such support as in (4.34a)? As shown in the distribution pattern in the last three columns of Table 4.2, JX-list and Pre-N on one hand and FL on the other are in a sort of complementary distribution. As discussed in Chapter 3, FL is quite suitable to encode new information on the NQ, and wh-NQ dominantly prefers FL. It seems quite reasonable to assume that wh-NQ in JX-list or Pre-N is blocked by their counterpart FL. There is no justifiable reason for using a less adequate construction over a more adequate one. Thus, we can say that list reading of JX is nullified by FL in this context. However, if list reading is emphasized by coordination, JX-list becomes available due to that reading. On the contrary, when the wh-NQ is hosted by an adjunct NP, JX-list as well as Pre-N is acceptable without any manipulation such as coordination of MPs. This is due to no overlap or competition with FL since FL is not available with adjunct host NPs. The distribution of these NQ constructions and their acceptability are influenced by the presence of competitors that have functional similarities. This effect is also found with JX-spec examples. The NQ in JX-spec is basically not compatible with wh-marking because the host noun is supposed to fully identify the referents. However, thanks to the dual listing of JX MPs, the acceptability may be substantially raised as in (4.36), if not completely acceptable.

(4.36)(?) [Taroo-tati nan-nin] to [Hanako-tati nan-nin]-ga kita-no?
-PL what-CL and -PL what-CL-NOM came-Q

'How many people including Taro and how many people including Hanako came respectively?'

Next, I would like to compare JX and Pre-N. These two constructions show the same distribution patterns in Table 4.2. Each of them seems to be in a complementary distribution with FL, but do they compete with each other? The answer is 'no.' There are two sections that these two seem to compete with each other, one is 'wh-NQ with ARG host' and the other is 'wh-NQ with ADJ host.' Since I have already discussed JX, I just examine Pre-N here. JX-spec is not compatible with wh-NQ; however, PreN-spec may be compatible with wh-NQ when the host noun denotes distinguishable entities as in (4.37a). If the host noun is non-distinguishable like (4.37b), the question sounds awkward unless it is interpreted as an echo or exam question.

(4.37)

a **nan-nin**-no gakusei-ga kita-no?
what-CL-GEN student-NOM came-Q
'How many students came?'

b ?? **nan-ko**-no ringo-o tabeta-no?[160]
what-CL-GEN apple-ACC eat-Q
'How many apples did you eat?'

However, even when the host noun in a Pre-N MP is non-distinguishable, the question may be acceptable if an appropriate context for a single reading is available as in (4.38). In this example, since we know that *beer* is sold in several different sizes of containers at stores, the Pre-N MP is properly assigned a single reading.

(4.38) **nan-miriritttoru**-no biiru-o katta-no?
what-milliliter-GEN beer-ACC bought-Q

[160] When a Pre-N sentence has multiple MPs, its acceptability does not go up. This shows that Pre-N does not have a listing effect. Although sentence (1) is awkward as (4.37b), no contrastiveness between the multiple MPs is found even when the values of the NQs are the same as in (2). If the multiple MPs in Pre-N were mutually contrastive, there should be some additional conflict in cases like (2). However, (2) is equally unacceptable with its single MP counterparts.

(1) ?? **nan-ko**-no ringo-to **nan-ko**-no mikan-o tabeta-no?
what-CL-GEN apple-and what-CL-GEN tangerine-ACC eat-Q
'How many apples and tangerines did you eat?'

(2) ?? **san-ko**-no ringo-to **san-ko**-no mikan-o tabeta.
3-CL-GEN 3-CL-GEN
'How many apples and tangerines did you eat?'

'Which size (milliliters) of beer did you buy?

PreN-spec is compatible with wh-NQ as long as the host noun denotation is distinguishable entities. When Pre-N is non-specific, its wh-Q expression needs to have a single reading, which is the same requirement found in Pre-N examples in declarative sentences.

What about wh-ADJ cases? Both cases can be considered to fulfill the area that FL cannot cover. There is a little difference between Pre-N and JX. When specificity is irrelevant, JX is preferred to Pre-N. In the following example, the specificity of each *apple* used for that *exchange* is irrelevant because each *apple* is considered non-distinguishable. However, the Pre-N construction requires the Pre-N NP to be specific by default, and the sentence sounds a little awkward. A set attribute reading for Pre-N is not available either, because the event described here seems to be one-time only and the number of *apples* is not likely to be fixed.

(4.39)

a (?) **nan-ko**-no ringo-to kookan-sita-no? (Pre-N)
what-CL-GEN apple-with exchange-did-Q

b [ringo **nan-ko**]-to kookan-sita-no? (JX)
apple what-CL-with

Both: 'With how many apples did you exchange (it)?'

On the contrary, when specificity is relevant, Pre-N sounds slightly better than JX. Even the number of *students* is unknown; those students can be specified in this context. As discussed, the Pre-N construction structurally assigns specificity to its Pre-N MP, while the JX construction itself can do so but needs some overt modification. However, it is also possible to assume that specificity is irrelevant to the context of (4.40b) since the mere number of *students* is considered as important. Hence there is no problem with JX wh-questions like (4.40b).

(4.40)

a. **nan-nin**-no gakusei-to odotta-no?
what-CL-GEN student-with danced-Q

b [gakusei **nan-nin**]-to odotta-no?

student what-CL-with

Both: 'How many students did you dance with?'

Thus, the usages of JX and Pre-N in wh-questions are slightly different according to their different functions.

Finally, I briefly discuss multiple wh-questions, in which the host noun and the NQ are marked by wh-expressions. This kind of wh-questions is hardly produced and only acceptable with FL.

(4.41)

a **nani**-o **ikutu** katta-no?
what-ACC how.many bought-Q

b * [**nani ikutu**]-o katta-no?
what how.many-ACC

Both: 'How many of what did you buy?'

The unacceptability of JX examples with multiple wh-expressions does not change even when the JX-MP is not an argument NP.

(4.42) * [**nani ikutu**]-de tukutta-no?
what how.many-by made-Q
'With what did you make it?'

The quantity of entities can be described when the identity of the given entities is available. When the identity of the entities is unknown, it is unusual to further ask the quantity of those unknown entities. Then why is there a difference in acceptability between FL and JX as shown in (4.41)? In FL the host NP and the NQ are not in the same syntactic constituency and the host NP precedes the FQ in the default word order. Therefore, although the wh-host NP denotes unknown entities, the unknown entities can be regarded as already introduced entities in the context when interpreting the wh-NQ. Actually when the word order is reversed as in (4.43), even an FL example sounds quite awkward.

(4.43)?? **ikutu** **nani**-o katta-no?

how.many what-ACC bought-Q
'How many of what did you buy?'

In JX, although the host noun precedes the NQ, the host noun and the NQ are in the same syntactic constituency and such a time-lag effect is unlikely.[161]

4.3.3.3 Lexical quantifiers

The JX construction has strong restrictions on the occurrence of lexical quantifiers (LQs) that do not consist of a numeral and a classifier. Pre-N and FL have basically no restrictions on this matter and can freely co-occur with LQs, besides a few exceptions.

First, some lexical quantifiers, which denote relative amounts or ratio, are not compatible with this construction, as in (4.44).[162]

(4.44)

a *karera/??gakusei **hotondo**-ga kita.
they/student most-NOM came
'Most of them/ most students came.'

b *karera/*gakusei **itibu**-ga kita.
most-NOM
'Some of them/ a part of the students came.'

Since the basic function of JX is apposition, the host noun and the NQ have to be referentially equivalent. However, when the NQ is proportional, it evokes a part-whole relationship where the host noun denotes a set that the NQ's proportional value is based on. Thus the NQ represents only part of the set denoted by the host noun, and the NQ and the host noun cannot be equivalent.

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[161] The Pre-N counterpart of the multiple wh-question is also unacceptable.
* [**ikutu-no nani**]-o katta-no?
how.many-GEN what -ACC bought-Q
'How many of what did you buy?'

[162] It would be acceptable if the genitive marker is inserted.
karera/gakusei -**no** hotondo-ga kita.
-GEN
'Most of them/ most students came.'
However, this is a different construction. (cf. 4.4.2)

When an NQ denotes an approximate amount, it is acceptable for JX-list, but not for JX-spec as in (4.45).

(4.45)
a * karera **suu-nin**-ga kita.
they several-CL-NOM came
'The several of them came.'

b gakusei **suu-nin**-ga kita.
student
'Several students came.'

On the contrary, LQs that denote approximate amounts are not compatible with JX as in (4.46a). However, there are some LQs that are compatible with JX as in (4.46b).

(4.46)
a * [karera/gakusei **takusan**]-ga kita.
they/student many-NOM came
'Many of them/many students came.'

b [okaidokuhin **tasuu**]-o torisoroeteiru.
bargain many-ACC prepared
'Many bargains are for sale.'

Pre-N and FL counterpart sentences of (4.46a) are both acceptable.

(4.47)
a **takusan**-no gakusei-ga kita. (Pre-N)
many-GEN student-NOM came

b gakusei-ga **takusan** kita. (FL)

Both: 'Many students came.'

Since examples like (4.46b) are quite limited, it is possible to regard them as idiosyncratic cases. However, if we check whether they can be used independently as nouns, there is some correlation in acceptability between the two cases. Those LQs that cannot be used in JX also cannot stand alone as full nouns. (4.48b) is better than (4.48a), if not perfectly acceptable.

(4.48)
a * **takusan**-ga kita.
many-NOM came

b ? **tasuu**-ga kita.

many-NOM
Both: 'Many (people) came.'

This correlation suggests that most of such LQs are not nominal but rather adverbial. The functional restriction of JX, the appositive reading, does not allow non-nominal element to occur in the construction. This is why exhaustive LQs such as *zenbu* 'all' and *zen'in* 'all people' are perfectly fine with JX.

(4.49)
a kadai-tosho **zenbu**-o yonda.
assigned-book all-ACC read
'(I) read all the assigned books.'

b karera/gakusei **zen'in**-ga kita.
they/student all-CL-NOM came
'All of them/all the students came.'

Since the exhaustive LQ represents all the relevant members, the appositional relationship between the host noun and the LQ is maintained.[163] In addition, these LQs can stand alone as nouns.

(4.50)
a **zenbu**-o yomi-oeta.
all-ACC read-finished
'(I) finished reding them all.'

b **zen'in**-ga kita.
all.people-NOM came
'All of them came.'

In sum, LQs may appear in a JX MP but they have two functional restrictions to fulfill the appositive requirement of the construction: the LQs in JX MPs have to be non-proportional and nominal.

4.3.3.4 Partitive reading

[163] These LQs are also compatible with NQs.
[karera/gakusei **san-nin** zen'in]-ga kita.
they/student 3-CL all-CL-NOM came
'All three of them/all the three students came.'

A partitive reading is not likely with JX. As shown in the previous section, proportional LQs are not available for JX and the denotations of the elements in a JX MP need to be mutually equivalent. For FL, specification of the host noun denotation enhances a partitive reading because it makes the host noun denotation 'bounded.' However, the same effect is unlikely for JX because specification on the host noun is likely to bring a clearer referential reading to the JX construction instead. Both NQ expressions in (4.51) are interpreted as appositive and a partitive reading is unlikely.

(4.51)
a [unagi san-biki]-o katta.
eel 3-CL -ACC bought
'(I) bought three eels.'

b [**sorerano**-unagi san-biki]-o katta.
those-
'(I) bought those three eels.'

Compared to their plural demonstrative counterparts, the singular demonstrative host nouns are more likely to refer to a kind; therefore, a partitive reading is more likely. Actually, Okutsu (1969: 100) presents the following example showing that JX may have a partitive reading.

(4.52) (biiru-o 5-hon kattekita.) [**sono**-biiru 3-bon]-o nonda.
beer-ACC 5-CL buy.came that-beer 3-CL-ACC drank
'(I) bought five beers. (I) drank three of them.'

In this example, the host noun, *sono biiru* 'those beers (literally: 'that beer'),' is more likely to refer to the whole *five beers* rather than just *3 bottles of them*. This JX example seems to have a partitive reading. However, without the preceding sentence, this partitive interpretation would not be likely and *sono biiru* 'those beers' would just refer to a specific set of 'three beers.'

Interestingly, there is a sharp contrast between the following examples. The host noun *sore* in (4.53a) is a singular demonstrative pronoun while the numeral in the following NQ is not singular. The JX MP in (4.53a) is not likely to have an appositive reading due to this mismatch in

number, and the sentence is not acceptable. When the host noun is a plural demonstrative pronoun as in (4.53b), the sentence is acceptable. These examples show that the host noun and the NQ in a JX MP do not have a partitive relationship.[164]

(4.53)

a * [**sore** san-biki]-o katta.
that 3-CL-ACC bought
'(I) bought three of them.'

b [**sorera** san-biki]-o katta.
those
'(I) bought the three of them.'

Thus, although there are some exceptional examples that have a partitive reading, the basic reading of JX is still appositive and exhaustive.

4.3.4 Summary

The JX construction has two different readings: specific reading (JX-spec) and list reading (JX-list). The host noun in a JX-spec MP refers to a specific referent, which is often highly activated. The quantitative information denoted by the NQ is redundant in terms of reference and simply represents supplementary information about the referent. On the other hand, the host noun and the NQ in a JX-list both denote new information. However, those readings share an appositive reading and have the common schematic template.

4.4 Other NQ constructions relevant to JX

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[164] These JX examples have FL counterparts. The FL counterparts clearly have partitive reading as in (1).

(1) sono-biiru-o 3-bon nonda.
that-beer 3-CL-ACC drank
'(I) drank three of the beer.'

Interestingly, FL counterparts of (4.54a,b) show the opposite acceptability patterns.

(2) **sore**-o san-biki katta.
that-ACC 3-CL bought
'(I) bought three of them.'

(3) ?? **sorera**-o san-biki katta.
those-ACC
'(I) bought three of them.'

When the host noun is singular as in (2) it represents a particular type while when the host noun is plural, it denotes a group of individuals, which does not represent a type. This difference causes the different acceptability judgment in the above examples.

In this section, I deal with two other NQ constructions that may be relevant to JX and discuss their functions and relationship with JX. One is the bare-NQ construction (NQ-c) and the other is the Post-nominal NQ (Post-N or N-*no* Q) construction. The former one is interpreted to be relevant to JX in that it can be created by the deletion of the host noun in a JX MP. The latter one is relevant to NQ-c and only indirectly relevant to JX.

4.4.1 Independently case-marked NQ construction (NQ-c)

An NQ may function as a nominal element under some circumstances but it cannot be considered as a full-fledged noun since it is always semantically conditioned by its host noun. In this section, I discuss 'independently case-marked NQ construction (NQ-c)' in which an independent NQ that does not have its host noun in the same clause is directly marked by a case marker to form an NP as in (4.54a) or an NQ is followed by a copula to form a nominal predicate as in (4.54b).

(4.54)

a **san-nin**-wa byooin-e itta.
3-CL-TOP hospital-to went
'The three went to the hospital.'

b byooin-e itta-no-wa **san-nin**-da.
hospital-to went-P-TOP 3-CL-COP
'It is three people that went to the hospital.'

Downing (1996) distinguishes them according to referentiality, 'referential NQ' and 'non-referential NQ,' and further introduces some subtypes respectively. In the following sections, based on her classification, I examine the characteristics of the subtypes of NQ-c.

4.4.1.1 Referential NQ

There are four subtypes for the referential NQ according to Downing (1996: 160).

1 Introducing referents
2 Introducing additional members of categories already introduced
3 Singling out subsets of groupings of referents already introduced
4 Referring to exophorically or anaphorically anchored individuals

The first subtype mainly consists of NQs that sometimes do not co-occur with their host nouns; the co-occurring host nouns for those NQs are quite limited and easily retrievable. In (4.55), the host noun *heya* 'room' is omitted because the emphasis is placed on the size of the *country house*, not the type of the *room* it has.

(4.55) **hito-ma**-dake-no bessoo
1-CL-only-GEN cottage
'a country house that has only one room' (ibid: 160 (4))

Downing (ibid: 161) characterized the second subtype, citing the concept of 'pronouns of laziness' in Lyons (1977: 674), as NQs that substitute for "expressions that are identical, but not necessarily co-referential expressions." The host noun *iwana* 'bull trout' is introduced in Pre-N in the first sentence and the three NQs in the second sentence have the same host noun *iwana*, but it is not explicitly expressed.

(4.56) Komorizawa-ni-wa **nana-hiki-no iwana**-ga nobotteita. Jootaroozawa-ni-wa
Komori.Lake-at-TOP 7-CL-GEN bull.trout-NOM rise.RSLT Jotaro.Lake-at-TOP
san-biki, Ushirozawa-ni **yon-hiki**, Koiwakezawa-ni **san-biki**-ga ita.
3-CL Ushiro.Lake-at 4-CL Koike.Lake-at 3-CL-NOM existed
'Seven bull trout appeared in Komori Lake. In Jotaro Lake, there were three, in Ushiro Lake, four, and in Koiwake Lake, three.' (Downing1996: 161 (5))

In the above example, although there are four sets of *bull trout* referred by the same host noun, those four referents are all different.

The third subtype denotes a breakdown of a bounded set. As shown in (4.57), the host noun is usually accompanied by an expression like *-nouti*, which means 'inside/among ~.'

(4.57) (gakusei-nouti) **san-nin**-ga byooin-e itta.
student-inside 3-CL-NOM hospital-to went
'Three of the students went to the hospital.'

The fourth subtype functions as a definite pronoun as in (4.58).[165] The NQ *hutari* 'two persons' in (4.58) is not accompanied by the host noun but refers to a specific *two persons* that is already activated or accessible in the context.

(4.58) **hutari**-wa yoku umi-e itta.
2.CL-TOP often sea-to went
'They two used to go to the sea.'

Now, how can we analyze these NQs? Are they nominal? Or are they derived from other NQ constructions by the omission of their host nouns? If so, what are their base constructions?

The first subtype of the referential NQ may have an overt host noun. If the host noun is not the default one, explicitly having a host noun is quite natural as in (4.59).

(4.59) **wasitu**(-ga) hito-ma-no apaato
Japanese.style.room(-NOM) 1-CL-GEN apartment
'an apartment that has one Japanese style room'

It is possible to attach a case marker after the host noun, assuming the base construction of the above example is FL. However, such paraphrasing is not always allowed. In (4.60), it is impossible to attach any case-marker after the host noun.

(4.60) **wasitu** (*-ga/*-ni) hito-ma-ni san-nin-de sumu.
Japanese.style.room (-NOM/-DAT) 1-CL-at 3-CL-with live
'for three persons to live together in one Japanese style room'

Therefore, the likely base construction for this type is JX, not FL.

In the second subtype, the host noun is not explicitly repeated when it is the same as the immediately preceding one and no other competing candidates for the host noun are present in the context. It is natural to assume that the host noun is omitted. Actually, it is quite awkward to repeat the same host noun. If the host nouns are different for each NQ, those host nouns are explicitly expressed in the same NQ construction as in the preceding one. Therefore, for (4.56), the second sentence may be something like below.

[165] Downing (1996: Chapter 6) thoroughly discusses this function.

(4.61) Jootaroozawa-ni-wa **san-biki-no sake**, Ushirozawa-ni **yon-hiki-no ayu**,
Jotaro.Lake-at-TOP 3-CL-GEN salmon Ushiro.Lake-at 4-CL-GEN sweetfish

Koiwakezawa-ni **san-biki-no koi**-ga ita.
Koike.Lake-at 3-CL-GEN carp-NOM existed

'In Jotaro Lake, there were three salmon, in Ushiro Lake, four sweetfish(/ayu), and in Koiwake Lake, three carp.'

However, if the first sentence in (4.56) were FL, the likely NQ construction in the second sentence would be FL, and if JX, the NQ construction would be JX as well. The source construction of this type of NQ-c is ambiguous and it can be any of the three NQ constructions, mainly according to the preceding construction type.

The host noun of the third type may be marked by *nouti* as in (4.57). It may be possible to assume that (4.57) is derived from (4.62a) by omitting the host noun in the JX MP, although (4.62a) itself sounds slightly awkward due to the redundancy. However, this type is compatible with proportional LQs as in (4.62b), while JX is not compatible with proportional LQs as in (4.62c) because JX generally does not have a partitive reading. This clearly indicates that JX cannot be the source for this type of NQ-c.

(4.62)

a gakusei-nouti **gakusei** san-nin-ga kita. (JX)
student-inside student 3-CL-NOM came
'Three of the students came.'

b gakusei-nouti **itibu**-ga kita. (NQ-c)
student-inside part-NOM came
'Some of the students came.'

c * (gakusei-nouti) [**gakusei** itibu]-ga kita. (JX)
student
Intended: 'Some students came.'

What about Pre-N? It is also possible to assume that (4.63) is the source construction of (4.57). Since Pre-N is compatible with proportional LQs, (4.63b) may correspond to (4.62b).

