Niigata University Scholars Series 22 2022

ISBN:978-4-902140-22-4

NIIGATA UNIVERSITY, JAPAN

Syntactic Determinants of Quantifier Scope in Japanese and English

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AIZU Yaichi was born in Niigata in 1881.
He was Professor at Waseda University in Tokyo
from 1931 to 1945.
He was a scholar of oriental art history,
an unrivalled tanka poet and a calligrapher of
outstanding ability. He received the Yomiuri
Literary Prize for his tanka collection, *Aizu Yaichi Zen Kashu*. He died in 1956.

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Niigata University Scholars Series Vol. 22

Graduate School of Modern Society and Culture

Niigata University

Niigata, Japan

Published in 2022 by
Graduate School of Modern Society and Culture,
Niigata University
2 nocho 8050, Ikarashi, Nishiku Niigata-shi, 950-2181
Japan
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ISBN 978-4-902140-22-4

Printed by WITHUP CO., LTD
Niigata, Japan

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Preface

This book is a revision of my Ph.D. dissertation (Homma (2015b)) submitted to the University of Tsukuba in December, 2015. Although I have retained the main proposals of the dissertation, I have made a number of revisions and additions in most of the chapters. I have developed the idea on the scope of objects in the last chapter of the dissertation, and rewritten the material as Chapter 5, which constitutes part of the main proposals in this book. I have also revised the other chapters by adding the material presented in the works published after completing the dissertation (Homma (2018, 2019)). Earlier versions of some parts of the dissertation and this book were presented in Homma (2013a, 2013b, 2014a, 2014b, 2015a).

This book is concerned with the syntactic factors that serve as determinants of quantifier scope in Japanese and English. Specifically, it seeks an answer to the questions of how the difference of QP types contributes to the determination of QP scope, why syntactic operations such as scrambling affect QP scope, and why Japanese and English exhibit a difference with respect to QP scope.

Chapters 2 and 3 show that it is the presence of a quantifier in [Spec, DP] of a QP that allows the QP to take wide scope. Chapter 4 argues, assuming the framework of Miyagawa (2010), that the topic feature plays the key role as a determinant of QP scope in Japanese. We argue that the difference between the two types of QP with respect to scope is ascribed to the (un)availability of this feature for these QPs. Chapter 5 discusses the scope of object QPs and negation and proposes that a functional projection having to do with presuppositionality determines the scope of object QPs. Chapter 6 challenges the view that Japanese is a rigid scope language. We point out some particular syntactic environments that allow liberal scope in Japanese, and account for the liberality of scope in terms of the proposal in Chapter 4. Chapter 7 provides support to our analysis by considering the compatibility of the topic and the focus feature to the semantic property of the DPs that may bear these features, and by pointing out the parallelism between the locality of the overt movement by the topic feature and that of the QP scope. Chapter 8 extends the analysis to English cases and attempt to capture the previously observed facts in a principled way. We ascribe the rigid vs. liberal difference in QP scope between English and Japanese to the difference in the kinds of grammatical feature responsible for movement to [Spec, TP]. Chapter 9 discusses what we call Caseless *zen*-QPs and provides additional support to the analysis in Chapter 4.

I would like to take this opportunity to express a debt of deep gratitude to the following people, without whose assistance I could not have completed the dissertation or this book.

First of all, I am deeply grateful to the committee members of my dissertation, Nobuhiro Kaga, Yukio Hirose, Koichi Takezawa, and Masaharu Shimada, who have all been helpful in many ways. Nobuhiro Kaga, the committee chair, deserves special thanks. Although he may be identified as a generative linguist, his view on language is far broader than what a

generative linguist is supposed to have. I have benefited greatly from the conversations that I have had with him at various stages in my career, not to mention the detailed and helpful comments and the warm encouragement that he gave me while I was writing the dissertation. Yukio Hirose was my teacher when I was a graduate student. His view on language was always challenging and helped me look at semantic aspects of language in proper ways. The conversations that I have had with Koichi Takezawa have always been helpful in shaping the idea of what a research in generative syntax must be like. Masaharu Shimada kindly gave me detailed, helpful, and encouraging comments on the first draft of the dissertation.