(4.63)

a gakusei-nouti **san-nin-no** gakusei-ga kita.

student-inside 3-CL-GEN student-NOM came
'Three of the students came.'

b gakusei-nouti **itibu-no** gakusei-ga kita.
part-GEN
'Part of the students came.'

However, when the host noun is non-distinguishable, the source sentence is not acceptable, while its counterpart NQ-c is acceptable as in (4.64).

(4.64)
a sono-gaoyoosi-nouti san-mai-o tukatta.
that-drawing.paper-inside 3-CL-ACC used

b ?? sono-gaoyoosi-nouti **san-mai-no gayoosi**-o tukatta.
-GEN drawing.paper-ACC

Both: '(I) used three sheets of that drawing paper.'

As shown above, this type of NQ-c has a partitive reading. FL has a partitive reading too when the host noun denotes a bounded set. In addition to this functional similarity, most FL examples are paraphrasable to their NQ-c counterparts.

(4.65)
a gakusei-ga san-nin kita.
student-NOM 3-CL came
'Three students came.'

b (sono-)gakusei-nouti san-nin-ga kita.
that- -inside -NOM
'Three of the students came.'

Since FL has a strict restriction on its distribution and non-argument host NPs are not allowed, a partitive reading cannot be expressed by FL if the host NP is a non-argument. Therefore, this type of NQ-c functionally complementary to the distribution of the partitive reading of FL.

(4.66)
a * sinai-no mura-**kara** mittu hito-ga kita.
town-GEN village-from 3.CL person-NOM came

b sinai-no mura-nouti mittu-**kara** hito-ga kita.
-inside

Both: 'People came from three villages in the town.'

Thus, this type has an explicit partitive reading and is functionally similar to FL. However, since it has a wider distribution with respect to the grammatical role of the host NP and the NQ always has to be case-marked, it should be regarded as a different NQ construction from FL too.

With the fourth type, is it appropriate to assume that this pronominal NQ is structurally related to JX? Or is it relevant to Pre-N?

(4.67)

a **san-nin**-wa byooin-e itta.
3-CL-TOP hospital-to went
'The three went to the hospital.'

a **sono-gakusei san-nin**-wa byooin-e itta. (JX)
that-student 3-CL-TOP

b **sono-san-nin-no gakusei**-wa byooin-e itta. (Pre-N)
that-3-CL-GEN student-TOP

Both: 'Those three students went to the hospital.'

Structurally, it seems quite reasonable to assume that NQ-c is derived from JX because NQ-c is easily created by omitting the host noun in the JX MP. However, as shown in Figure 4.2, the elements in a JX MP are arranged according to the degree of topicality; the more topical element appears at the more leftward position. If we hold the abovementioned assumption, it would bring an unreasonable result that the more topical element (host noun) is dropped while the less topical element (NQ) is chosen to represent the referent.[166]

What about the relationship between this type of NQ-c and PreN-spec? It seems a little problematic to derive NQ-c from Pre-N because the head of the MP is the host noun and the NQ is a mere modifier. It is still possible, though, to assume that NQ-c is created from its counterpart Pre-N by metonymy; the quantitative attribute is chosen to refer to the entire set of entities.

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[166] If the omission of the host noun is interpreted as replacing it with a so-called 'zero pronoun,' there is no violation in terms of topicality.

karera san-nin → ϕ san-nin
3rdP.PL 3-CL
'the three of them' 'the three (of them)'

(4.68) sono-**san-nin**-no gakusei → sono-san-nin
that-3-CL-GEN student that-3-CL
'those three students' 'those three (students)'

Interestingly, the singular form, with the numeral 'one,' cannot be used as an anaphoric expression (Downing 1996).[167]

(4.69)
a **hutari**-wa yoku umi-e itta.
2.CL-TOP often sea-to went
'They two used to go to the sea.'

b * **hitori**-wa yoku umi-e itta.
1.CL-TOP
*'He/she one used to go to the sea.'

Both JX and Pre-N may have examples whose numeral is 'one' as in (4.70). However, as discussed in 4.3.1.1, JX-spec is not compatible with the numeral 'one' and the MP in (4.70a) cannot be marked by the topic marker. It is possible to mark a PreN-spec whose numeral is 'one' by the topic marker, but it is not quite common, and such a Pre-N MP is used when introducing a new individual into the discourse (Downing 1996).

(4.70)
a **kare hitori** -ga/*-wa byooin-e itta. (JX)
he 1.CL -NOM/-TOP hospital-to went
'Only he went to the hospital.'

b **sono-hitori-no gakusei** -ga/-wa byooin-e itta. (Pre-N)
that-1.CL-GEN student -NOM/-TOP
'That student went to the hospital.'

It is still not clear how this type of NQ-c is derived. Both JX and Pre-N can be the source construction for NQ-c.[168]

[167] However, it can be referential when it means partitive, 'one (of them).'
sonouti-no hitori-wa yoku umi-e itta.
inside-GEN 1.CL-TOP often sea-to went
'One of them used to go to the sea.'

[168] Both PreN-spec and JX-spec can be switched to NQ-c in the same discourse. Although NQ-c is seldom switched to other MPs, it is still possible for NQ-c to be switched to either Pre-N or JX.

Thus, each of the four subtypes of referential NQ-c has different functions and different relationships with other NQ constructions.

4.4.1.2 Non-referential NQ

There are two subtypes of non-referential NQ, according to Downing (1996: 160). One is adverbial and the other is predicative. In the adverbial type, NQs are usually marked by an adjunctive case marker, as in (4.71a), or a clitic, as in (4.71b).

(4.71)

a [san-nin-de suru] geemu
3-CL-by do game
'a game to be played by three players'

b san-nin-**yoo**-no heya
3-CL-for-GEN room
'a room for three people'

In these examples, the host nouns are supposed to be general *humans* whose identity is not relevant. If we coercively insert the host noun *hito* 'person' to form a JX or a Pre-N, the expressions would become quite awkward.

(4.72)

a ?? **hito** san-nin / san-nin-no **hito** -de suru geemu
person 3-CL/ 3-CL-GEN person -by do game

b ?? **hito** san-nin / san-nin-no **hito** -yoo-no heya
person 3-CL / 3-CL-GEN person -for-GEN room

The predicative type can be found in a nominal predicate followed by the copula *da*. Downing (ibid: 160) gives the following short dialogue as an example of this type; however, I would rather consider this is a variation of FL.

(4.73) A: nan-biki-gurai katteiru-no?
how.many.CL-approx. raise.PRG-Q

B: ip-piki-desu.
1-CL-COP.POL

A: 'How many are you raising?'
B: 'One.'

The answer to a wh-question often appears in this format, and the copula is assumed to function as the predicate in the preceding question, i.e., *ippiki* ***katteiru*** '(I'm) raising one.' This substitutive use of the copula is not limited to NQs, but any wh-element in focus can be answered this way.[169] Therefore, this is equivalent to an FL sentence whose host NP and predicate are both omitted. I consider examples like (4.74a) as a predicative non-referential NQ.

(4.74)

a byooin-e itta-no-wa **san-nin**-da.
hospital-to went-P-TOP 3-CL-COP
'It is three people that went to the hospital.'

b byooin-e itta-no-wa gakusei **san-nin**-da.
student 3-CL-COP

c byooin-e itta-no-wa gakusei-ga **san-nin**-da.
student-NOM
(b & c): 'It is three students that went to the hospital.'

If this is related to JX, the host noun in (4.74b) is considered to be dropped due to some pragmatic reason. This can be also considered as a variation of FL in which the host NQ is omitted. I do not have enough evidence to conclude which analysis is better.[170]

4.4.2 Post-nominal NQ (N-*no* Q) construction (Post-N)

There are two subtypes for Post-N; one is partitive and the other is appositive (Kim 1995, Downing 1996).[171] Kim (1995: 215) simply admits that Post-N has a partitive reading; however, partitive reading is not unconditionally available for Post-N. When Post-N has an LQ that denotes 'proportion,' a partitive reading is available.

(4.75)

a gakusei-no **hotondo** 'most of the students'
student-GEN most

[169] The copula may even be dropped in casual speech. In the example, Speaker B answered politely using the polite version of the copula, but if it is a casual conversation, the copula is very likely to be dropped.
[170] However, if contrast is placed on the host noun, saying something like 'it is not three **teachers**,' the FL version would be more acceptable.
[171] Downing (1996: 230) limits her discussions of the Post-N construction to the appositive type, excluding the partitive type.

b gakusei-no **ichibu** 'some of the students'
part

However, when Post-N has an NQ instead of proportional lexical quantifier (LQ), partitive reading is not readily available. When the numeral is 'one,' a partitive reading is still available as in (4.76a); however, when the numeral is more than 'one' as in (4.76b), a partitive reading is quite unlikely.[172] The likely reading of (4.76b) is appositive, instead.

(4.76)
a gakusei-no **hitori**-ga kita.
student-GEN 1.CL-NOM came
'One of the students came.'

b gakusei-no **san-nin**-ga kita.
3-CL-NOM
Likely: 'Three people who were students came.'
Unlikely: 'Three of the students came.'

Since the numeral 'one' can be interpreted as a minimum proportion, the NQs whose numeral is 'one' may be considered as equivalent to the above proportional lexical quantifiers. When a partitive reading for Post-N with a NQ is needed, some additional expression must be explicitly attached to the host noun.

(4.77) gakusei-no **uti/naka-no** san-nin-ga kita.
student-GEN inside -GEN 3-CL-NOM came
'Three of the students came.'

Both *uti* and *naka* mean 'inside,' and either one needs to be attached to the host noun to assign a partitive reading to the MP. When the host noun is a Pre-N without such a marker as in (4.78b), the sentence itself is not acceptable as shown in (4.76b).

(4.78)
a 10-nin-no gakusei-no **uti/naka-no** san-nin-ga kita.
-CL-GEN student-GEN inside -GEN 3-CL-NOM came

b * 10-nin-no gakusei-no san-nin-ga kita.
Both: 'Three of the students came.'

[172] Some native speakers find the partitive reading available to examples like (4.76b), if not perfectly acceptable.

Thus without the marker, partitive reading is not available. Partitive reading for Post-N is only available with a proportional LQ because such LQs can evoke partitive reading due to their semantic properties.[173] Therefore, partitive reading is not an intrinsic characteristic of Post-N.

Kim (ibid: 215) argues that the preceding nominal in Post-N can be paraphrased to a relative clause, which is functionally equivalent the nominal modifier.

(4.79) [gakusei-dearu] san-nin-ga kita.
student-COP 3-CL-NOM came
'Three people who were students came.'

When the genitive phrase *gakusei-no* is interpreted as a modifier like a relative clause, either restrictive or non-restrictive reading is available to Post-N according to the context. Especially when it is interpreted as a non-restrictive modifier, Post-N is structurally interpreted as equivalent to a modified NQ-c since the modifier is irrelevant to reference.[174]

Second, Post-N has an appositive reading in the examples below. Downing (ibid: 240) calls this type of Post-N 'summative appositive.'

(4.80)

a A,B,C-no san-nin
-GEN 3-CL
'The three people, A, B, and C'

b mizu, nisankatanso, hikari-no mittu
water CO_2 light-GEN 3.CL
'three (elements), water, CO_2, and light'

[173] Pre-N has an exhaustive reading and is unlikely to have a partitive reading; however, it may have a partitive reading when it co-occurs with a certain lexical quantifier (LQ) as in the following examples.

a. **hotondo**-no gakusei 'most students'
most-GEN student
b. **itibu**-no gakusei 'some students'
part-GEN student

This is mainly due to the semantic property of these lexical quantifiers, which denote a proportional value.

[174] NQ-c is similar to Num-N. However, in Num-N the head noun is not fully developed to a classifier. In NQ-c, the latter part is considered as a classifier. Therefore, NQ-c expressions can be regarded as a residue of its ancestor counterpart Num-N, or it can be regarded as a Pre-N whose host noun is omitted. As for the NQ-c construction, see Chapter 2 for further discussions.

Here, the three entities are exhaustively listed in the genitive phrase. This kind of examples often denotes specific individuals, but not necessarily so as in (4.80b).[175] These 'summative appositive' examples can be also paraphrased by a relative clause with the copular predicate *dearu*.

(4.81) [A,B,C-dearu] san-nin
-COP 3-CL
'The three people, who are A, B, and C'

Thus, there are two different readings for Post-N: one is 'partitive' and the other is 'attributive.' The former type is available only when the Q is a proportional lexical quantifier or an NQ whose numeral is 'one'. Otherwise, the latter reading is assigned. We can argue that the partitive reading in Post-N is not structurally motivated because it is restricted by the type of the co-occurring quantifier.

4.5 Summary

There are two subtypes for JX, JX-spec and JX-list. In both subtypes, the NQ designates the size of a subset denoted by the host noun. Their difference comes from the referential status of the subset. In the former type, the host noun denotes a specific set of entities and the NQ simply adds some supplementary information that is irrelevant to referencing. In the latter type, the host noun denotes a new subset of entities and the NQ determines the size of that bounded set.

JX has some functional commonalities with Pre-N and FL respectively based on its constructional similarities to them. JX is also constructionally relevant to NQ-c; however, NQ-c

[175] Actually, it is possible to attach a host noun after the NQ. This is considered a combination of Post-N and Pre-N.
(1)a A,B,C-no san-nin-no **gakusei** 'the three students, A, B, and C'
-GEN 3-CL-GEN student
b A,B,C-no mittu-no **yooso** 'the three elements, A, B, and C'
3.CL-GEN element
However, this is not always available. When there is no appropriate common host noun for the listed entities, NQ has to stand alone.
(2) sensei-to Hanako-no **hutari** (-no ?[host N]) -ga …
teacher-and -GEN 2.CL -GEN -NOM
'The teacher and Hanako, the two of them, …'

has a wide variety of meanings and the relationships between JX and NQ-c are not always clear-cut. We need further research on this issue.

Chapter 5 Discussion

Based on the analysis of the functions of the three major NQ constructions and their relevant NQ constructions, in this chapter I first compare the denotations of MP in those NQ constructions. Then I discuss their inter-constructional relationships as well as intra-constructional variations from a cognitive perspective, namely how the differences in form/construction are linked to the different aspects of the process of quantification encoded in those constructions. I discuss the association between the word order of host noun and NQ on one hand and the discourse functions, reference and predication, on the other. I also apply Langacker's scheme (1987, 1991) to visualize which part of the quantification process is 'profiled' and further discuss the similarities and differences among the NQ constructions. I apply the results of the discussions to two different issues, the contrast between distributive and collective readings and the scope interpretations of MPs. Finally, I compare the three NQ constructions and discuss their inter-constructional relationships in terms of their functions and distribution patterns.

5.1 Functions of classifiers in Japanese

The functions of classifiers, or in other words, the reasons why classifiers exist, have been discussed in some previous studies (Craig 1986, Inoue 1998). Lucy (1992) argues that the major function of CL is to make unbounded entities denoted by the (host) noun become unitized. Lucy (1992: 73) defines the unitization as follows:

> "Morphosyntactic process which converts the lexical noun phrasal form into one which explicitly signals the unit of the referent can be called *unitization*, and the specific forms used can be called *unitizers* or *unitizer constructions*."

He applies this notion to the classifier language Yucatec and claims that 'all the lexical nouns of Yucatec are unspecified as to unit since they all require supplementary marking (i.e., numeral classifiers) in the context of numeral modification.' Therefore, 'the numeral classifiers serve to specify the unit or boundedness of the referent of the lexical item.' He points out the similarity between Yucatec lexical nouns and English mass nouns in that both are unspecified as to unit.

However, most nouns, at least in Japanese, do not freely co-occur with a variety of individual classifiers in order to have their denotation realized in different 'unitization' patterns; rather, the association patterns between entities and individual classifiers are highly limited and to a great extent conventionalized. Since conventional association patterns are too strong to allow other classifiers to co-occur, most lexical nouns in Japanese have few options in their co-occurring classifiers, except for the generic classifier, *tu*, which is compatible with most inanimate nouns.

Iida (1998) mentions a mailer software in which e-mail messages are sent out and received by an animal pet, and introduces the following example of mismatch between a host noun and its classifier that appears in a pop-out dialogue in the software.[176]

(5.1) ? meeru matawa petto-ga x-ko arimasu.
mail or pet-NOM x-CL exist.POL
'You have *x* messages or pets.'

The classifier *ko* may be used as a generic classifier, but it sounds quite awkward in the context of this example because the number of *e-mail messages* is normally counted with the classifier *tuu* (for 'mail') while the number of *pets* is with *hiki* (for 'animal/creature).[177] Although this kind of situation, where counting the number of *e-mail messages* and *pets* are conducted simultaneously, is quite unusual, the crucial point here is that the choice of classifier is strongly

[176] This mailer software is 'PostPet.'
[177] The classifier *ko* is usually used for counting small round entities.

relevant to how we perceive new entities. In this example, since either of the particular classifiers is not appropriate to represent the other entities, another neutral and general classifier is chosen to resolve the dilemma.

Speakers may sometimes intentionally choose a 'wrong' classifier to emphasize a certain aspect of the entities denoted by the host noun as in (5.2). The host noun *kodomo* 'child' is human, so the classifier must be *nin* (for 'human') instead of *hiki* (for creature/animal). However, if this choice is intentional, we understand that the speaker tries to imply that the *children* are not human-like in some aspects, for example they lack discipline and do not behave themselves.

(5.2) kodomo-ga ni-**hiki** iru.
child-NOM 2-CL(creature) exist
'(I) have two children (who are like animals).'

These examples show that the new meanings or awkwardness created by the innovative uses of classifiers are due to the mismatch between the semantic class to which the entities denoted by the host noun originally belong on one hand and the new semantic class assigned to the entities by the given classifier on the other. The host noun is associated with an inappropriate or unconventional semantic class represented by the classifier, which forces us to revise the semantics of the entities denoted by the host noun and eventually creates new interpretations or is judged as totally unacceptable.

In Mandarin, classifiers are obligatory when the number of referent is 'one.'[178] In this sense, the default number of entities denoted by quantitatively unmodified nouns cannot be 'one' (Nakagawa 1992: 97). Instead such a bare noun rather denotes an unbounded set of entities, which roughly corresponds to the denotation of a bare plural in English. On the contrary in

[178] As discussed in Chapter 1, the use of classifier is obligatory in Japanese when numeral information is encoded. In other words, when numeral information is not explicitly expressed, classifiers are never used. On the contrary, the classifiers in Mandarin do not necessarily co-occur with a numeral. When the number is 'one,' the numeral 'one' can be omitted and a classifier alone can modify the host noun. Mandarin classifiers also can co-occur with a demonstrative without a numeral.

Japanese, nouns can denote 'a semantic category, the members of that category or particular members of that category' (Downing 1993: 76). Therefore, bare nouns without NQs are ambiguous and not necessarily generic. Instead they may represent particular members of the category denoted by the noun. The default number in such an example is usually 'one.' This contrast between Japanese and Chinese is shown in the following example sited by Nakagawa (ibid). (5.3a) is taken from a Japanese novel and the Mandarin counterpart is its translation. As shown in each English translation, the meanings of those two sentences are different with respect to the number of the noun *otoko* 'man/men.'

(5.3)

a 'konnitiwa' to itte, yoko-no **otoko**-ni atama-o sageta.
hello that say side-GEN man-DAT head-ACC lowered
'He said "hello" to the **man** next to him and lowered his head.'

b '**nimen** hao' ta shuozhe, xiong pangpiande ren dianle dian tou. (Mandarin)
hello(2PL) he has.said toward near.GEN man nod.ASP nod head
'He said "hello" to the **men** next to him and lowered his head.'

The translator misinterpreted the number of the noun *otoko* as plural rather than singular. The default number interpretation of the noun is singular and most Japanese people never think of the possibility that the number of *otoko* may be more than one.

Thus, classifiers in Japanese decide the semantic class of the entities denoted by the host noun. So classifiers may clarify how the entities or events are perceived by the speaker, especially for marginal cases where no specific classifier perfectly fits a given host noun. However, note that in both examples, individualization itself is presupposed and irrelevant to the use of classifier because classifiers are not always obligatory for nouns.

5.2 Denotations of MPs in the NQ constructions

In this section, I discuss what the host noun and the NQ in the MP in each NQ construction denote, and show how they are schematically represented, referring to the definitions from

Downing (1996). The order of discussion is slightly different from the preceding chapters. I start with FL then discuss Pre-N and JX.

First I discuss the denotation of the NP-FQ pair in FL. Downing (ibid: 222) claims that the host noun denotes a category and the FQ designates the number of instantiations of the entities that belong to the category. When the host noun denotes a particular set, the host noun establishes a grouping (category) and the FQ delimits the grouping and creates a subset. As discussed in Chapter 3, when the host NP represents a bounded set as in (5.4b), a partitive reading is assigned.

(5.4)

a ungai-o san-biki katta.
eel-ACC 3-CL bought
'(I) bought three eels.'

b **sono**-unagi-o san-biki katta.
that-
'(I) bought three of those eels.'

The representation of NP-FQ pair in (5.4a) is schematically shown in Figure 5.1.[179] The host noun represents a category and sets a kind of domain for instantiations in which members of that category can occur. In this figure, the denotation of the host noun is represented by the larger circles. Since this domain is unbounded, it is represented by a dotted line.[180] Then the newly instantiated entities whose quantity is designated by the FQ forms a new set in the domain, which is represented by the smaller circle. Since this set is newly created/introduced, it is not recognized as an established set and therefore drawn by the dotted line. The small ovals labeled with an initial *u* (*unagi* 'eel') in the dotted smaller circle represent instantiated entities

[179] The schematic representations are based on Langacker (1987); however, I do not necessarily follow his analysis.
[180] It may be possible to assume that the host noun represents a non-bounded set instead of a type. As Jackendoff (1996) claims, a given set can be recognized as 'non-bounded' instead of 'unbounded' when its boundaries are beyond the scope of the discourse context. This issue becomes relevant when we discuss the partitive reading evoked by the predicates of consumption.

respectively. This new set is 'profiled' in FL.[181] The figure in the left-hand square represents a state denoted by the host noun and the figure in the right-hand square represents a state denoted by the NP-FQ pair. The transition between these two states is interpreted as a creation of a new set; however this change of state does not take place along the actual temporal scale. The time axis in Figure 5.1 represents a hypothetical temporal scale for that ideational manipulation.

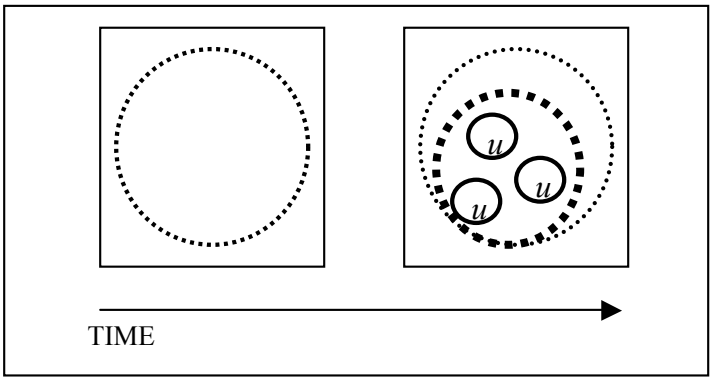

Figure 5.1 Cognitive representation of the NP-FQ pair in (5.4a)

The representation of NP-FQ pair in (5.4b) is given in Figure 5.2. The host noun denotes a bounded group, which is represented by the larger solid circle that contains an unspecified number of solid oval entities labeled with an initial *u*. Again the newly instantiated entities whose quantity is designated by the FQ forms a new subset, which is represented by the smaller dotted circle. Unlike Figure 5.1, the right-hand figure in Figure 5.2 has an unspecified number of unselected entities outside of the dotted smaller circle. Since their existence is strongly implied, they are drawn in solid line.

[181] Langacker (1987) defines 'profile' as follows.

> "The entity designated by a semantic structure. It is a substructure within the base that is obligatorily accessed, functions as the focal point within the objective scene, and achieves a special degree of prominence."

In FL, the newly introduced subset represented by the FQ is profiled and the denotation of the host noun is the base for it.

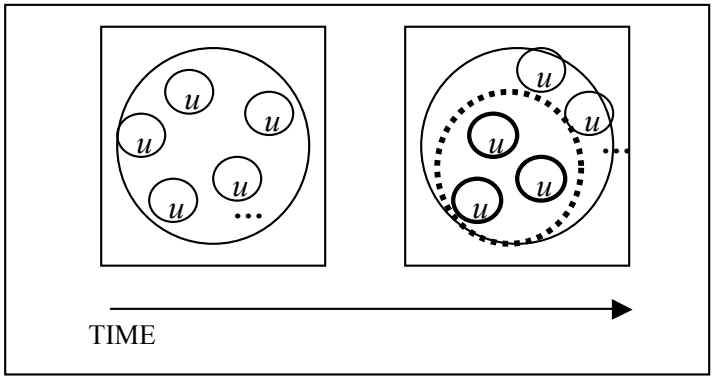

Figure 5.2 Cognitive representation of the NP-FQ pair in (5.4b)

A partitive reading is found in the latter figure, in which a part-whole relationship is clearly indicated. Thus, FL examples with a non-bounded host NP like (5.4a) usually do not have a partitive reading. However, when the predicate is of consumption like (5.5), a partitive reading may be available.

(5.5) hakusen-o san-bon **kesita**.
white.line-ACC 3-CL erased
'(I) erased three of (the) white lines.'

When the predicate is of consumption, what is to be consumed needs to preexist and the quantity designated by the NQ is unpredictable and therefore non-exhaustive. The host noun is supposed to denote a mere category, but in this case it is more like an un-bounded set whose boundaries are not concerned for the proposition of that sentence.

Furthermore, when the host noun represents a single entity as in (5.6), it has to be interpreted as a type. So the host noun *kono-hon* 'this book' denotes a certain *book* as a 'type' and the NQ denotes the number of instantiations, which is the number of copies of that given *book*. Therefore, no partitive reading is created.

(5.6) **kono-hon**-o san-satu katta.
this-book-ACC 3-CL bought
'(I) bought three copies of this book.'

The crucial point in these representations is that a new (sub)set is created according to the number designated by the NQ, and this creation/introduction of the new set is 'profiled' in FL.

In the above figures, the timing of measurement is not mentioned. When quantitative information is encoded in linguistic forms, the completion of its measurement or quantification is presupposed and backgrounded. Sometimes, measurement may take place during the utterance of a sentence as in the following examples.

(5.7)

a gakusei-ga **iti**, **ni**, **san**-nin iru.
student-NOM one two three-CL exist
'There are one, …two, …three students.'

b sio-o **ip-pai**, **ni-hai**, **san-bai** ireru.
salt-ACC one-CL two-CL three-CL put.in
'Put in one,…two,… three spoonfuls of salt.'

Interestingly, these simultaneous readings are only available in FL and are never allowed in Pre-N or JX. In this respect, the process of measurement itself is more closely related to FL than to Pre-N or JX. However, this kind of examples is seldom found since the measurement has been completed some time before the utterance for most FL examples. Furthermore, FL often implies a 'change of state' but it does not necessarily mean completion of an action/event with respect to the predicate. As shown in the above figures, it merely represents a creation of a new set.

Next, I discuss the representations of a Pre-N MP. Downing (1996: 221) claims that the denotation of the MP in Pre-N is 'individuals defined by the intersection of the category (the host noun) and the number (the NQ).' Pre-N picks out 'particular individual members of the category denoted by the [host noun].' However, her discussion is limited to PreN-spec, and PreN-sg like (5.8a) is not dealt with. In the single reading, members of the set are not necessarily particular. The cognitive representations of Pre-N MPs are illustrated in Figure 5.3. The bottom left figure

represents the Pre-N MP with a single reading and the bottom right figure represents the Pre-N MP with a specific reading.

(5.8)

a san-mai-no **gayoosi**-o katta.
3-CL-GEN drawing.paper-ACC bought
'(I) bought a set of three pieces of drawing paper.'

b san-nin-no **gakusei**-ga kita.
3-CL-GEN student-NOM came
'Three students came.'

The creation of a new set is not profiled but rather backgrounded in Pre-N. The upper part is equivalent to the representation of FL. The two patterns of creating a new set are in the dotted rectangles and the subsets are taken out and highlighted. In these representations, the quantity is not for creating a new subset, instead it represents a crucial attribute of a particular set and may be used to identify a particular set or refer to a certain type. The crucial difference between the MPs in (5.8a) and (5.8b) is that the former set consists of homogeneous non-distinguishable members, while the latter set consists of distinguishable unique individual members. The members in the homogenous set are represented by the same initial and stay contiguous to each other, while in the individual set, each member has a different unique identity (the same initial but a different number) and are not necessarily contiguous.

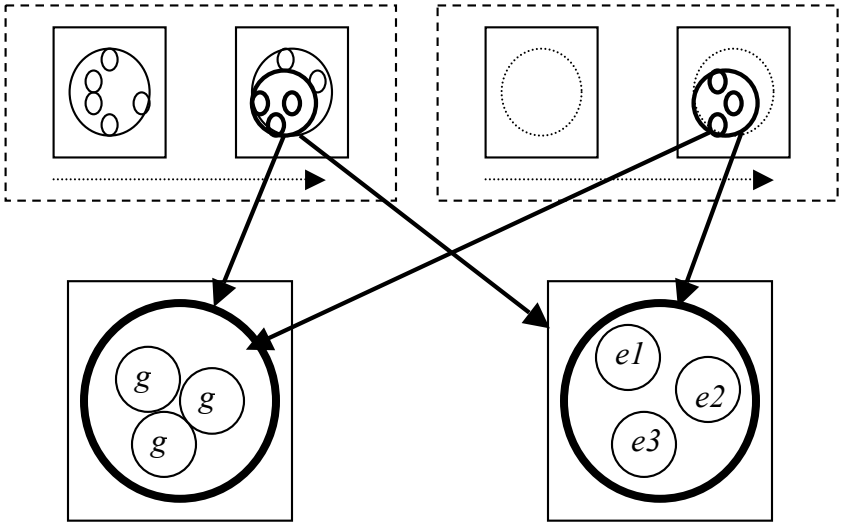

Figure 5.3 Cognitive representation of the Pre-N MPs of (5.8)

As long as the quantity denoted by the NQ is regarded as an attribute of the mass entity or plural entities, Pre-N examples may be acceptable (cf. Chapter 2). For a single reading, a physical proximity of entities is usually quite important for their unity as a set since unique identity of each member is not available. On the contrary, a set consisting of unique members is irrelevant to the proximity condition because the set identity is retrievable from those unique members.[182]

Lastly, I discuss the representation of a JX MP. Downing (ibid: 223) considers that the MP in JX denotes particular referents, not a category. Since the host noun in a JX-spec MP is

[182] Kato discusses the differences between the FL and the Pre-N constructions with a cognitive perspective and claims that cognitive proximity is a crucial factor for the choice between the two NQ constructions (1997a: 56). He proposes the following set of hypotheses.

a The choice of the Pre-N construction indicates that the speaker recognizes plural entities as a set of collective entities.

b The choice of the FL construction indicates that the speaker recognizes plural entities as a set of reciprocally distant entities.

He further claims that for Pre-N to be acceptable, the discourse participants must share the common knowledge that gives enough evidence for the denoted set to be recognized as a single set. On the other hand, for FL to be acceptable, the discourse participants must not share such common knowledge. However, this is relevant to how the information is presented according to the speaker's perception of the given referents, therefore, whether the information is shared by the other discourse participants is not directly relevant.

definite/specific by definition, it refers to particular referents, and the NQ specifies the quantity of the referents. As for JX-list, the host noun represents a subset, but it is not necessarily particular, and the NQ denotes the quantity of the subset. We saw that not only JX-spec but also JX-list is not compatible with a partitive reading, even when the predicate is of consumption (Chapter 4). This strongly indicates that the creation of the set is also backgrounded in JX as in Pre-N, and the quantity designated by the NQ is not directly relevant to the creation of the set. Instead it simply provides supplementary information to elaborate the size of the set.

(5.9)

a karera san-nin-ga kita.
they 3-CL-NOM came
'The three of them came.'

b gakusei san-nin-ga kita.
student
'Three students came.'

I assume that the cognitive representations of the MPs of (5.9) are like in Figure 5.4. The creation of a new set is backgrounded as in the Pre-N's scheme, which is represented by the dotted rectangles. Only the newly created set is taken out and combined to the nominal predicate scheme, which states that the set of entities denoted by the host noun belongs to a group of 'three human beings.' JX-spec and JX-list share this cognitive scheme since their difference is relative.

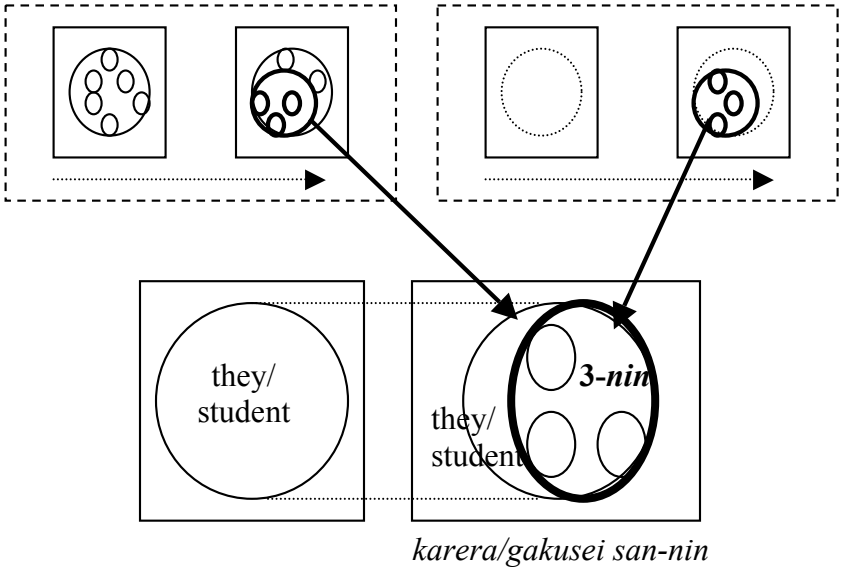

Figure 5.4 Cognitive representations of the JX MPs of (5.9)

An interesting point is that the new set created by the NQ is identical to the denotation of the host noun and is interpreted to represent a different aspect of the same referent. In this respect, the set represented by the NQ has nothing to do with referential function.

Thus, the cognitive representations of denotations of the three NQ constructions all have the process of measurement as shown in their schemes, and they differ with respect to how the results of measurement are presented.

5.3 Distributive reading and collective reading

Pre-N must be 'exhaustive' (Downing 1996) and the NQs in FL are obligatorily interpreted as 'distributive' (cf. 3.3.3.2). Gunji and Hasida (1998) mention that the default interpretation of JX must be 'collective.' In this section, I first discuss the distributive-collective interpretations of the NQs in the three NQ constructions, and then I discuss the scope issues in the NQ constructions in the next section.

G&H (1998: 66) introduce the following contrastive examples. They consider that Pre-N is ambiguous, while FL and JX are not: FL only has a distributive reading and JX has only a collective reading.

(5.10)

a hutari-no tomodati-ga kekkonsita. (Pre-N)
2.CL-GEN friend-NOM get.married
'Two friends got married (to each other/separately).'

b tomodati-ga hutari kekkonsita. (FL)
friend-NOM 2.CL
'Two friends got married (separately).'

c tomodati hutari-ga kekkonsita. (JX)
2.CL-NOM
'Two friends got married to each other.'

Why is Pre-N ambiguous and may have either a collective or distributive reading? The denotation of the MP in Pre-N is an established set/group of individuals. When the denotation as a set is highlighted, Pre-N has a collective reading. On the contrary, when the individuality in the denotation as a set of individuals is highlighted, Pre-N has a distributive reading. As discussed in Chapter 2, the specificity reading originates from the distinguishability of the individual entities denoted by the host noun. In that sense, the entities denoted by Pre-N can be either specific as a set, namely 'a specific set of two friends,' or specific as individuals, namely 'a set of two specific friends.' It is quite reasonable for Pre-N to have a default collective reading since the entities denoted by the Pre-N MP are considered as an established group, although a distributive reading is also available. As discussed in the preceding section, the denotation of a NP-FQ pair in FL is not interpreted as an established set. Due to the lack of status as an established set, FL cannot have a collective reading and each instantiated entity has to be individually involved in the action/event to have a distributive reading as in (5.10b). As for JX, collective reading is preferred as in (5.10c) but it is not necessarily obligatory.

(5.11) tomodati **san-nin**-ga kekkonsita. (JX)
friend 3-CL-NOM get.married
'Three friends got married separately/*to each other.'

Due to the context, collective reading is not available for (5.11). The sentence has to be interpreted with a distributive reading. The collective reading of JX is defeasible unlike the obligatory distributive reading of FL.

The default distributive reading of FL becomes much more salient in the following examples (G&H: 66). (5.12a) is unacceptable since it is impossible for this FL example to have the distributive reading, 'each of three tons of snow smashed the house,' let alone 'each small portion of the snow smashed the house.' (5.12b) is acceptable because Pre-N can have a collective reading, 'three tons of snow as a chunk smashed the house.'

(5.12)
a * yuki-ga san-ton ie-o ositubusita.
snow-NOM 3-CL house-ACC smashed
(Intended) 'Three tons of snow smashed the house.'

b san-ton-no yuki-ga ie-o ositubusita.
3-CL-GEN snow-NOM
'Three tons of snow smashed the house.'

Even if we try to assign a simultaneous reading to (5.12a) by adding an adverb, the sentence would remain unacceptable.

(5.13) * yuki-ga san-ton **isshunnoutini** ie-o ositubusita.
snow-NOM 3-CL in.a.moment house-ACC smashed
(Intended) 'Three tons of snow smashed the house in a moment.'

G&H argue that the unacceptability of (5.12a) is due to the fact that the host NP does not denote an incremental theme. However, non-incremental theme NP examples also show a similar contrast. (5.14a), in which a distributive reading is possible, i.e. 'each student hit Hanako,' FL is

acceptable, while (5.14b) is unacceptable since the distributive reading, 'each of the three students killed Hanako,' is impossible.[183]

(5.14)
a gakusei-ga san-nin Hanako-o nagutta.
student-NOM 3-CL -ACC punched
'Three students punched Hanako.'

b* gakusei-ga san-nin Hanako-o korosita.
killed
(Intended) 'Three students killed Hanako.'

Even if we try to assign a collective reading by adding an adverb, it is still unacceptable.[184]

(5.15) *gakusei-ga san-nin Hanako-o **isshoni** korosita.
student-NOM 3-CL -ACC together killed
(Intended) 'Three students killed Hanako together.'

This is contrastive with the following pair of examples. In (5.16b), the FL seems to be assigned a collective reading due to the co-occurring adverb.

(5.16)
a gakusei-ga san-nin sono-kabin-o motiageta.
student-NOM 3-CL that-vase-ACC lifted
'Three students lifted the vase (separately).'

b gakusei-ga san-nin sono-kabin-o **isshoni** motiageta.
together
'Three students lifted the vase together.'

The difference found between verbs like *kill* and *lift* is interpreted as the distinction whether any direct individual contribution to/ involvement in the action denoted by the predicate is perceived. This is also found in the difference in the acceptability of partial contribution as in the following examples.

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[183] The Pre-N counterpart is acceptable, since the collective reading, 'a group of three students killed Hanako,' is possible.
san-nin-no gakusei-ga Hanako-o korosita. (Pre-N)
3-CL-GEN student-NOM -ACC killed
'Three students killed Hanako.'

[184] Dowty (1984: 85) argues that 'a VP adverb <u>together</u> restricts a plural VP denotation to the set of *groups* within that denotation, while conversely, VP quantifiers <u>both</u> and <u>each</u> will restrict a plural VP denotation to the set of *individuals* within that denotation' (the emphases by italics are mine). However, individual commitment of the given plural entities to the event/activity/state denoted by VP is still obligatorily required in FL.

(5.17)

a * gakusei-ga Hanako-o **sukosi** korosita.
student-NOM -ACC a.little killed
(Intended) 'A student killed Hanako a little.'

b gakusei-ga kabin-o **sukosi** motiageta.
student-NOM vase-ACC a.little lifted
'A student lifted the vase a little.'

The latter is available with a partial completion reading while the former is not. Therefore the simultaneous reading is available for *lift* but not for *kill*.

These examples show that the default reading of FL is distributive and FL never has a collective reading. When FL cannot have a distributive reading, the sentence is judged as unacceptable. Even when FL seems to have a collective group reading due to a co-occurring adverb, it is actually a simultaneous instantiation of multiple events and each member in the group still must individually participate in the event. On the contrary, the MPs in Pre-N and JX have a default collective reading since they are interpreted to denote an established set. This distinction is also relevant to the issues of the scope of NQ, which are to be discussed in the following section.

5.4 Scope of NQ

It is widely known that when there is more than one quantified expression in a sentence, the interpretation of the sentence can be ambiguous due to the different scopes projected by the multiple quantifiers. There have been many studies concerning the scope relations. Van Valin and LaPolla (1997) discuss the issue based on the data from many different languages and claim that it is conditioned by focus structure. They propose the following generalized principle.

(5.18) Principle constraining the interpretation of quantified NPs (ibid: (5.20), 221)
Topical quantified NPs have scope over focal quantified NPs,
i.e. topical Q ⊃ focal Q

Furthermore, VVLP claim that the two sets of factors argued in Ioup (1975) can be associated with their principle.