I would also like to extend my sincere gratitude to my teachers at the University of Tsukuba and Niigata University: Minoru Nakau, Shosuke Haraguchi, Yukio Hirose, Satoshi Akiyama, Naoyo Furukawa, Tsuyoshi Oishi, Mamoru Saito, Takeo Saito, Takashi Shimaoka, Hidekazu Suzuki, and Ryuichi Washio. I am especially indebted to Minoru Nakau, who was my chief advisor. His lectures and the conversations that I had with him were always challenging and helped me think deeply about the proper ways in which the form and the meaning of language must be related to each other. I am indebted to the late Shosuke Haraguchi in many ways. He had been a source of wisdom not only about linguistics but also about a lot of aspects of life and society. Satoshi Akiyama was my chief advisor on my undergraduate work and has always been a reliable consultant in many ways in my life. The late Tsuyoshi Oishi guided me into the field of linguistics by patiently helping me learn to read linguistic articles. After I started working at Niigata University, he gave me a constant support in many ways, both at work and in my life.

I would also like to express my thanks to my seniors and friends at the University of Tsukuba: Yoshio Endo, Hiroaki Horiuchi, Jun Abe, Hiroto Onishi, Shinji Saito, Naohiro Takizawa, Toshifusa Oka, Takeru Honma, Daisuke Inagaki, Seiji Iwata, Masao Okazaki, Manabu Hashimoto, Mikio Hashimoto, Yuji Takano, Kazuhiko Tanaka, Masaharu Shimada, Shin'ichi Tanaka, Shin Watanabe, Keiko Miyagawa, Kazue Takeda, Hidehito Hoshi, Yukiko Kazumi, Yasumichi Hatanaka, Mikinari Matsuoka, Mika Okuyama, Roger Martin, Ronald Craig, Mihoko Zushi, Rie Takeuchi, Satoru Kobayakawa, Naoaki Wada, June-ko Matsui, Ken'ichiro Nogawa, Takashi Yoshida, Hideki Zamma, Hideki Tanaka, Masaru Kanetani, Yasuyuki Fukutomi, Makoto Kondo, Yoshio Otake, Kenji Arisaka, Takeshi Oguro, and Norio Nakamura. I benefited greatly from the discussions in the reading groups on syntax, semantics, and phonology. I am especially thankful to Yoshio Endo, with whom I share the interests in the generative syntactic approach to the syntax-semantics interface. I have always enjoyed discussions with him on such topics as quantifiers and aspects. I am also grateful to the following people from the English Linguistics course at Tsukuba: Shigeyuki Fujimoto, Katsunori Fukuyasu, Kozo Iwabe, Masahiro Kato, Norimi Kimura, Koji Ono, Masayuki Ota, Satoshi Ota, Masaki Sano, Shigeki Seki, and Shoichi Tanaka. I have benefited from the discussions at linguistic conferences and Tsukuba English Linguistics Mid-Summer Seminars.

Special thanks go to Takamichi Aki and Yoshihito Dobashi. They have always supported me by giving me helpful comments and helping me with subtle judgments on quantifier scope, not just by sharing wonderful times with me at the drinking bar in Terao. I also thank members of Niigata University Linguistic Circle: Fuyuki Ebata, Kazuo Fukuda, Aï Kijima, Masataka Mitsui, Kazuya Nishimaki, Tsuyoshi Oishi, George O'Neal, Hareo Takada, Tomokazu Takehisa, and Kumiko Yada.

I would also like to thank the following people for their support in my linguistic work at various stages in my career: Toshihiko Asaka, Teruhiko Fukaya, Naoko Hayase, C.-T. James Huang, Masayuki Ikeuchi, Toshiaki Inada, Maki Irie, Ai Kawazoe, Akira Kikuchi, Hideki Kishimoto, Kiyomi Kusumoto, Masumi Matsumoto, Shigeru Miyagawa, Yoichi Miyamoto, Shinsho Miyara, Yukiko Morimoto, Mitsue Motomura, Heizo Nakajima, Masaru Nakamura, Miyuki Noji, Nobuo Okada, Yukio Otsu, Hideshi Sato, Masako Tsuzuki, Ayumi Ueyama, Akiko Yoshimura, Noriaki Yusa, and Tomoko Watanabe.

Thanks also go to my (former) colleagues in the English Department of the Faculty of Education: Carmen Hannah, John Hessian, Shigeo Kato, Shinji Matsuzawa, Keiichi Narita, Ryoichi Okada, Jin'ichi Okamura, Paul Sevigny, Masao Takahashi, Nobuaki Takeda, Teruhiko Tsuji, Yoko Yamada, Sharon Vaipae, and Asaji Yoneyama. They have always given me helpful support in various ways.