(5.19) Ioup's Hierarchies adopted in VVLP (222)

Quantifier Hierarchy

each > *every* > *all* > *most* > *many* > *several* > *some* (+NP_{pl}) > *a few*

Greatest inherent tendency toward wide scope ⟷ Least inherent tendency toward wide scope

Greatest individuation, specificity ⟷ Least individuation, specificity

Grammatical Function Hierarchy

Topic > Deep and Surface Subject > Deep Subject or Surface Subject > IO > PrepO > DO

Greatest tendency toward wide scope ⟷ Least tendency toward wide scope

The quantifiers at the top of the hierarchy are considered as more specific than those at the lower end of the hierarchy, and 'the more specific the reference of an NP is, the better it is as a potential topic, and the quantifiers at the top of the hierarchy would yield quantified NPs which would make better topics than those at the bottom.' (VVLP: 222)

Kuno, Takami, and Wu (1999) discuss the scope issues using English, Mandarin, and Japanese data and propose the following set of factors affecting the interpretation of quantifier scope (ibid: 79-80).

(5.20) a. Subject Q > Object Q > Oblique Q

b. Lefthand Q > Righthand Q

c. Human Q > Nonhuman Q

d. Speaker/Hearer Q > Third-person Q

e. More Discourse-linked Q > Less Discourse-linked Q

f. More Active Participant Q > Less Active Participant Q

g. Each > Other Quantified Expressions

They assume that each factor has an equal weight for deciding the interpretation of the quantifier scope and that the quantified expression which has won more factors receives wide scope.[185] These factors are relevant to the VVLP's principle and Ioup's hierarchies in that the relevant factors are pragmatically motivated.

The above crosslinguistic discussions about the scope interpretation are mainly about lexical quantifiers such as existential and universal quantifiers. Gunji and Hasida (1998) discuss the scope issues with FL examples in Japanese. They claim that there is an asymmetry between subject and object host NPs (ibid: 46). Subject NQs may have wide scope over object NQs.

(5.21)

a gakusei-ga san-nin sake-o rop-pon nonda.
student-NOM 3-CL sake-ACC 6-CL drank
'Three students each drank six bottles of sake.'
'Three students drank a total of six bottles of sake.' (G&H (3.18))

b sake-o rop-pon gakusei-ga san-nin nonda.
'Three students drank six bottles of sake.' (G&H (3.19))

In (5.21a), the wide-scope reading of the subject NQ '3 students-18 bottles' is available, while in (5.21b), where the word order of the subject NP and the object NP is reversed, the minimum reading '6 bottles-3 students' is only available and neither the wide scope reading of the subject NQ nor of the object NQ is likely. This asymmetry can be accounted for by some of the factors in (5.20), namely (a, b, and c). Subject, lefthand, and human quantifiers tend to have a wider scope than object, righthand, and non-human quantifiers respectively. In (5.21a), these three factors all favor the subject NQ *sannin* to have a wider scope than the direct object NQ *roppon* and the 18-bottle interpretation is more likely than the 6-bottle interpretation. In (5.21b), the word order is reversed and the object NQ is lefthand, which favors the wide scope reading of the

[185] This assumption that each factor has equal weight is merely for the sake of convenience and not totally reasonable. Rather individual differences in knowledge and preferences may change the weight of factors and affect the overall judgment.

object NQ; however, the other two factors still favor the subject NQ. This explains the slightly different scope interpretation in (5.21) that the object NQ in (5.21b) does not allow the subject NQ to have a wider scope. Thus, the different preferences of scope interpretation can be explained by the set of the general principles introduced by Kuno et al.

Note that these factors are pragmatically motivated and the context may change the weight of each factor. The weight of each condition is not equal and therefore simple addition does not give a clear-cut solution. Instead, the interpretation is usually ambiguous and the preference is a matter of degree. When the beverage is changed from *sake* to *yakult*[186] as in (5.22) the agent subject is much more likely to have wide scope over the drink.[187]

(5.22)

a gakusei-ga san-nin **yakuruto**-o rop-pon nonda.[188]
student-NOM 3-CL -ACC 6-CL drank
(likely): 'Three students each drank six bottles of yakult.'
(unlikely): 'Three students drank a total of six bottles of yakult.'

b **yakuruto**-o rop-pon gakusei-ga san-nin nonda.
(likely): 'Three students each drank six bottles of yakult.'
(unlikely): 'Three students drank a total of six bottles of yakult.'

This difference is simply due to our world knowledge that a bottle of sake can be shared by some people, but a bottle of yakult is too small to share with anyone.

In addition to these factors, I would like to show that the different scope interpretations may be caused by the different NQ construction types. In the previous section, we saw that the default reading of FL is distributive while that of Pre-N and JX is collective. In (5.23), the direct objects are represented by Pre-N. Compared to the counterpart examples in (5.21), where the direct objects are represented by FL, the subject wide-scope reading is less likely. In (5.23b), the

[186] *Yakult* is a lactic acid drink bottled in a small plastic container (65ml. each).
[187] A similar effect can be found when the different classifier, *pai*(/*hai)* 'cup', is used in (5.21). Compared to the classifier, *pon(/hon)* 'bottle', the wide scope for the subject NQ is much more easily available. In addition, even in (5.22b), the subject NQ may have a wide scope, which means that 'each student drank six cups of sake (18-cup-reading)'; rather than 'three students drank a total of six cups (6-cup-reading).'
[188] These sets of examples with *yakult* were provided by Atsuko Nishiyama.

object NQ appears at the lefthand position and is likely to have wide scope. Interestingly in (5.23a), the object NQ appears at the righthand position to the subject NQ, but the wide scope reading of subject NQ is relatively less likely than (5.21a). This is due to a specific reading assigned to the Pre-N object MP in (5.23a), which can be relevant to the factors (5.20e) and (5.20f) and blocks wide scope for the subject NQ. If the Pre-N has a single reading instead, those factors are not relevant and there is no objection to the subject wide scope reading.

(5.23)

a gakusei-ga san-nin **ro-ppon-no** sake-o nonda.
student-NOM 3-CL 6-CL-GEN sake-ACC drank
(likely): 'Three students drank a total of six bottles of sake.'
(less likely): 'Three students each drank six bottles of sake.'

b **ro-ppon-no** sake-o gakusei-ga san-nin nonda.
(likely): 'Three students drank a total of six bottles of sake.'
(unlikely): 'Three students each drank six bottles of sake.'

This is because the default collective reading associated with Pre-N prevents the Pre-N MP from having a distributive reading. This reading is further strengthened in (5.23b) due to the lefthand factor. In addition, the Pre-N MP is often interpreted specific and the FQ always encode new information, which means that the Pre-N object NQ is more discourse-linked Q and/or more active participant Q than the FL subject NQ (Kuno et al. 1999: 67).

When the subject NQ is represented by Pre-N instead of by FL, the scope interpretation becomes slightly different from (5.21). The Pre-N subject NQ may have a wider scope over the FL direct object NQ in (5.24a); however the minimum reading is stronger than in (5.21a) where the subject NQ is in FL.

(5.24)

a **san-nin-no gakusei**-ga sake-o rop-pon nonda.
3-CL-GEN student-NOM sake-ACC 6-CL drank
(likely): 'Three students each drank six bottles of sake.'
'Three students drank a total of six bottles of sake.'

b sake-o rop-pon **san-nin-no gakusei**-ga nonda.

(likely): 'Three students drank a total of six bottles of sake.'
(unlikely): 'Three students each drank six bottles of sake.'

This is mainly because the Pre-N MP can be either interpreted as a group of specific individuals or an aggregate. When it is interpreted as a group of individuals, distributive reading can be assigned to the *students* 'six bottles per student.' When it is an aggregated group, a distributive reading is not likely and a collective reading is preferred. Compared to (5.21b), (5.24b) has much stronger non-distributive reading. Thus the interpretation of scope can be affected by the NQ construction type.

The scope of NQ expressions is decided by the set of factors, but there are still ambiguous sentences with respect to the scope interpretation. In order to avoid such ambiguity, some explicit markers like below are used.

(5.25)

a gakusei-ga san-nin sake-o rop-pon-**zutu** nonda.
student-NOM 3-CL sake-ACC 6-CL-each drank
'Three students each drank six bottles of sake.'

b gakusei-ga san-nin-**zutu** sake-o rop-pon nonda.
3-CL-each
'Three students drank a total of six bottles of sake.'

The particle *zutu*, which is only attached to an NQ, takes the amount denoted by the NQ as a base unit and assigns a distributive reading to the unit, e.g., *rop-pon zutu* means 'six bottles per something'.[189] Thus, *zutu* automatically assigns a distributive reading no matter what factors are involved. On the contrary, there are some adverbial expressions to coerce a collective reading. When the adverbial expression *awasete* is inserted before the NQ, the NQ cannot be assigned a distributive reading no matter what scope factors favor the distributive reading. The latter context

[189] This particle is compatible with Pre-N. As for JX, the particle is directly attached to an NQ, but it sounds quite awkward.

?? gakusei san-nin zutu-ga kita.
student 3-CL each-NOM came
'Students came three by three.'

is unusual, but the adverbial forcefully assigns a collective reading to the object NQ blocking the wide scope reading of the subject NQ.

(5.26)

a gakusei-ga san-nin sake-o **awasete** rop-pon nonda.
student-NOM 3-CL sake-ACC altogether 6-CL drank
'Three students drank a total of six bottles of sake.'

b gakusei-ga san-nin sake-o **awasete** rop-pai nonda.
'Three students drank a total of six glasses of sake.'

Finally, I would like to discuss the influence of distributive expressions to the scope interpretation. Ioup (1975) and Kuno (1997) claim that *each* is considered to have the widest scope among other NPs. This is due to lexical reasons rather than pragmatic reasons. The word requires the modified noun to be interpreted distributive no matter what pragmatic status the noun has. In Japanese, there are several lexical expressions to mark distributiveness.

(5.27)

a gakusei-ga san-nin **sorezore** rop-pon-no biiru-o nonda.
student-NOM 3-CL each 6-CL-GEN beer-ACC drank
'Each of the three students drank six bottles of beer.'

b gakusei-ga san-nin-**zutu** rop-pon-no biiru-o nonda.
-each
'Groups of three students drank six bottles of beer each.'

The adverb *sorezore* 'each' is associated with the actor NQ and the interpretation of (5.27a) is '3 students-18 bottles.' Interestingly, the distributive particle *zutu* 'each' has a slightly different meaning from *sorezore*, that is the modified NQ is considered as collective and the other quantifier has a distributive meaning. Therefore (5.27b) means 'three students per six bottles'.[190] Kuno and VVLP argue that the scope is an issue of information structure; however, these distributive expressions are purely lexical. They are relevant to the scope issues simply because

[190] When there is no other quantifier in the sentence, it is interpreted as 'per event'.
gakusei-ga san-nin-**zutu** hasitta.
Student-NOM 3-CL-each ran
'Three students ran each time.'

they assign distributive meanings. Therefore, I consider such distributive expressions and the other pragmatic factors should not be discussed in the same level.

There are two interesting FL examples relevant to the scope issue. First, Haig (1980) discusses the subject-object asymmetry and claims that the direct object interpretation is more preferred as shown in (5.28b), although both transitive subject and direct object are eligible to host the FQ. In (5.28a), both interpretations are available, while in (5.28b) only the direct object interpretation is available.[191]

(5.28)

a otoko-ga **san-nin** kodomo-o yuukaisita.
man-NOM 3-CL child-ACC kidnapped
'Three men kidnapped the/a child.'
'The/a man kidnapped three children.' (ibid: 1068)

b onna-wa/o otoko-ga **san-nin** yuukaisita.
woman-TOP/ACC
'The men kidnapped three women.'
?? 'Three men kidnapped the women.' (ibid: 1069)

However, I argue that the unacceptability of the second reading of (5.28b) is due to the scope and the default distributive reading of FL. As shown above, although (5.29) has the same syntactic construction as (5.28b), the subject interpretation is also available.

(5.29) kodomo-o gakusei-ga **san-nin** nagutta.
student-NOM child-ACC 3-CL punched
Likely: 'Three students punched children.'
Equally likely: 'A student punched three children.'

The crucial factor behind this contrast in acceptability is whether a distributive reading is available for the subject. The default interpretation of FL is distributive, not collective, therefore, the interpretation of (5.29) and (5.28b) is supposed to be that each of *three men* has to *punch* or *kidnap a child/children*. However, when the direct object occurs initially, it may have a wider

[191] Shimojo (2004) argues that these two sentences have different interpretations because their syntactic constructions are different. When (5.28a) has the second reading, it is a 'fronted NQ construction (F-NQ),' in which the NQ precedes the host NP, while such preposing of NQ is not involved in (5.28b).

scope over the subject, which forces us to interpret that each man has to punch or kidnap the **same** child. This interpretation is likely with the former predicate, but not very likely with the latter predicate. Hence, the second reading is ruled out. In addition, Haig considers that both *the child* and *a child* are available for the interpretation of (5.28a); however, since the subject host NP needs to have a distributive reading, the former interpretation is unlikely. So when the direct object is represented by a specific individual as in (5.30), the sentence is not acceptable unless *Hanako* was kidnapped **three times** by three different men. It is possible to interpret that there are three different individuals whose names are *Hanako* for the second reading but not very realistic.

(5.30) otoko-ga **san-nin** Hanako-o yuukaisita.
man-NOM 3-CL -ACC kidnapped
* 'Three men kidnapped Hanako.'
?? 'The/a man kidnapped three Hanako's.'

Second, when FL has a resultative complement, the word order of the FQ and the resultative complement is restricted like below. The FQ usually precedes the resultative (FQ-RSLT) as in (5.31a). If the resultative precedes the FQ (RSLT-FQ) as in (5.31b), the sentence is quite awkward.

(5.31)
a nuno-o mittu **akaku** someta.
cloth-ACC 3.CL red dyed
'(I) dyed three piece of cloth.'

b ? nuno-o **akaku** mittu someta.
Both: '(I) dyed three piece of that cloth red.'

This cannot be accounted for by 'focus conflict.' Even when the FQ is marked by the particle *sika* as in (5.32), or when the NQ is replaced by a wh-expression as in (5.33), the sentence with the RSLT-FQ word order, is still awkward.

(5.32)

a sono-nuno-o mittu-**sika** akaku some-nakatta.
that-cloth-ACC 3.CL-P(only) red dye-didn't

b ? sono-nuno-o **akaku** mittu-**sika** some-nakatta.

Both: '(I) dyed only three pieces of the cloth red.'

(5.33)

a sono-nuno-o **nan-mai** akaku someta-no.
that-cloth-ACC what-CL red dyed-Q

b ? sono-nuno-o **akaku nan-mai** someta-no?

Both: 'How many pieces of cloth did you dye red?'

This difference in acceptability is caused by the different interpretations of the host noun denotations required by those two elements in question. A resultative complement requires the denotation of the host noun to be bounded, since the resultative construction is always telic and the entities undergo the change of state must be bounded. When the sentence does not have a resultative complement, the predicate can be interpreted either as an accomplishment or activity, while when it does, the predicate is more likely to be an accomplishment rather than an activity as in (5.34).

(5.34)

a iti-zikan-**de**/iti-zikan nuno-o someta.
1-hour-in 1-hour cloth-ACC dyed
'(I) dyed a piece of cloth red in an hour/ pieces of cloth for an hour.'

b iti-zikan-de/ ??iti-zikan nuno-o **akaku** someta.
red
'(I) dyed a piece of cloth red in an hour/??for an hour.'

So the resultative complement strongly requires the denotation of the noun to be bounded and all the entities in that bounded set need to complete the change of state with respect to the action denoted by the predicate.

On the other hand, as discussed in 3.3.3.1, an FQ requires the denotation of the host noun to be a type or a bounded set. If it is a type, the FQ represents a particular number of instantiated entities, while if it is a bounded set, the FQ represents a subset consisting a particular number of

entities. Since the resultative complement requires the host noun to be interpreted to denote a bounded set, the FQ is interpreted to represent a subset, and therefore has a partitive reading. However, the resultative complement has an exhaustive reading and all the relevant entities are interpreted to have undergone the change of state. The resultative complement requires an exhaustive reading but the FQ requires a partitive reading. Due to these contradictory readings, the sentence sounds awkward and unacceptable. On the contrary, in the acceptable word order, FQ-RSLT, the NP-FQ pair denotes a particular number of instantiated entities, and the exhaustive reading of the resultative interpretation is applied to those instantiated entities. No contradiction in interpretation takes place in this case, and the sentence is acceptable.

When the intervening element is a manner adverbial like below, no such conflict of interpretation arises because manner adverbs are not linked to any argument of the given VP.

(5.35)

a nuno-o mittu **sinchooni** someta.
cloth-ACC 3.CL carefully dyed

b nuno-o **sinchooni** mittu someta.
Both: '(I) dyed three pieces of fabric carefully.'

These examples show that the difference in acceptability according to the word order of the resultative complement and the FQ is not due to the focus or information structure because both of these two elements can be in focus together. Instead, the word order constraint on them is functionally motivated and closely related to the scope of those elements.

5.5 Comparison of the three NQ constructions

To conclude the discussion in this chapter, I compare the three NQ constructions and

Downing (1996: 252) shows that the functional differences of the three NQ constructions by the following set of examples.

(5.36)

a mainiti, mainiti, **hitotu-no burausu-o** kite, soozi-o siteita.
everyday everyday one-GEN blouse-ACC wearing cleaning-ACC was.doing
'Day after day, (she) did the cleaning wearing **the same blouse**.'

b mainiti, mainiti, **burausu hitotu-o** kite, soozi-o siteita.
'Day after day, (she) did the cleaning wearing **only a blouse**.'

c mainiti, mainiti, **burausu-o hitotu** kite, soozi-o siteita.
'Day after day, (she) did the cleaning wearing **one blouse**.'

This set of examples neatly shows the functional differences among the three NQ constructions. Since Pre-N has a specific reading, the blouse is identified as a particular one and the Pre-N MP is interpreted as 'the same blouse' as in (5.36a). If the number of blouses in (5.36a) is changed to 'two' as in (5.37a), a single reading may be available and the two blouses are not necessarily the same everyday. Wearing 'two' blouses instead of other number of blouses is interpreted to be routinized. As long as the number is fixed at 'two,' it does not matter which blouses are actually worn. As for (5.36b), since JX has an exhaustive reading, the JX MP is interpreted as 'only a blouse'' even though the expression 'only' is not explicitly used in the sentence. If the host noun in (5.36b) is modified by a demonstrative as in (5.37b), it means 'the same blouse.' The NQ is interpreted as redundant supplementary information for referencing, but it gives an exhaustive reading and the meaning of the sentence would be different if omitted. In (5.36c), the NQ in FL denotes unpredictable quantitative information, and the NP-FQ pair is interpreted to express that the number of blouses happens to be 'one.'

(5.37)

a mainiti, mainiti, **ni-mai-no burausu-o** kite, soozi-o siteita.
everyday everyday two-CL-GEN blouse-ACC wearing cleaning-ACC was.doing
'Day after day, (she) did the cleaning wearing **(the same) two blouses**.'

b mainiti, mainiti, **ano-burausu hitotu-o** kite, soozi-o siteita.
that-
'Day after day, (she) did the cleaning wearing **only that blouse**.'

The distribution patterns of the three NQ constructions show an interesting contrast according to the genre of text (newspaper article vs. novel/literary work) and the type of host nouns (human

vs. inanimate). Table 1.3 shows some interesting contrasts. I focus on the following two points and discuss why such sharp contrasts are found. First, FL is more frequently used in novels than in newspaper articles (44 to 6). Second, in newspaper articles, human NQs prefer FL (42 out of 100 samples) while inanimate NQs prefer Pre-N (40 out of 100). FL is seldom used in newspaper articles and there are only 6 samples in my data.[192] This infrequency is considered to be relevant to the HOP evoked by FL. Since FL must have an unpredictable quantitative variable, (5.38a) implies that there was a possibility that some other number of people might have been killed but the number happened to be 'three.' Such implication based on the pragmatic presupposition is not problematic in individual's subjective statements in daily conversation. However, it sounds slightly inappropriate for newspapers articles, which are required to describe neutral objective facts excluding subjective implications. If JX is used, they are exhaustive and no such implications concerning other possibility are evoked. In addition, use of JX may give some extra credibility to the statement concerning the quantity, because the set of entities referred to by the JX MP is regarded as an established set, which gives confirmation to the quantitative information, compared to the newly introduced set by the NP-FQ pair of FL. When Pre-N is used, it further gives an impression that the entities are fully identified.

(5.38)

a gosoositeita heisi-no happoo-de **yoogisya-ga san-nin** siboosita. (FL)
was.escorting soldier-GEN gunshot-by suspect-NOM 3-CL died

b gosoositeita heisi-no happoo-de **yoogisya san-nin-ga** siboosita. (JX)

c gosoositeita heisi-no happoo-de **san-nin-no yoogisya-ga** siboosita. (Pre-N)

Both: 'Three suspects were shot to death by the escorting soldiers.'