Finally, I would like to thank my parents, my brothers, and my family. My late father Kakujiro, my late mother Masako, and my brothers Yoshiaki and Yoshinori always supported me when I was a student. My wife Takako has always supported me in various ways with her love and patience. I thank my children Haruka and Yusuke for their love and apologize to them for my coming home very late at night for the past several years!

Niigata, Japan

HOMMA, Shinsuke

November 2021

List of Abbreviations

Acc	accusative
Cl	classifier
Comp	complementizer
Cont	contrastive
Cop	copula
Dat	dative
Foc	focus
Gen	genitive
Infl	inflection
Mod	modal
Neg	negation
Nom	nominative
Pass	passive
Past	past
Pl	plural
Pol	polite
Pres	present, presupposition
Q	question
Top	topic
1sg	first person singular
3sg	third person singular

Chapter 1
Introduction

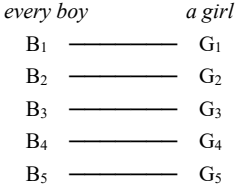
1.1 Quantifier Scope

This is a study on the linguistic phenomenon called *quantifier scope* in natural language. In natural language, quantifiers such as *every* and *san-nin* 'three-Cl' denote a particular amount or number of objects. In addition, they can also affect the interpretation of another quantificational expression.

(1) *Every boy* met *a girl*.

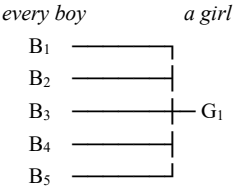
In (1), the use of the quantifier *every* conveys that the boys that the speaker is referring to are from a particular set of boys and that the boys referred to exhaust that set: there are no boys left unmentioned in the same set. The use of *every* in (1) also affects the interpretation of *a girl* in the object position. While *a girl* is grammatically singular, the number of girls mentioned in (1) may actually be larger than one, and may match the number of boys introduced by the subject *every boy*. Thus if the set of boys associated with *every boy* contains five boys, the girls mentioned in (1) may be distributed to each member of the boys in the way illustrated in (2):

(2)



If (1) is intended to describe the situation in (2), we say that the quantified DP (henceforth, QP) *every boy* takes *wide scope* over the other QP *a girl*. Sentence (1) may also be interpreted to describe the following situation:

(3)



In this situation the number of girls does not match that of boys. Rather, the situation involves

only one girl who met every boy. In other words, *every boy* does not affect the interpretation of *a girl* in the way it does in (2). In this case we say that *every boy* takes *narrow scope* under *a girl*. Moreover, since (1) has the two readings just illustrated, we say that sentence (1) is *ambiguous* with respect to quantifier scope.

1.2 Why do Syntacticians Study Quantifier Scope?

While the example in (1) is ambiguous in the sense described above, the ambiguity of this sort is not always present (May (1977), among others):

(4) *Some boy* believes that John kissed *every girl*.
[unambiguous: ∃ > ∀, *∀ > ∃]

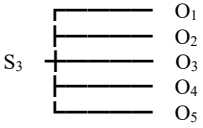
This example is not understood to be ambiguous in the relevant sense. It can be understood to describe a situation involving only one particular boy who believes John to have kissed every girl, but it cannot be taken to mean that each of the girls is such that she is believed by a boy to have been kissed by John. This fact suggests that while quantifier scope itself may be characterized as a semantic phenomenon, the difference between (1) and (4) with respect to the interpretation in the above sense tells us that the interpretive possibilities of sentences involving quantifiers can be affected by syntactic factors. In (4) the two QPs are in two distinct clauses while (1) involves two QPs in a single clause. Facts like this lead us to say that it is one of the important tasks in linguistics to discover what syntactic factors play essential roles as determinants of quantifier scope.

While the English example in (1) is "liberal" with respect to QP scope in the sense that it allows either of the two scope interpretations, other languages exhibit "rigid" scope in that a sentence corresponding to (1) only allows one of the two potential interpretations. It has been widely observed that a Japanese simple sentence containing two QPs does not display the ambiguity (Kuroda (1969/70), Hoji (1985), among others).