[192] Five out of the six examples have predicates relevant to existence/possession. Downing (1996) shows that FL is very likely to co-occur with an existential predicate.

Thus FL is not likely for newspaper articles, but both JX and Pre-N are available in newspaper articles. My data shows that when the host noun is inanimate, Pre-N is much more preferred while when the host noun is human, JX is much more preferred.

When the host noun is inanimate, JX is not likely to have a specific reading unless the host noun is modified. There are no JX-spec examples that do not have a modifier. If there are no modifiers, JX is supposed to be interpreted to have a list reading. All three inanimate JX examples in my data have a list reading. On the other hand, Pre-N can be interpreted as specific even without any modifier (21 examples out of 40). This difference contributes to the sharp contrast in frequency between the Pre-N and JX when the host noun is inanimate.

On the contrary, when the host noun is human, JX can have a specific reading without any modifier on the host noun. This difference comes from the degree of specifiability of entities denoted by the host noun. Human entities are relatively easier to be identified, therefore likely to be recognized as specific, compared to inanimate entities. Then why are there not many Pre-N (human) examples? When Pre-N is used for human referents, since the set is interpreted as firmly established, the set is likely to receive a pragmatic prominence as a pre-existed salient referent. On the contrary, JX is neutral in that respect and does not have such a special status as a referent.[193] Therefore when the referent is human, JX is preferred to Pre-N for newspaper articles, in which neutral description is required.

In daily conversations, JX is used for a list reading but seldom used for a specific reading. In conversation, the speaker does not have to be objective and neutral with respect to pragmatic implication or assumption. Rather it may sound a little awkward to use JX in casual speech. This may be due to the strong stylistic association between newspaper articles and JX. JX is also often

[193] In my data, five out of ten Pre-N (human) examples have kin terms such as children for their host nouns. This indicates that the set referred to by a Pre-N MP tend to be used when the set is recognized as a firmly established one in the discourse.

used in TV/radio news script and it is recognized as a particular style for delivering news or formal information.

Thus, the functional differences of the three NQ constructions are somehow reflected in the actual distribution patterns of the three NQ constructions.

5.6 Summary

In this chapter, comparing the functional differences of the three NQ constructions, I discussed the inter-constructional relationships among them with respect to the cognitive representations, the scope of NQ denotations, and the distribution patterns in text data. The semantic similarities among the three constructions are based on the cognitive representations of measurement shared by them. Their functional differences such as the scope of NQ can be accounted for according to which part of the measurement process is highlighted for each construction. Furthermore, the distribution patterns of the NQ constructions can be associated with their functional differences.

Chapter 6 Formal Representations of NQ constructions

Based on the previous discussions on the functional and cognitive differences of the NQ constructions, in this section I lay out their differences in formal representations. There are some studies trying to depict the semantic representations of NQ constructions in some formal frameworks (Gunji and Hasida 1998, Mihara 1998); however, such studies mainly concentrate on showing the semantic characteristics of and the constraints on the FL construction. In this chapter I discuss the three major NQ constructions as well as other minor NQ constructions. Based on the analyses in the preceding chapters, I discuss how these three NQ constructions can be formally represented by the RRG framework. First, the clausal logical structures of the NQ constructions and then their relevant phrasal logical structures are formalized. Furthermore, the nominal operators and the linking between the semantic and syntactic representations are discussed.

6.1 Preceding studies

In this section I look at two studies, Mihara (1998) and Gunji and Hasida (1998), in which formal representations of the NQ constructions are discussed.

6.1.1 Mihara's analysis of the clausal logical structure of FL

First I examine the clausal logical structure (LS) of FL proposed in Mihara (1998). Mihara applies Kageyama (1996)'s framework to his analysis of FL. In Kageyama, the three predicate types, intransitive activity, transitive activity, and transitive active accomplishment as in (6.1), have different LS representations as shown in (6.2) respectively.

(6.1)

a Taroo-ga hasitta. (Intransitive activity)
-NOM ran
'Taro ran.'

b Taroo-ga piza-o tabeta. (Transitive activity)
pizza-ACC ate
'Taro ate pizza.'

c Taroo-ga sono-piza-o tabeta. (Transitive active accomplishment)
that-
'Taro ate the pizza.'

(6.2)

a [x **ACT**] (Intransitive activity)
(x = Taro, ACT = **run'**)

b [x **ACT ON** y] (Transitive activity)
(x = Taro, y = pizza, ACT ON = **eat'**)

c [x **ACT ON** y] **CONTROL** [y **BECOME** [$_{state}$ z]] (Transitive active
(x = Taro, y = pizza, z = **eaten'**, ACT ON = **eat'**) accomplishment)

ACT represents a predicate that denotes activity and **ACT ON** represents a predicate that denotes activity that causes the *y* argument to be affected by the activity. **CONTROL** represents causation between two events and the lefthand event in the LS denotes the causer and the righthand event denotes the results. **BECOME** represents a change of state. **CONTROL** and **BECOME** are primitive predicates, while **ACT** and **ACT ON** are not. The latter ones can be replaced by more concrete predicates marked by a dash (') at the end, e.g., **eat'**. The lower case letters, *x*, *y*, and *z*, are variables. Using these LS representations, Mihara introduces the following LS (6.3b) to represent the FL transitive sentence (6.3a).

(6.3)

a Taroo-ga piza-o san-kire tabeta.
-NOM pizza-ACC 3-CL ate
'Taro ate three slices of pizza.'

b [x **ACT ON** y] **CONTROL** [y **BECOME** [[$_{state}$ z] **&** [$_{amount}$ q]]]
(x = Taro, y = pizza, z = **eaten'**, q = three pieces)

The unique point in this Mihara's LS is that the numeral information denoted by the NQ is added as a complement of **BECOME**. So the numeral value is in coordination with the resultative state and they are connected by **&**. Thus, the FQ appears in the LS as an additional argument of

BECOME, the amount variable *q*. This assumption is crucial because it predicts that Pre-N and FL would have different clausal LSs. The following Pre-N is supposed to have (6.4b) for its LS where the value of the variable *y* is 'those three pieces of pizza.'

(6.4)

a Taroo-ga sono-san-kire-no piza-o tabeta.
-NOM that-3-piece-GEN pizza-ACC ate
'Taro ate those three pieces of pizza.'

b [x **ACT ON** y] **CONTROL** [y **BECOME** [$_{state}$ z]]
(x = Taro, y = those three pieces pizza, z = **eaten'**)

He further claims that predicates in FL have to be accomplishments and obligatorily include **BECOME** in their LS's. In other words, telicity is an obligatory condition for FL. Therefore atelic predicates which do not have **BECOME** in their LSs cannot allow Q-float by definition. The stative (psych) predicate *aisiteiru* 'to love,' which lacks **BECOME** in their LS's, cannot host a floating NQ. Mihara's analysis correctly predicts the unacceptability of (6.5).

(6.5)*/?? Taroo-ga onnanohito-o san-nin aisi-teiru.
-NOM woman-ACC 3-CL love-PRG
'Taro loves three women.'

However, his analysis has three major problems. First, there are some atelic predicates which allow floating. The predicates of the following examples are all atelic.

(6.6)

a Taroo -ni/-wa gaikokugo-ga mit-tu hanas-eru.
-DAT/-TOP foreign.language-NOM 3-CL speak-POT
'Taro can speak three languages.'

b kyoositu-ni gakusei-ga san-nin iru.
classroom-LOC student-NOM 3-CL exist
'There are three students in the classroom.'

In (6.6a), the verb *hanas(u)* 'to speak' is followed by the potential marker *-eru*, which makes the sentence atelic. In (6.6b), the existential predicate is stative and the sentence is atelic. These

predicates do not have **BECOME** in their LSs; however these FL sentences are acceptable. These counterexamples are quite problematic for his analysis.

Next, there is a technical issue. What the extended part of this LS actually indicates is that the *y* argument **BECOME**s 'three' as well as **BECOM**ing **eaten'**. Although Mihara himself negates this interpretation, but this LS does not properly reflect the semantic representation of FL.

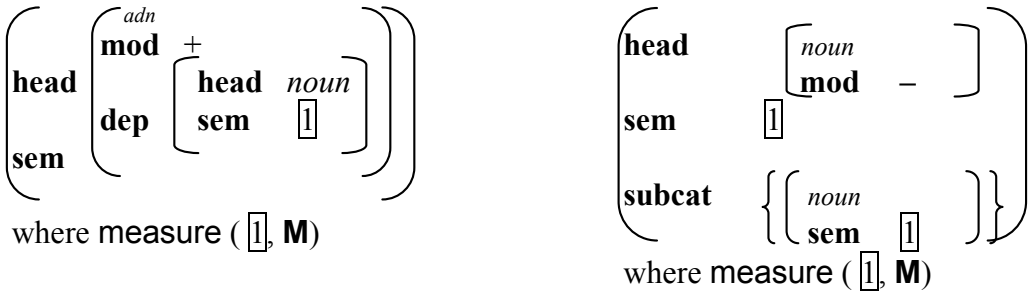
Thirdly, as he admits, this analysis cannot handle FL examples with 'actor subject host noun' because activity predicates are not necessarily active accomplishments. LS (6.3b) also shows that the variable *q* is semantically irrelevant to the actor NP, which is represented by the variable *x*. Therefore FL with the actor host NP cannot be represented by Mihara's LS scheme. He assumes that FL structures with actor subject host nouns have a different scheme for Q-float; however, this assumption makes the analysis less consistent.

(6.7) gakusei-ga san-nin piza-o tabe-teiru.
student-NOM 3-CL pizza-ACC eat-PRG
'Three students are eating pizza.'

In sum, Mihara's formal analysis can deal with most FL examples with direct object host NPs, since the predicates of FL examples are usually telic. However, FL does not necessarily encode a change of state as long as the numeral is interpreted as unpredictable new information and his formal representation cannot deal with such examples as well as subject host NP examples. In addition, there is a technical problem in his representation. The quantitative complement is interpreted as a result of a change of state.

6.1.2 JPSG analysis of the NQ constructions

First, I briefly look at Gunji and Hasida's JPSG semantic representations of the three NQ constructions. Gunji and Hasida (1998) present the semantic representations of the MPs of the three different NQ constructions respectively, using the JPSG framework.[194]



adnominal MP **(Pre-N)** post-nominal MP **(JX)**

Figure 6.1 intranominal MPs

1 corresponds to the entity denoted by the host noun and **M** is the semantic object representing the quantity specified by the MP. For example the Pre-N *san-nin-no gakusei* and the JX *gakusei san-nin*, both 'three students,' are represented as follows.

$$\text{measure}\left(\textit{student}, \begin{bmatrix}\textbf{numeral} & \textbf{\textit{3}}\\ \textbf{dimension} & \textbf{\textit{nin}}\end{bmatrix}\right)$$

G&H (ibid: 44) claim that the Pre-N representation is derivable from that of JX but it is not clearly stated exactly how these representations are related to each other. The representation of NQ in FL is given in Figure 6.2. The major difference in this representation is found at the **dm** part, which stands for 'derived measure' and indicates what is measured. The **dm** in a default adverbial MP is 'incremental theme (incth)' while it is 'agent (agt)' in the case of coerced measurement, in which the host NP is subject.

[194] These MP representations are unified to the semantics of the main predicate and the entire sentence is constructed. For further details, see G&H.

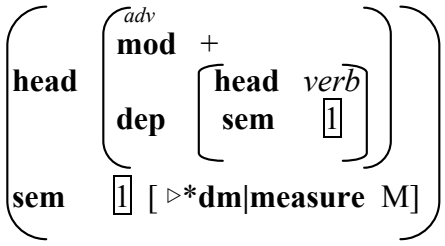


Figure 6.2 adverbial (extranominal) MP **(FL)**

Thus, this formal representation is compatible with FL with object host NP as well as subject host NP, however it just disjunctively describes those two situations in the **dm** part. When the **dm** is **incth**, the predicate is necessarily telic. If so, however, as in Mihara's representations, it cannot deal with FL examples with atelic predicates. G&H have noticed this point and admit that some modification is required.

6.2 Role and Reference Grammar (RRG) analysis

Now, I analyze these structures in the Role and Reference Grammar (RRG) framework. Why RRG? As shown in the preceding chapters, each NQ construction has different discourse functions respectively and the structural characteristics of those constructions are closely related to the semantics and functions of those NQ constructions. This is not exclusively a semantic or syntactic phenomenon; rather cognitive, functional, and pragmatic factors are quite relevant. RRG is concerned about 'how structure, meaning and communicative function interact in human languages' (Van Valin, 2001), which is suitable for my objective to integrate relevant factors in the NQ constructions in a single picture.

6.2.1 Clausal Logical structure of the NQ constructions

Unlike Mihara, I do not assume a unique clausal LS exclusively for FL. Instead I assume that at the clausal level the major three NQ constructions, Pre-N, FL, and JX, have the same LS

representation. Hence the following three constructionally different sentences have the same clausal LS (6.9).[195]

(6.8)

a Pre-N: Taroo-ga san-satu-no hon-o kaita.
-NOM 3-CL-GEN book-ACC wrote

b JX: Taroo-ga hon san-satu-o kaita.

c FL: Taroo-ga hon-o san-satu kaita.

ALL: 'Taro wrote three books.'

(6.9) **do'** (x, [**write'** (x, y)]) & BECOME **exist'** (y)
(x = Taro, y = three books)

Of course these sentences are functionally different and there should be explicit differences in their LSs. Then I assume that the semantic/functional differences are represented at the phrasal LS level and these different LSs are associated with different constructional templates. The rationale for assuming the same clausal LS is twofold. First, the three NQ constructions have the same propositional content and therefore have the same truth-conditions. This common characteristic should be reflected at some level of their semantic representations, i.e. clausal LS. Second, the syntactic template of FL is different from the other two constructions in that the NQ is out of the host NP; however, since the NQ in FL is still semantically bound to the host noun, the NQ needs to have the same semantic interpretation as the host NP in terms of the semantic role (cf. Chapter 3). Hence it is convenient to assume a level where a host NP and its NQ are semantically united. The differences among the NQ constructions, therefore, are to be handled in the phrasal LS representations rather than in the clausal LS representations.

In the following sections, first I show how RRG analyzes the internal semantic structure of an NP, and then discuss the formal differences of the three constructions as well as of their

[195] This representation is similar to Mihara's presentation (6.2c). They are different in that how activity and result are linked. In Mihara, they are linked by CONTROL which represents a sort of causative relationship, while in VVLP, they are simply linked by '&' and a causative relationship is not obligatorily required. RRG explicitly denies that there is causative relationship. See VVLP (ibid: chapter 3) for details.

internal variations of each construction. I will also discuss their syntactic templates and the linking between semantics and syntax.

6.2.2 Nominal Operators

In RRG an NP is assumed to have a layered internal structure with a set of functional operators projected in it. The general scheme of operators in a layered structure for NPs (LSNP) is shown in Figure 6.3 (V&L 1997:53-). There are three major layers, NUCLEUS (NUC), CORE, and NP. Each layer has a set of operators.

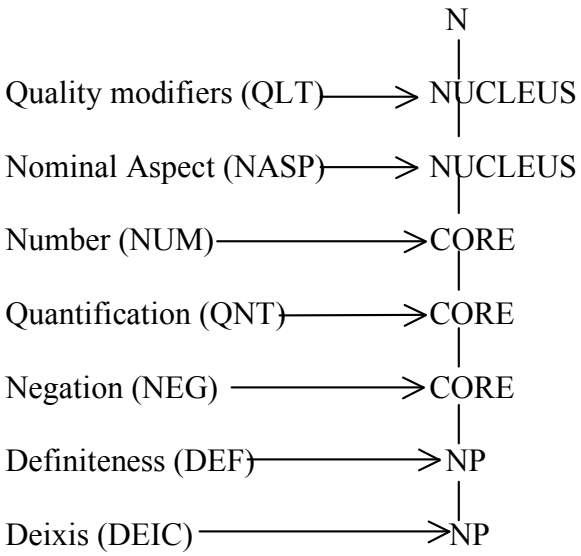


Figure 6.3. Operators in LSNP

There are language-specific variations as to what operators are explicitly marked. For example, NUM and DEF operators are obligatory in English, while they are not in Japanese. The surface word order of NP reflects the order of operators in this hierarchy. Hence NUC operators occur at the closest position to the head noun and NP operators occur at the furthest position from the head noun. CORE operators appear somewhere between the two operators. The operators relevant to the NQ constructions are Nominal Aspect (NASP), Quantification (QNT), and Specificity (SPC) operators. Classifiers are projected in the NASP layer since the choice of

classifier is heavily affected by the semantic properties of the element denoted by the host noun. The numeral in NQ is usually projected in the QNT layer. The last one is not included in the original list of operators. Although specificity can be subsumed under definiteness, it is a crucial factor especially for Pre-N as shown in Chapter 2 and SPC is considered as an NP operator. The relevant operators are highlighted in bold letters in Figure 6.4.

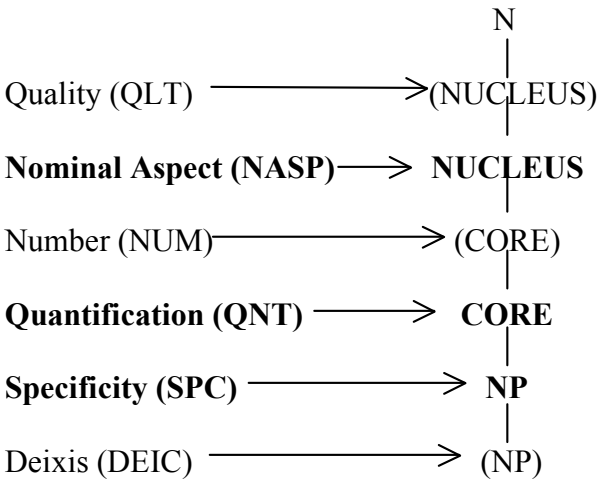


Figure 6.4 Operators in LSNP relevant to Japanese NQ constructions

The basic format of the phrasal logical structure of MP (NQ and its host noun) is thus considered as follows.

(6.10) $<_{SPC}$ (±) $<_{QNT}$ (**x**) $<_{NASP}$ (**CL**) <**hostN**>>>>>

If we assume that the LSs of all the NQ constructions have the above basic LS, we need to introduce some additional factors to differentiate the LS representations of the three major NQ constructions. We've seen that there are two constructional differences among the three constructions; one is in terms of the syntactic constituency of MP and the other is in terms of the word order. The MP is a syntactic constituent in Pre-N and JX while NP-FQ pair in FL is not, and the word order of the host noun and NQ is Q-N in Pre-N while it is N-Q in JX and unmarked FL. I assume that the relationship between form and function is not completely arbitrary. Rather

there can be some association. So how can we interpret these syntactic differences in terms of their functional differences?

First, the constituency of host noun and NQ is interpreted as the degree of how closely the quantitative information designated by the NQ is integrated to the denotation of host noun. In Pre-N and JX, the NQ appears in the same syntactic constituent while in FL it does not. As discussed in Chapter 5, the quantity denoted by the NQ in FL contributes to a creation of a new (sub)set, while in Pre-N and JX it is interpreted as the quantitative attribute of an established (sub)set. Therefore, Pre-N and JX have an exhaustive reading by default, while FL may have a partitive reading. This difference is also found when MP/NQ is marked by the focus particle *sika*. In Pre-N and JX, since the set itself is already formed, the contrast is created against different entities than what the host noun denotes, while in FL since the subset has been just formed, the contrast is found against other entities in the same set or type represented by the host noun (cf.4.3.2). So I use the feature [± **established**] (as a set/unit) and apply [+ established] to Pre-N and JX and [– established] to FL.

Then what does the word order difference mean? I assume that this word order difference corresponds to whether the quantitative information is presented as a predicate or not. In Chapter 3, I showed that the NQ in FL can be interpreted as secondary predicate to the host noun, and in Chapter 4, I also showed that the host noun and the NQ in a JX MP have a topic-comment relationship and that the NQ must be interpreted as a nominal predicate marked by a copula with respect to the host noun. In both cases, the word order is crucial. The NQ follows the host noun and functions as a predicate with respect to the host noun. On the contrary, as shown in Chapter 2, pre-nominal NQs are attributive in all the pre-nominal variations and never are predicative. So I use the feature [± **predicative**] and apply [+ predicative] to JX and FL, and [– predicative] to

Pre-N. In sum, JX is similar to Pre-N in that the quantitative information represented by the NQ is integrated to the denotation of the set, which is irrelevant to the formation of the set. However, compared to Pre-N, the information denoted by the NQ in JX is deemed as supplementary information concerning the entities denoted by the host noun while in Pre-N it is deemed as a crucial quantitative attribute of the set. JX is also similar to FL in that the NQ functions as a predicate with respect to the host noun and the quantitative information in JX is irrelevant to referential function. The three NQ constructions are thus represented by the combination of the values of these two factors as in Figure 6.5.

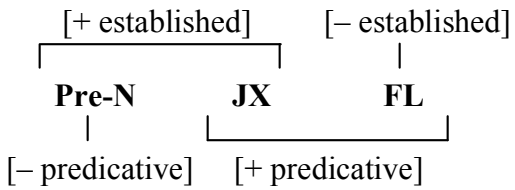


Figure 6.5 Crucial factors for the selection of NQ constructions

6.2.3 Phrasal Logical structure of the NQ constructions

In the following section, I discuss how the LS of the MP in each NQ construction is formally represented.

Pre-N

The two features we have seen above are added to the LS template (6.10). They are represented by two diacritics, [established] and [predicative], which are placed under the QNT variable since these features are most relevant to the numeral information. The values of both features have to be positive in Pre-N while the SPC value can be either positive or negative, which roughly corresponds to the distinction between PreN-spec and PreN-sg.[196]

[196] The feature [± established] is concerned with the entire MP denotation. Therefore it is better to attach this diacritic to the whole LS. However, since NQ still plays a major role in the distinction of this feature, I put this diacritic feature under the QNT operator as the feature [± predicative].

(6.11) $<_{SPC}$ (±) $<_{QNT}$ (**x**) $<_{NASP}$ (**CL**) <**hostN**>>>>>
[+ established]
[– predicative]

The two readings of Pre-N are represented as in (6.12) respectively. (6.12a) represents a PreN-spec while (6.12b) represents a PreN-sg.

(6.12)

a $<_{SPC}$ (+) $<_{QNT}$ (**x**) $<_{NASP}$ (**CL**) <**hostN**>>>>>
[+ established]
[– predicative]

b $<_{QNT}$ (**x**) $<_{NASP}$ (**CL**) <**hostN**>>>>
[+ established]
[– predicative]

The crucial difference between the two readings is found in the SPC operator. It must be positive in the former reading while it is irrelevant in the latter reading. Hence PreN-spec often has some kind of explicit modifier relevant to the specificity. Even when there is no overt modification, if the host noun denotes a distinguishable entity the value of SPC can be positive and satisfies the [- predicative] requirement.

(6.13)

a san-satu-no hon (Specific reading)
3-CL-GEN book
'three books'

b $<_{SPC}$ (+) $<_{QNT}$ (**3**) $<_{NASP}$ (***satu***) <***hon***>>>>>
[+ established] **[+ distinguishable]**
[– predicative]

The host noun ***hon*** in (6.13b) represents a type and the quantity attribute designates the amount of instantiated entities of the type. These basic meanings of LS and the features linked to Pre-N make the interpretation of this phrase 'a set of specific three books (particular three different titles).'

On the contrary, such an effect is unlikely if the host noun denotes a non-distinguishable entity and a specific reading is not available. When the non-distinguishable host noun has no modification as to specificity, the MP needs to be assigned a single reading to satisfy the pre-

nominal attributive requirement. The MP must be interpreted as a single established set so that the QNT value is interpreted as an attribute.

(6.14)
a san-mai-no kami (single reading)
3-CL-GEN paper
'a (established) set of three sheets of paper'

b $<_{QNT}$ **(3)** $<_{NASP}$ **(*mai*)** **<*kami*>>>**
[+ established] **[– distinguishable]**
[– predicative]

The attributive requirement of the Pre-N constructions is relevant to the representations at this level and the acceptability of Pre-N is checked at this level.

FL

The basic phrasal LS of a NP-FQ pair is shown in (6.15). The base part of this LS is an NP, not a noun and this point is relevant to the partitive reading of FL.[197] As discussed above, the entities instantiated by the FQ are not regarded as an established set, since they are newly formed as a set or unit according to the quantity designated by the FQ. The quantitative information denoted by the FQ is predicative unlike Pre-N.

(6.15) $<_{QNT}$ **(x)** $<_{NASP}$ **(CL)** **<host NP>>>**
[– established]
[+ predicative]

I assume that [+ predicative] feature can be elaborated so that a more precise relationship between the FQ and the host noun can be described. So when 'predicative,' what kind of predicative relationship is found between the FQ and its host NP?

Before discussing the more precise relationship between the host noun and FQ in FL, I introduce an interesting contrast in stative predicates, which is raised in RRG. In RRG, the LS of stative predicates like (6.16a) can be represented as in either (6.16b) or (6.16c) (VVLP 1997: 103).

[197] I will deal with this issue when I discuss the operator projection of FL in 6.2.4.

(6.16)
a The flower is white.
b **white'** (flower)
c **be'** (flower, [**white'**])

If the stative predicate is interpreted to express the result of a change of state, the stative predicate takes the subject as an argument in its LS as in (6.16b). If the predicate is interpreted as stable and a change of state is not implied, its proper LS would be (6.16c) where the subject and the predicate are linked by **be'**.

In FL, the FQ encodes new information and the NP-FQ pair creates a brand-new set and introduces it as a new referent in the discourse. This creation of a new set can be considered as a change of state. Hence, the information denoted by the numeral in the FQ is represented by a numeral predicate when the feature [+ predicative] is elaborated as in (6.17b).[198]

(6.17)
a hon-o san-satu kau
book-ACC 3-CL buy
'(I) buy three books.'

b $<_{QNT}$ (**3**) $<_{NASP}$ (***satu***) <***hon***>>>
[– established]
[+ predicative] → ***san-satu'*** (***hon***)

This supplementary predicate ***san-satu'*** 'three-CL(book)' means that the instantiations of entities denoted by the host noun have just been completed according to the quantity designated by the NQ. As shown in Chapter 3, the actual semantic relationship between the denotation of the host noun and the newly introduced set of entities designated by the FQ differs according to the semantic type of the main predicate. In addition, there is a distinction whether the host noun denotes a type or a bounded set.[199] If the predicate is of consumption, the relationship is

[198] The symbol '→' in (6.17b) means 'elaborated as.' The *book* in the basic LS and the *book* in the elaborated predicate in (6.17b) are considered co-referential. The elaborated LS represents the instantiations denoted by the FQ.
[199] In G&H (1998), such semantic variations are represented by different symbols and disjunctive representations.

'inclusion' i.e., the subset denoted by the FQ is part of the set denoted by the host N. If the predicate is of creation, it is 'instantiation of the type denoted by the host noun.'

One of the advantages of this phrasal LS representation is that it can also handle FL examples whose host NP is the actor subject in a transitive sentence. The phrasal LS of the *x* argument in the clausal LS, which corresponds to the actor subject NP in an affirmative transitive sentence, e.g., (6.7), can be elaborated in the same way as the direct object host NP, the *y* argument. Although the host NPs for Q-float are limited to 'core arguments,' the Q-float constraints are closely related to pragmatic and information-structure based factors. Therefore they are handled in the linking between syntax and semantics.

JX

The basic phrasal LS for JX MP is assumed to be like below.

(6.18) $<_{SPC}$ (±) $<_{QNT}$ (**x**) $<_{NASP}$ (**CL**) <**hostN**>>>>
[+ established]
[+ predicative]

Again, the feature [+ predicative] can be elaborated as in (6.19). This time, however, the set is established and the NQ is not responsible for creating a new set; instead the NQ simply denotes the quantity of the established set as supplementary information. Therefore no change of state is assumed with respect to quantitative information and the host noun and the NQ are linked by **be'** as in (6.16c). The basic LS of JX can be elaborated as in (6.19). There are two different representations for the MP of JX according to its specificity.

(6.19)

a $<_{SPC}$ (±) $<_{QNT}$ (**x**) $<_{NASP}$ (**CL**) <**hostN**>>>>
[+ established]
[+ predicative]

b → **be'** (<**host N>**, [**num-CL'**]) (JX-list)

c → **be'** ($<_{SPC}$ (+) <**host N>>**, [**num-CL'**]) (JX-spec)

The predicative MPs in the following JX examples are represented in (6.20b) and (6.21b) respectively. In JX-list, the denotation of the MP is an arbitrary subset of the entities denoted by the host noun while in JX-spec, the host noun itself refers to a particular set of individuals.

(6.20)

a gakusei san-nin-ga kita. (JX-list)
student 3-CL-NOM came
'Three students came.'

b **be'** (<***gakusei***>, [***san-nin***'])

(6.21)

a karera san-nin-ga kita. (JX-spec)
they 3-CL-NOM came
'The three of them came.'

b **be'** (<$_{DEF}$ (+) <$_{NUM}$ **PL <3rd Person>>>**, [***san-nin***'])

As discussed in Chapter 4, the distinction between JX-list and JX-spec is relative according to which slot the first element in the MP occupies in the template. When the host noun represents new entities, the NQ also represents new information as in (6.20). On the contrary, when the host noun represents an activated referent, the host noun itself is good enough to specify the referent and the quantitative information denoted by the NQ is likely to be redundant with respect to the referential function as in (6.21). Even when the NQ provides mere redundant information, it still makes clearer the boundedness of the denotation of the host noun and somehow reinforces the reference to the given set. The acceptability judgment of JX examples mainly depends on the representations at this level; whether the elaborated predicate has a proper 'topic-comment' relationship among the elements in the M is checked.

Finally, when there are more than two elements in a JX MP, I assume that the LS has an embedded structure with multiple **be'**s as in (6.22b). The first host noun and the second host

noun in the MP are first linked by **be$_2$'** and this pair as a larger nominal element is linked to the NQ by **be$_1$'**.[200]

(6.22)
a karera gakusei san-nin-ga kita.
they student 3-CL-NOM came
'They, who are students and a party of three, came.'

b **be$_1$'** ([**be$_2$'** (<$_{DEIC}$ (+) <$_{NUM}$ (PL) <3rd per>>>, <***gakusei***>)], [***san-nin*'**])

Independently case-marked NQs (NQ-c)

Independently case-marked NQs are relevant to either Pre-N or JX. If the source construction is PreN-spec, what does their LS look like? The host noun is dropped with the preceding genitive marker and the NQ functions as a pronoun as in (6.23). Therefore the host noun in LS is represented by the null marker whose antecedent is recoverable from the context and the value of the DEF(/SPC) operator is positive.

(6.23)
a san-nin (-no gakusei) -ga …
3-CL-GEN student-NOM
'The three (students) …'

b <$_{DEF}$ (+) <$_{QNT}$ (**3**) <$_{NASP}$ ***(nin)*** <ϕ >>>>
[+ established]
[– predicative]

Interestingly, when the source is PreN-sg, the genitive marker remains and occupies the host noun slot in LS.[201] The specificity is still irrelevant as other PreN-sg examples and the value of SPC is negative when the MP refers to a generic type.

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[200] (6.22b) represents [[they student] 3-people] but the order of linkage can be different like [they [student 3-people]].

[201] As in (6.23b), it may be possible to assume that the host noun is omitted and the genitive marker stays as what it is. But this usage of the genitive marker is found when the preceding part is a clause.
[gakusei-ga kuru]-**no**-ga sukosi okureta.
student-NOM come-GEN-NOM a.little delayed
'The arrival of the students was a little delayed.'
In that case, it is impossible to assume that the head noun is omitted leaving the genitive marker because relative clauses in Japanese are never connected to their head nouns by the genitive marker.
Thus it may be plausible to assume that the genitive marker in this usage has a nominal property itself. The core part of (6.24b), <***no-ϕ***>, should be interpreted as a nominal element altogether.

(6.24)

a **san-mai-no** (gayoosi) -wa …
3-CL-GEN drawing.paper-TOP
'A three-piece(drawing paper) one …'

b $<_{QNT}$ (**3**) $<_{NASP}$ (***mai***) <***no-φ***>>>
[+ established]
[– predicative]

If NQ-c is related to JX, instead of Pre-N, what does its LS look like? As discussed in Chapter 4, although an NQ itself sometimes can stand alone, it is not actually nominal because we can assume a zero pronoun for the host noun. The NQ is still predicative and lacks a nominal head in the elaborated LS of the MP as in (6.25b).

(6.25)

a **san-nin**-ga arawareta.
3-CL-NOM appeared
'(The) three people appeared.'

b **be'** (<*φ* **>**, [***san-nin*'**])

This empty host noun head may represent a definite set of individuals, or an arbitrary subset of entities denoted by the host noun.

Both Pre-N and JX are likely sources for NQ-c. Some NQ-c examples are related to Pre-N and some to JX. For example, when the NQ-c is directly modified by a SPC/DEIC modifier such as a demonstrative, Pre-N is more likely to be the source than JX because the NQ in JX is never directly modified by a demonstrative. However, it is not always clear which one is the source construction, e.g., N-*no* Q ('summative appositive') examples discussed in 4.4.2.

6.2.4 Operator Projections

In this section, we consider how NP operators are projected in each NQ construction.

Pre-N

Pre-N spec needs to have its [SPC] value positive by definition. When there is a modifier that is relevant to specificity, a specific reading is automatically granted to the Pre-N MP and the

attributive requirement of Pre-N is satisfied. In (6.26), the DEIC operator is projected by the demonstrative modifier, which guarantees a specific reading (Figure 6.6).[202]

(6.26) **ano**-san-bon-no tabako-o sutta.
that-3-CL-GEN cigarette-ACC inhaled
'I smoked those three cigarettes.'

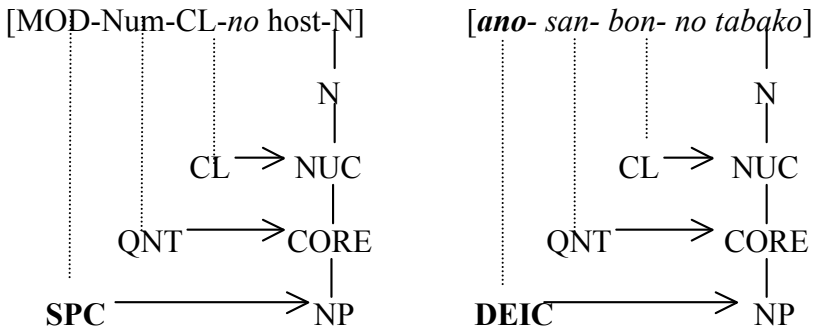

Figure 6.6 Operator projections of PreN-spec MP

We saw that the spec reading is available even when the Pre-N does not have any explicit modifier relevant to specificity. However, the reading is available only when the entity denoted by the host noun is distinguishable. Therefore, even without a proper modifier, an SPC operator can be projected in the NP layer due to and the [+ distinguishable] host noun, which is a construction-specific support of the Pre-N construction. On the contrary, no SPC projection is available when the host noun denotes a non-distinguishable entity. The nominal projections of the MPs in sentences (6.27a,b) are shown in Figure 6.7.

(6.27)
a Taroo-ga san-satu-no hon-o katta.
-NOM 3-CL-GEN book-ACC bought
'Taro bought three books.'

b ? Taroo-ga san-bon-no tabako-o katta.
-NOM 3-CL-GEN cigarette-ACC bought
'Taro bought three cigarettes.'

[202] When Pre-N is modified by a relative clause the relative clause is projected as a periphery, and the level of projection differs by the type of relative clause. If it is a restrictive relative clause it is projected in the NUC layer. If it is a non-restrictive relative clause it is projected in the NP layer. (VVLP)

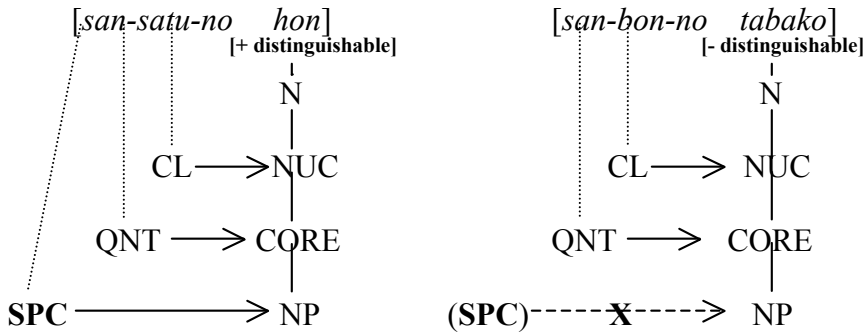

Figure 6.7 Nominal projections of the Pre-N MPs in (6.27)

The Pre-N MP in (6.27b) does not have a specific reading, and therefore it has no SPC operator projected in the NP layer, as shown in Figure 6.7.

When SPC projection is unlikely, the quantity projected by QNT must be interpreted as an attribute to fulfill the Pre-N requirement, otherwise (6.27b) is judged unacceptable. If the context allows the Pre-N MP to have a single reading, the projection would be simplified as in Figure 6.8. Specificity is irrelevant in this projection.

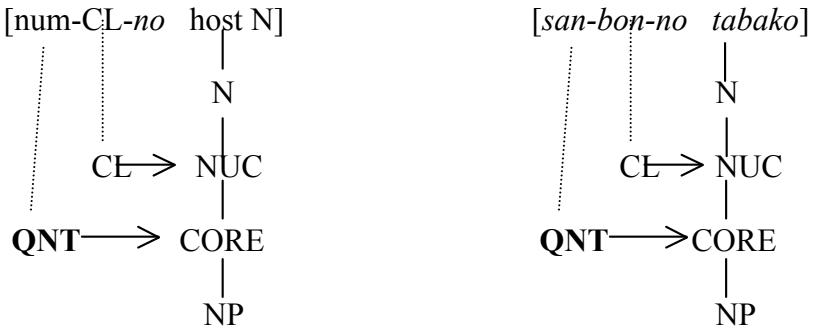

Figure 6.8 Operator projection of PreN-sg MP

When the host noun in a Pre-N MP is omitted, PreN-spec and PreN-sg have different representations. In Pre-N spec, the genitive marker is also dropped with the host noun, while in Pre-N set the genitive marker is intact. The former refers to a specific set of individuals and functions like a pronoun. The latter refers to a type, which can be an individual set but not necessarily so.

(6.28)

a	ano-san-nin-no gakusei that-3-CL-GEN student 'those three students'	→	ano-san-nin (-**no** gakusei) 'those three (students)'
b	san-mai-no gayoosi 3-CL-GEN drawing.paper 'a set of three pieces of drawing paper'	→	san-mai-**no** (gayoosi) 'one with three pieces (of paper)'

The projections of these MPs are shown in Figure 6.9. The genitive marker *no* is promoted to be associated with the layers of the omitted host noun when Pre-N-set.

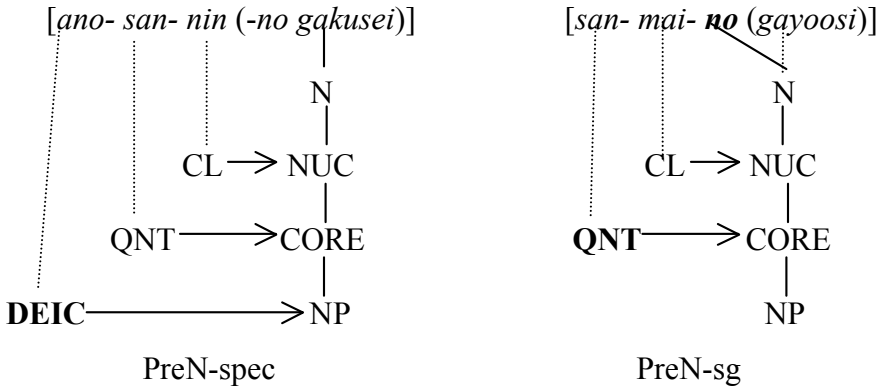

Figure 6.9 Pre-N MPs with omitted host nouns

In sum, for Pre-N examples to be acceptable, the attributive requirement must be satisfied. This requirement is satisfied by the projection in SPC layer for PreN-spec while it is satisfied by the projection in the QNT layer. The former SPC projection automatically qualifies as an attribute while the latter QNT projection needs contextual support to qualify as an attribute.

FL

In FL, a host NP and its FQ form a semantic unit, therefore it is reasonable to assume that they have a single projection. The FQ is not nominal and does not have its own nominal projection. However it has some operators to project on the NP layers of the host noun. The MP of (6.29) is represented as in Figure 6.10.

(6.29) tabako-o san-bon sutta.
cigarette-ACC 3-CL inhaled
'(I) smoked three cigarettes.'

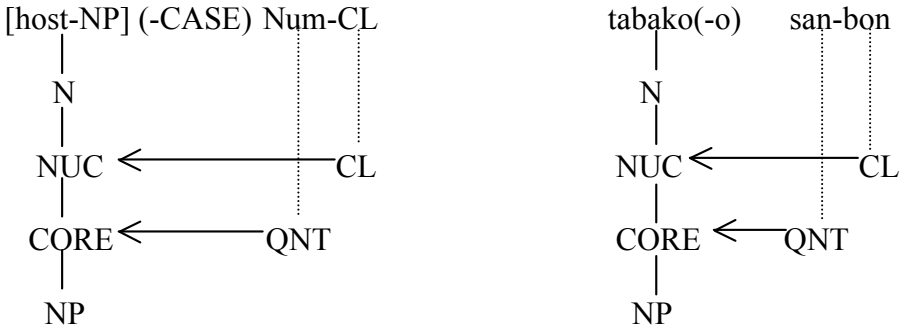

Figure 6.10 Operator projection in FL

As discussed in Chapter 3, when the host noun denotes a bounded set like in (6.30), FL has a partitive reading.

(6.30) **sono**-tabako-o san-bon sutta.
that-cigarette-ACC 3-CL inhaled
'(I) smoked three of those cigarettes.'

The demonstrative *sono* modifies the host noun and makes the denotation of the host noun bounded. However the operator of the demonstrative is not projected in the matrix layers; instead the entire projection of the bounded host noun is embedded in the projection of the NP-FQ pair since the demonstrative exclusively modifies the denotation of the host noun and does not directly modify the instantiations denoted by the NQ.[203] So the operator projection of the NP-FQ pair of (6.30) looks like Figure 6.11.[204] The bounded set denoted by the host NP is represented in the larger dotted rectangle.

[203] The projection by FQ in FL never has an NP level operator or any other operators but the NASP(CL) and QNT operators. So the FQ is never modified by a demonstrative or an adjective.
tabako-o *ano-/*takai san-bon sutta.
cigarette-ACC that-/expensive 3-CL inhaled
Intended: '(I) smoked those three cigarettes/(I) smoked three expensive cigarettes.'

[204] There is no overlap of operators and the operators associated with a single MP projection are in sort of a complementary distribution. Each operator is pre-determined as to which element, the host noun or the NQ, to be linked with. For example, ADJ(ective) or SPC operator cannot be linked to the NQ.

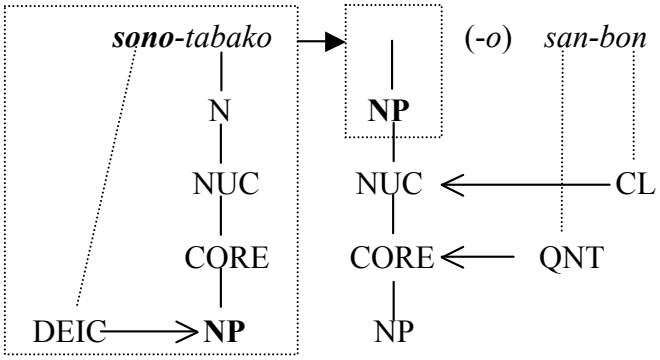

Figure 6.11 Operator Projection of FL with a bounded host NP

There are two projections in this figure, one for the host NP and the other for the entire NP-FQ pair. The host NP denotation is embedded in the projection of the NP-FQ pair. The entire LS of the NP-FQ pair takes the NP projection of the host NP for its base part as illustrated in Figure 6.11. The final outcome of this entire projection is a brand-new set of instantiated entities whose quantity is designated by the FQ. When the host NP refers to a bounded set, the gap between the quantity assumed for the bounded host NP and the quantity designated by the FQ creates a partitive reading. On the contrary, when the host NP denotes a type, again the projection of the host NP is embedded in the projection of the NP-FQ pair. However, since a type is unspecified with respect to quantity, a partitive reading usually does not arise.

As will be shown in (6.40) in which the host noun is represented by a Pre-N, two different quantities can be projected in a single FL projection. This embedded projection model can handle such examples.

JX

The operator projections of JX-spec and JX-list are only different in the value of the specificity operator. JX-spec needs a SPC projection by default, while JX-list is irrelevant to specificity for

its acceptability. When JX has a list reading like (6.31), it has no SPC projection as in Figure 6.12[205].

(6.31) gakusei san-nin-ga kita.
student 3-CL-NOM came
'Three students came.'

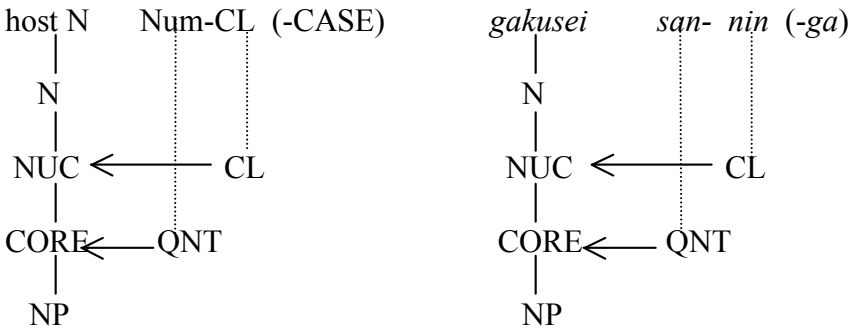

Figure 6.12 Operator projection of JX-list

The NQ itself has no layers for projection on its own since it is not a noun. It is simply linked to two operators. This is almost equivalent to that of FL, and the only difference is the location of case marker (cf. Figure 6.10). However, JX-spec has a different projection from that of FL. The JX MP in (6.32) has the following projection as in Figure 6.13.

(6.32) sono-gakusei-tati san-nin-ga kita.
that-student-PL 3-CL-NOM came
'The three students came.'

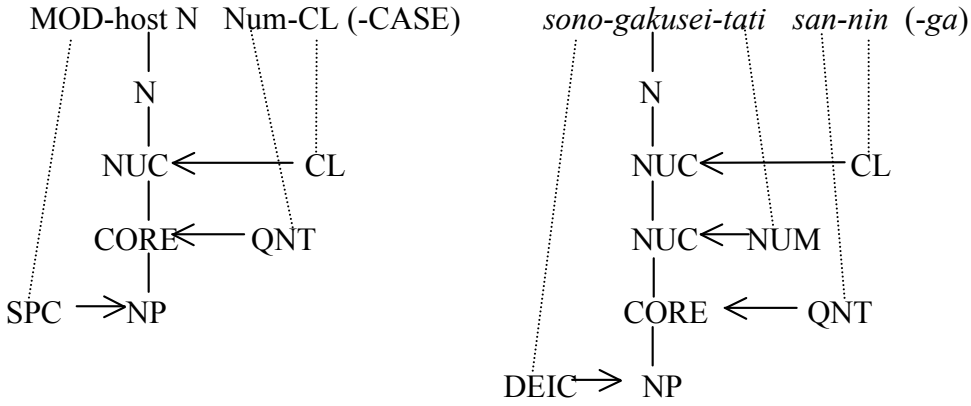

Figure 6.13 Operator projection of the JX-spec MP in (6.32)

[205] Generally, there is no overlap of operators and the operators associated with a single MP projection are in sort of a complementary distribution. Each operator is pre-determined as to which element, the host noun or the NQ, to be linked with. For example, ADJ or SPC operator cannot be linked to the NQ.

The two sets of operators projected from the two elements seem to be in a complementary distribution as a whole. The operators are also limited as to which element, the host noun or the NQ, to co-occur with. For example, the SPC operator cannot freely mark the NQ.

(6.33) *gakusei **sono**-san-nin-ga kita.
student that-3-CL-NOM came
Intended: 'The three students came.'

Figure 6.13 clearly illustrates that the NQ in JX-spec adds supplementary, and often redundant, information to the referent whose identification has been completed by the NP level operator. If there are more than two elements in a JX MP, the projections of the multiple host noun elements are parallel to some extent but must have been merged at the NP level. (6.34) can have two extreme representations as shown in Figure 6.14. The host nouns in the left one have a maximum independence in their nominal projections while those in the right one are merged at the very beginning and have a minimum independence of each other. In the former one basically no operator projections are shared while in the latter one all operator projections are shared.

(6.34) karera gakusei san-nin-ga kita.
they student 3-CL-NOM came
'They, who are students and a party of three, came.'

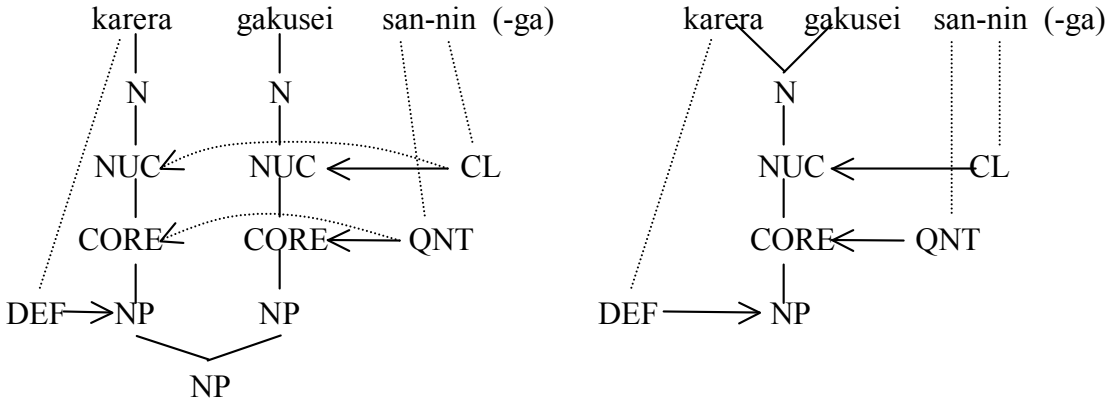

Figure 6.14 Two possible projection patterns for JX MP with multiple host nouns

NQ-c (Independently case-marked NQ construction)

As discussed in Chapter 4, when an NQ is independently case-marked, we can assume two source constructions; one is Pre-N and the other is JX. When the source is Pre-N, its projection is illustrated as in Figure 6.9.[206] When the source is JX, the basic projection scheme is like Figure 6.15. The omitted host nouns in (6.35) are interpreted as a zero pronoun regardless of their specificity. So both JX MPs have the same projection. The NQ just projects QNT and NASP operators.

(6.35)

a (karera) san-nin-ga kita. (JX-spec)
they 3-CL-NOM came
'The three (of them) came.'

b (gakusei) san-nin-ga kita. (JX-list)
student
'Three (students) came.'

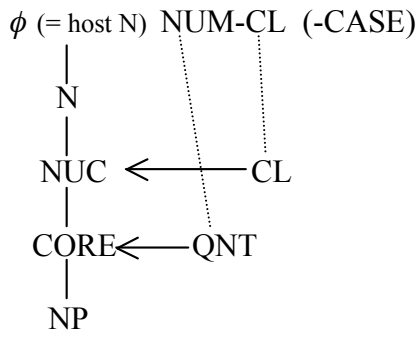

Figure 6.15 NQ-c derived from JX MP

When the omitted host noun is definite as in (6.35a), the NQ appears to be pronominal, but the nominal layers are built under the zero pronoun. When the host noun is a bare noun as in (6.35b), the host noun itself represents a type; however the entire JX MP denotes an arbitrary but

[206] When the host noun in PreN-sg is omitted, the genitive marker has to stay intact; therefore, PreN-sg cannot be a source for NQ-c.

established subset of entities due to the constructional meaning. Thus independently case-marked NQs do not have overt nominal heads; however, they can be interpreted as a subtype of JX.[207]

6.2.5 Syntactic Templates

In this section, I deal with the syntactic templates of the NQ constructions. Since Pre-N and JX simply represent an noun phrase, I discuss the templates of FL and combinations of multiple NQ templates.

6.2.5.1 Templates of FL

There are two default syntactic templates for FL sentences; one is for object host NP and the other is subject host NP. The syntactic templates for these two cases are shown in Figure 6.16.

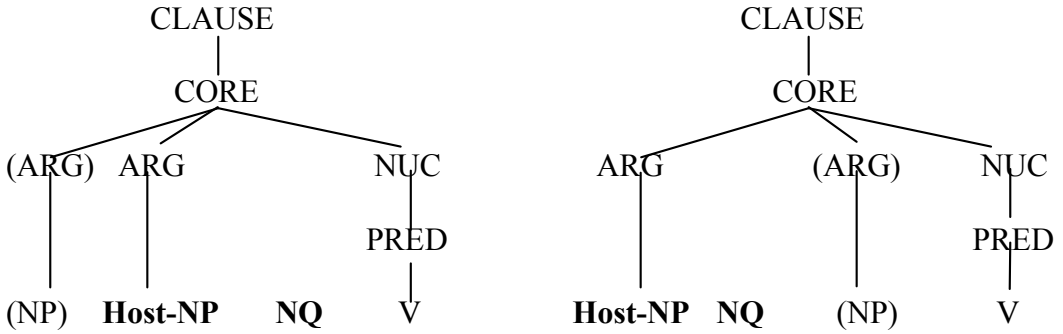

Figure 6.16 default syntactic templates of FL sentences

The host noun has to be a core argument.[208] In RRG, FQs are not regarded as adverbs and they have no direct semantic link to their predicates.[209] FQ mostly occurs immediately after the host

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[207] The Post-N (N-*no* Q) construction can also be considered as a variation of NQ-c; however, there are some Post-N examples that do not have an appropriate host noun like below.

titi-to imooto-no **hutari** (-no [host N]?) -wa …
father-and yonger.sister-GEN 2.CL -GEN -TOP
'Father and younger sister, the two of them, …'

In this example, there is no appropriate host noun to represent both of the preceding nouns.

[208] At least it has to be subcategorized and the semantic role with respect the predicate is recoverable when the case marker is omitted (cf. 3.4)

[209] The treatment of FQ depends on how one defines 'adverb.' Some studies explicitly claim that FQs are adverbial (Okutsu 1969).

noun and usually immediately before the predicate. However, FQ can be fronted as in (6.36) (cf. 3.5.1).

(6.36) **san-satu** Taroo-ga hon-o katta.
3-CL -NOM book-ACC bought
'Taro bought THREE books.'

Fronted FQs are interpreted to occur in the pre-core slot (PrCS) because they can be focused. They are often represented by a wh-word as in (6.37).

(6.37) **nan-satu** Taroo-ga hon-o katta-no?
what-CL -NOM book-ACC bought-P
'How many books did Taro buy?'

The default focus domains for FL and F-NQ are shown respectively in Figure 6.17. The potential focus domain in Japanese covers the entire clause, which is represented by the areas surrounded by the thin dotted lines. If the NQ has a narrow focus, the actual focus domain falls on the NQ, which is represented by the bold triangle as in the unmarked focus domain representation (FL) in Figure 6.17. The default focus position in Japanese is the immediately pre-verbal position. This position actually coincides with the default position of the NQ whose host NP is absolutive. However, as discussed in Chapter 3, the NQ in FL is always in focus but its host NP and other elements in the sentence may also be in focus according to the focus structure of the sentence. Therefore, the actual focus domain may expand to other elements in the sentence. For the marked focus domain representation (F-NQ), the potential focus domain is also the entire clause. If the default focus position remains intact, the default actual focus domain is considered to fall on the host NP. However, as discussed in 3.5.1, when the fronted NQ is overtly marked with a focus, the actual focus domain may shift to the fronted NQ, which is represented by the dotted triangle in Figure 6.17. (6.37) has an overtly marked fronted NQ and is considered to have this information structure, in which the actual focus domain is shifted to the fronted element.

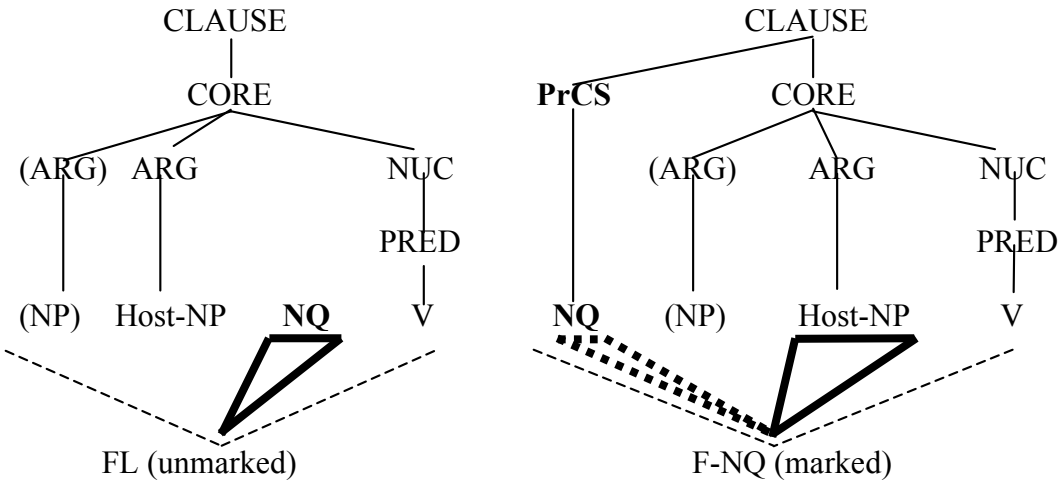

Figure 6.17 Default focus domains of FL and F-NQ

FQ hardly occurs post-verbally. If the FQ is interpreted as being in the right dislocated position (RDP), the sentence is acceptable. It is simply interpreted as an addition to the sentence after a second thought. However, if the FQ is in the post-core slot (PoCS),[210] the sentence sounds quite awkward as in (6.38a) and a wh-word is never allowed in PoCS in Japanese as in (6.38b).[211]

(6.38)

a */?? Taroo-ga hon-o katta, **san-satu**.
-NOM book-ACC bought 3-CL
Intended: 'Taro bought books, and the amount is three.'

b * Taroo-ga hon-o katta-no, **nan-satu**?
bought-Q what-CL
Intended: 'How many books did Taro buy?'

Thus the word order and the information structure are mutually related and both relevant to the acceptability judgment of FL examples.

6.2.5.2 Combinations of the templates of NQ constructions

The NQ constructions in Japanese are classified into several different construction types. However, this does not necessarily mean that each construction is mutually exclusive. Since the

[210] PoCS is entitled to predictable elements and no focal elements are allowed to be there. (Shimojo 1995).
[211] In casual speech, examples like (6.38a) may occur when the predicates are marked by sentence final particles.

syntactic templates of the NQ constructions are phrasal, more than one NQ construction can be used in the same clause and actually there are quite a few such examples. Of course not all combinations are acceptable, rather only a few particular combinations are actually found. The combination pattern and the restrictions on the combination can be accounted for in terms of the functions of each construction. Table 5.1 shows the breakdown of the number of multi-NQ construction examples in 'others' in Table 1.

Table 6.1 Breakdown of 'others' in Table 1.3

	Saga		**Aozora**		**total**
	3tu	***3nin***	***3tu***	***3nin***	
1-3	14	1	2	1	18
1-4	9	2	0	2	13
3-4	0	0	1	0	1
1-3-4	0	0	2	0	2
others[212]	1	4	2	3	10
total	24	7	7	6	44

Most of the examples in the category 'others' in Table 1.3 are actually combinations of two or more NQ constructions. Most of the examples are the combination of either Pre-N and N-*no* Q (1 and 3) or Pre-N and JX (1 and 4). In this section, I discuss 'Pre-N+JX' and 'Pre-N+FL.'[213]

Pre-N+JX

When the NQ is modified by a SPC modifier or replaced by a Pre-N MP, it may have its own projection. However, I assume that the host noun projection and the NQ projection are not equal. Rather the former is the main one and the latter is the subordinate one because the main function of JX-spec is reference; the leftmost element in the JX MP is solely responsible for identifying the referents. When a Pre-N MP is embedded in a JX MP, it is supposed to have a set of layers

[212] The category 'others' in Table 6.1 mainly consists of a predicative use of NQ that is often followed by a copula like below.

san-nin-da. 'It's three people.'
3-CL-COP

[213] Although there are no examples including FL, such examples are possible.

for its operator projection that is separate from the projection of the host noun, since it has its own nominal head. These two sets of layers are to be integrated at some point because they are in the same NP. Since this Pre-N has a SPC operator, it is assumed to have its own layers up to the NP level.

(6.39) karera **san-nin-no gakusei** -ga kita.[214]
they 3-CL-GEN student-NOM came
'They, the three students, came.'

Thus the projection of Pre-N + JX is different from that of JX.

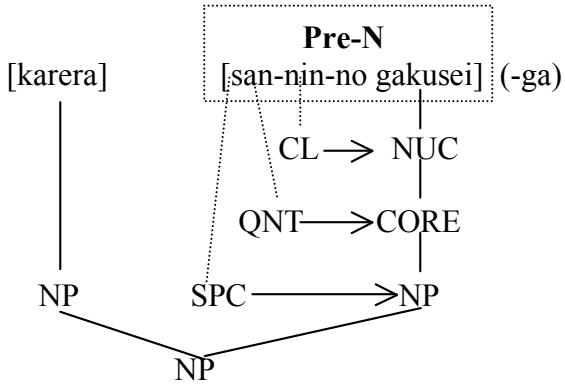

Figure 6.18 Projection of Pre-N + JX

Pre-N+FL

Although there is no real example of this pattern in the data (cf. Chapter 1), this combination is possible. However, there can be two QNT operators when two NQ constructions are combined.

(6.40) **go-hon**-no biiru-o **san-bon** nonda.
5-CL-GEN beer-ACC 3-CL drank
'(I) drank three of the five beers.'

When the host NP of FL is a Pre-N, the host noun is simply replaced by the Pre-N in the syntactic template, while in the LS representation, the projection of Pre-N is embedded in the main FL projection. Pre-N itself also has its own projections and an internal structure.

[214] Strictly speaking, the second part is not an NQ, and the whole construction is not a typical JX MP. However, I consider this type as a variation of JX since the general construction is the same and an appositive relationship is found among the internal elements.

(6.41) **ano-ro-ppon-no biiru** -o san-bon nonda
that-6-CL-GEN beer-ACC 3-CL drank
'(I) drank three of those six beers.'

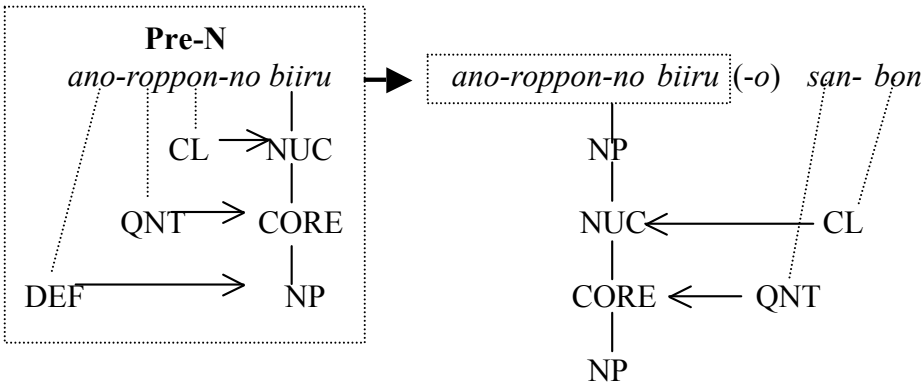

Figure 6.19 Projection of Pre-N + FL

The projection shown above matches the figure 6.11 in that the operators of the Pre-N MP are not projected in the main layers.

6.2.6 Linking

In this section, I illustrate the linking from syntax to semantics of each NQ construction and discuss ambiguous interpretations. The host NPs in the following examples in this section are all Undergoers and all of them have the same clausal LS. Their phrasal LSs have the same format but different feature values for [established] and [predicative].

First, for Pre-N, there is no major difference between the two readings with respect to linking. If the Pre-N MP is a core argument, it is simply assigned to a macro role and linked to the LS. The linking patterns of the following Pre-N sentences are given in Figure 6.22. Linking goes into the phrasal LS level of the Pre-N MP.

(6.42)

a Taroo-ga san-satu-no hon-o kaita. (PreN-spec)
-NOM 3-CL-GEN book-ACC wrote
'Taro wrote three books.'

b Taroo-ga zyup-pon-no tabako-o katta. (PreN-sg)

-NOM 10-CL-GEN cigarette-ACC bought
'Taro bought a set of ten cigarettes.'

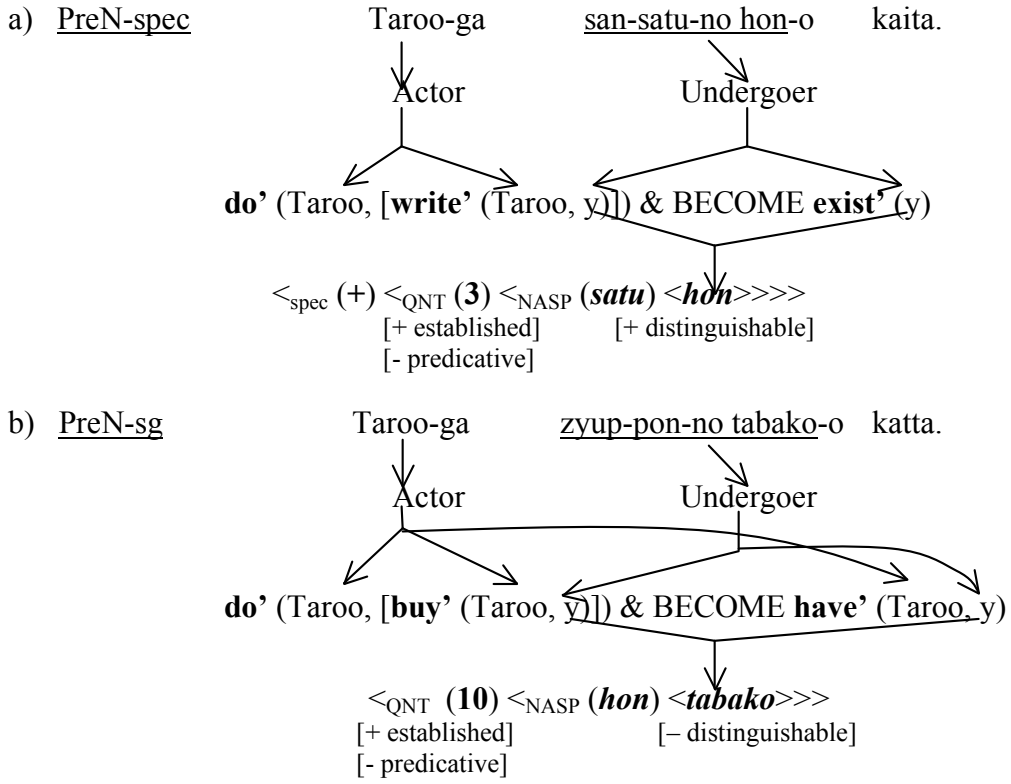

Figure 6.20 Syn→Sem linking of (6.42)

The two readings of JX do not show a big difference in linking. The linking patterns of the following JX sentences are given in Figure 6.23. A crucial point here is that linking reaches the elaborated predicative relationship of the phrasal LS of the JX MP.

(6.43)

a Taroo-ga sono-ronbun san-bon-o kooseisita. (JX-spec)
-NOM that-thesis 3-CL-ACC proofread
'Taro proofread those three papers.'

b Taroo-ga ringo san-ko-o katta. (JX-list)
apple 3-CL-ACC bought
'Taro bought three apples.'

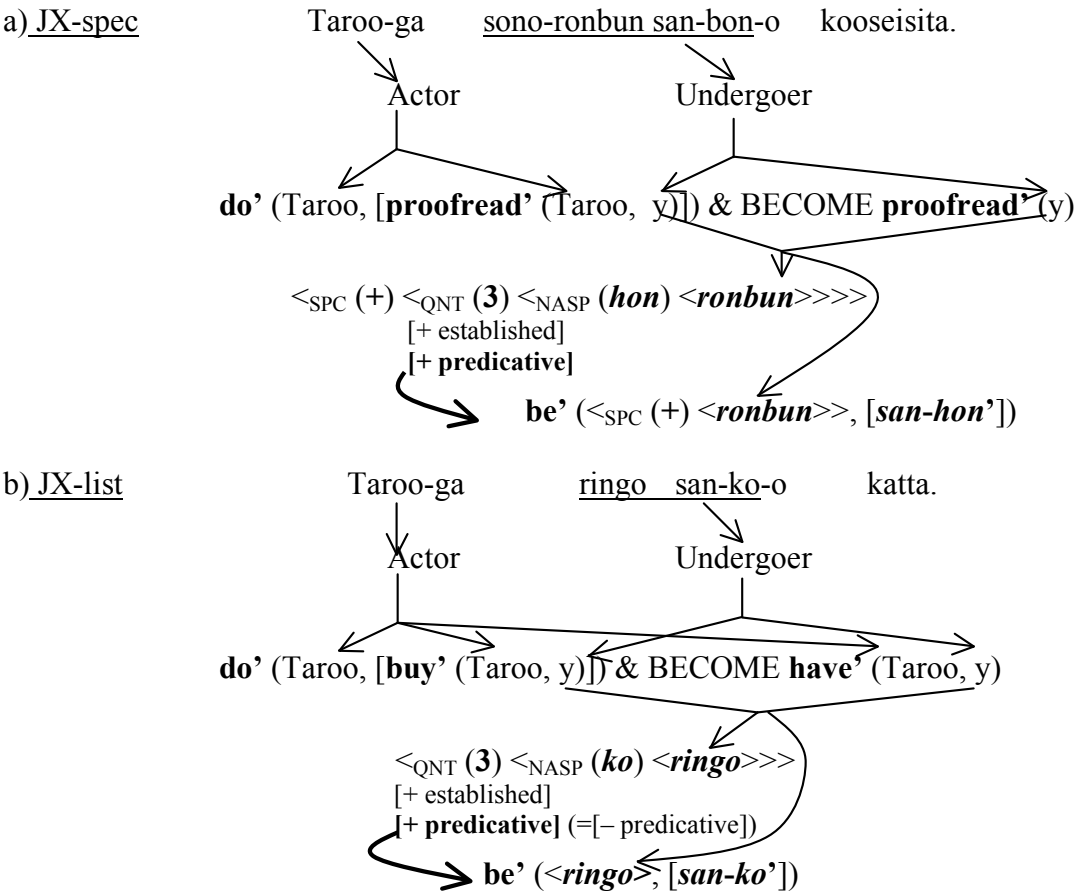

Figure 6.21 Syn→Sem linking of (6.43)

Finally, the linking pattern of the following FL sentence is given in Figure 6.24. Again, linking develops into the elaborated phrasal LS.

(6.44) Taroo-ga hon-o san-satu kaita.
-NOM book-ACC 3-CL wrote
'Taro wrote three books.'

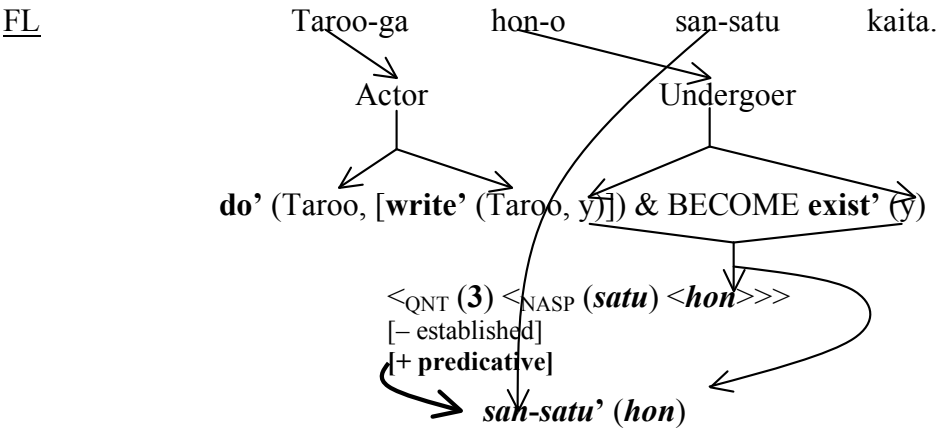

Figure 6.22 Syn→Sem linking of (6.44)

The FQ is linked with the predicate in the elaborated LS, which takes the host noun for its argument. The host NP is appropriately chosen by a combination of factors such as word order and the host eligibility hierarchy. Since (6.44) has an Undergoer host NP and its Actor NP is a proper noun in the default word order, there is no competition for hosting the FQ. However, if the subject NP is supposed to host the FQ, there can be some competition with the co-occurring object NP as in (6.45). Any argument in an FL sentence is eligible to host an FQ, which means that any argument may have a phrasal LS as shown in Figure 6.23.

(6.45) *gakusei-ga biiru-o san-nin nonda.
student-NOM beer-ACC 3-CL drank
'Three students drank beer.'

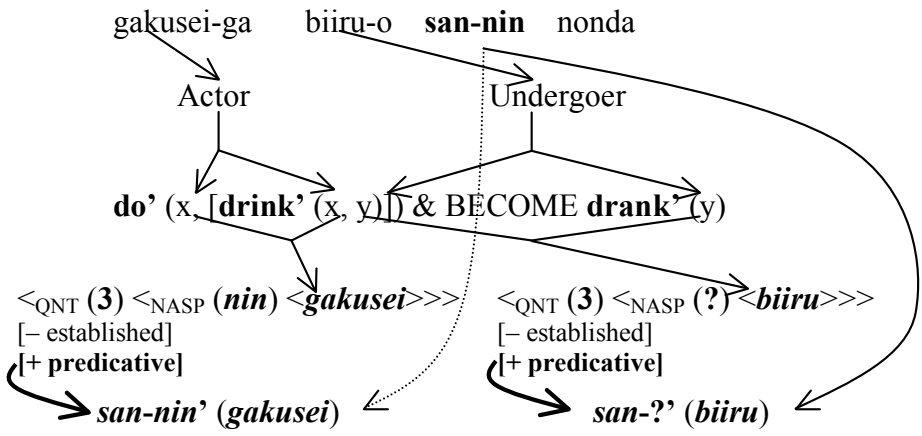

Figure 6.23 Erroneous Syn→Sem linking of (6.45)

Since the host NP and the FQ are not adjacent due to the intervention of the direct object, the link between the host NP and the FQ is not properly established, although the classifier clearly indicates which NP is the appropriate host for the FQ. If the sentence does not have any plausible hypothetical open proposition, which helps us build the correct link, the FQ is not appropriately linked to the host NP; instead, it is linked to the adjacent direct object NP that is more eligible as a host NP as shown in Figure 6.23. The sentence becomes unacceptable because of this semantic mismatch between the denotation of the host noun and the classifier. If there is some pragmatic support to build the proper link between the host NP and the FQ, FL examples like (6.45) may become more acceptable.

6.3 Summary

As shown above, Japanese NQ constructions can be succinctly represented in the RRG framework by introducing two new features that are relevant to the cognitive process of quantification. There are no major differences in the clausal level LS among the three structures. Rather, the differences are found in the phrasal level LS based on the combination of the values of the two functional features. The acceptability of Pre-N is checked at the operator projection phase; specificity is checked for PreN-Spec and QNT operator for PreN-sg respectively. The acceptability of JX examples is checked at the elaborated phrasal LS level. It is based on whether the elements in a JX MP have an appropriate predicative relationship. The acceptability of FL examples is mainly checked at the linking. Only argument NPs are allowed to have a phrasal LS to be linked to the FQ and the linking can be influenced by the eligibility hierarchy and the pragmatic factors, adjacency and unpredictability.

Chapter 7 Conclusion

Japanese has rich variations of NQ constructions and each variation has different meanings and functions. In this thesis, I analyzed the functions of those NQ constructions focusing on the three major NQ constructions and discussed their inter-constructional relationships and the form-function association in them. The NQ constructions that I analyzed in this thesis are given in Table 7.1.

Table 7.1 Classification of NQ constructions in Japanese

	Types	Kim (1995)	This thesis
1	[Q-*no* N]	NP-internal, pre-nominal, attributive	Pre-nominal (Pre-N)
2	[QN]	NP-internal, pre-nominal, non-attributive	Num-N
			NQ-N
3	[N-*no* Q]	NP-internal, post-nominal, Attributive	Post-nominal NQ (Post-N)
4	[NQ]	NP-internal, post-nominal, non-attributive	Juxtaposed NQ (JX)
5	[N] X [Q]	Locally external, post-nominal	Floating NQ (FL)
6	[Q] X [N]	Locally external, pre-nominal	Fronted NQ (F-NQ)
7	$[..Q..]_{RelC}$ N	Endogenously NP-external	Relativised FL (Rel-Q)
8	[..N..]s [..Q..]s	S-external, post-sentential	Independent NQ (I-NQ)
9	Q-case	Pronominal	Independently case-marked NQ (NQ-c)

Similarities in form can be linked to similarities in function. The first two types in Table 7.1 are actually both 'pre-nominal' because they all have the word order 'Q-N' and the quantitative information precedes the host noun. In this word order, the preceding quantitative information denotes the quantitative attribute of the given set and plays a crucial role for referencing. The

difference in the connection between the NQ and the host noun reflects the degree of integration between the NQ and the host noun. The Genitive Pre-N is the most productive and least restricted in distribution while the other two are not very productive.

FL is also related to other NQ constructions. I-NQ is considered as a subtype of FL, in which the host NP is omitted due to its recoverability in the given context. F-NQ is another subtype of FL, in which the FQ is fronted. This word order variation causes a twist in the interpretation of the sentence with respect to the information structure. However, the basic functions of FL are intact and the quantitative information expressed by the NQ has to be interpreted as unpredictable. Rel-Q is also related to FL but it is regarded as a different construction from FL, instead of a subtype of FL. Unlike I-NQ and F-NQ, paraphrasing between Rel-Q and FL is often not acceptable since Q-float and relativization are functionally contradictory in some aspects. However, the denotation of the NQ in Rel-Q is interpreted as an unpredictable quantitative variable and this is quite similar to the denotation of the FQ in FL.

NQ can be used as a nominal and independently marked by a case-marker (Q-case). Since NQ always needs to be linked to its host noun for the semantic interpretation, there should always be source NQ constructions for Q-case. Q-case has some subtypes but their relationships to other NQ constructions are not straightforward. Some of them are more likely to be related to Pre-N and some of them to JX but their relationships are not very clear yet. This issue is a topic for further research on the NQ constructions.

Post-N (N-*no* Q) has two subtypes. When the Q is a lexical quantifier, which has a proportional meaning, the entire MP represents a partitive meaning. When the Q is a numeral quantifier (NQ), such a partitive reading is unlikely and the preceding noun is interpreted as an attributive modifier. These two readings share the same constructional template but they should

be treated as two different constructions since these two readings functionally have nothing in common. Instead the partitive reading of a Post-N with a lexical quantifier is functionally relevant to the NQ construction whose host noun is marked by *no uti/naka-no* 'inside of.' This expression is attached to the host noun when the quantifier is an NQ and expresses a partitive reading. It may be possible to assume that explicit marking of *no uti/naka-no* for a partitive reading is not necessary for lexical quantifiers since the meanings of the lexical quantifiers are proportional on their own. On the other hand, the non-partitive subtype of Post-N can be linked to Q-case since they become structurally equivalent when the nominal modifier of the Post-N MP is omitted. The inter-constructional relationships among the NQ constructions are summarized in Table 7.2. Functionally relevant constructions are surrounded by double lines.

Table 7.2: Inter-constructional relationships among the NQ constructions

	Types	Relationships with other NQ constructions	
1	**[Q-*no* N]**	**Pre-nominal (Pre-N)**	
2	[QN]	Num-N	functionally related to Pre-N
		NQ-N	functionally related to Pre-N
3	[N-*no* Q]	Post-nominal NQ (Post-N)	functionally related to Q-case unless Q is a lexical quantifier
4	**[NQ]**	**Juxtaposed NQ (JX)**	
5	**[N] X [Q]**	**Floating NQ (FL)**	
6	[Q] X [N]	Fronted NQ (F-NQ)	subtype of FL
7	$[..Q..]_{RelC}$ N	Relativised FL (Rel-Q)	functionally related to FL
8	[..N..]s [..Q..]s	Independent NQ (I-NQ)	subtype of FL
9	Q-case	Independently case-marked NQ (NQ-c)	functionally related to either Pre-N or JX

The distribution patterns show functional overlaps between some constructions, e.g., specific reading in PreN-spec and JX-spec, and also show complementary relationships between some constructions, e.g., FL and JX with respect to wh-questions with argument/adjunct host NPs. There are some relationship between form and function in the NQ constructions and the functional similarities are motivated by the similarities in their forms.

The form-function association is also found with respect to the word order between the NQ and the host noun. When the NQ follows the host noun, it can be interpreted as predication about the entities denoted by the preceding host noun while when the NQ precedes the host noun it can be interpreted as a crucial attribute for identifying the appropriate referent. This functional contrast is found between FL and JX on one hand and Pre-N on the other. Furthermore, the constituency of the host noun and the NQ is also relevant to this issue. When the NQ appears outside of the host NP as in FL, the quantitative information is not tightly integrated to the denotation of the host noun. This looseness in the syntactic integration can be interpreted that the set of entities denoted by the NP-FQ pair is newly created according to the quantity denoted by the NQ. Thus the external NQ is closely related to the creation of the set. On the other hand, when the NQ appears with its host noun in the same NP as in Pre-N and JX, it is interpreted that the set denoted by the host noun and NQ is already established regardless of the quantity denoted by the NQ. The creation of the set is backgrounded and the set is interpreted as an already-existing set, not as a brand-new set. The NQ denotes the quantitative attribute of the already-existing set. This difference in constituency is also reflected in the different readings that these two types have. The former may have a partitive reading while the latter only has an exhaustive reading.

Thus these association patterns between form and function in the NQ constructions are not arbitrary, but functionally motivated. Although those functions do not necessarily have to be realized in particular forms, since Q-float is cross-linguistically found in a quite a few languages, Q-float is a rather common means to realize that function. This research on the NQ constructions in Japanese is a case study to show that the form-function association is not random, but motivated to some extent, especially among semantically relevant constructions.

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