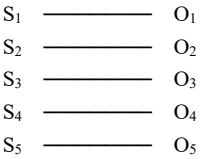
(5) *Dareka-ga* *daremo-o* mi-ta
someone-Nom everyone-Acc see-Past
'Someone saw everyone.'
[unambiguous: ∃ > ∀, *∀ > ∃]

Although the English sentence containing two QPs in (1) is ambiguous, the Japanese counterpart in (5) allows only one of the two interpretations. The subject QP *dareka-ga* in (5) may take wide scope over the object *daremo-o*, but the inverse scope order is impossible. Sentence (5) may be taken to describe the situation in (6a), but it cannot be taken to describe the one in (6b):

(6) a. *dareka-ga* *daremo-o*
‘someone’ ‘everyone’



b. *dareka-ga* *daremo-o*
‘someone’ ‘everyone’



While Japanese exhibits rigidity of scope interpretation in the way just described, the scrambled counterpart of (5) does display the ambiguity:

(7) *Daremo-o*$_i$ *dareka-ga* e_i mita
everyone-Acc someone-Nom see-Past
Lit. ‘Everyone, someone saw.’
[ambiguous: $\exists > \forall$, $\forall > \exists$]

In (7), either of the two QPs may take scope over the other, and therefore the sentence may describe either of the two situations in (6).

Thus these facts pose two important questions below for the study of syntax:

(8) a. Why does English display liberal scope while Japanese exhibits rigid scope?
b. Why does scrambling affect QP scope in the way it does in (7)?

The fact in (7) justifies syntactic approaches to quantifier scope since in (7) the interpretive possibility with respect to QP scope is affected by a syntactic operation, namely scrambling. Furthermore, an analysis of the cross-linguistic variation with respect to quantifier scope, the issue addressed as question (8a), must be sought by a syntactic approach to quantifier scope. The rationale for taking this approach to interpretive aspects of language is summarized in the following statement in Higginbotham (1985), which has been a widely held view among generative linguists.[1]

[1] See also Aoun and Li (1989, 1993), who state that “the LF interpretive component is not the locus of

> The strongest theory of the relation between syntactic structure and semantic interpretation is that interpretive principles are universal—that is, that human languages cannot differ in the ways that semantic principles apply to syntactic objects with their specific formal properties. The universality of LF-representations should be seen as a working hypothesis that is advanced about the child's contribution to knowledge of meaning. The differences between languages that do not flow from sheer lexical idiosyncrasy are then to be seen as differences in the nature of formal grammatical conditions, not semantic rules.
>
> This point of view may be put in terms familiar from Chomsky (1980). The principles of language variation, or *parameters* in this terminology, should have the property that the child can find evidence in the linguistic environment that settles the question of which formal structures are admissible, expressed in terms of the values of these parameters. To speak and understand the language, the child must know about meaning, including both the meanings of words and the principles of interpretation of syntactic structures. Obviously, words must be learned. Suppose that we conjecture that lexical learning is all that is required to distinguish one language from another. Then the principles of interpretation of structures cannot differ from language to language, and the parameters of meaning are confined to the meanings of words.
>
> If our conjecture is correct, then there are no language-particular rules of interpretation, apart from the lexicon. In this case, questions of scope, both within a single language and across languages, will be answered in just the way the questions raised in earlier sections were answered; in particular, scopal ambiguity will be structural, and nonambiguity will have a syntactic explanation. ...
>
> (Higginbotham (1985: 580-581))

That is, for a child acquiring Japanese, for example, there is no clue in the interpretation of sentence (5) that would inform the child of the nonambiguity of (5). Likewise, no clue in the interpretation itself of sentence (4) would inform a child acquiring English that (4) is not allowed to have two different readings. All that is accessible to children acquiring either of these languages comprises words and structures of sentences that they hear. Given this view on the semantic interpretation of sentences in natural language, it is justifiable that one studies quantifier scope within a framework of a syntactic theory, in particular for seeking an explanation of variations of scope property among different constructions in a single language and among different languages.

In addition to the study of the phenomena discussed above which call for syntactic

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language variation since the language learner does not have direct access to this component (Aoun and Li (1989: 169-170))."

analyses, it is also an important task for the researchers in syntax to ask whether a generalization stated in semantic terms could also be captured by syntactic terms. One such study has been conducted by Diesing (1990, 1992).[2] Diesing is concerned with the different ways in which semantically different types of QPs contribute to the scope interpretation of sentences. Consider, for example:

(9) *Every cellist* played *some variations*.
[ambiguous: ∃ > ∀, ∀ > ∃] (Diesing (1992: 65))

Diesing (1992) observes that while (9) is ambiguous in the relevant sense, the wide scope interpretation of the object QP *some variations* is possible only under one of the two readings of the quantifier *some*. *Some variations* may take wide scope only under the reading where *some* denotes a certain proportion, or a subset, of the objects in a set of objects denoted by *variations*. On the other reading of *some*, in which it denotes a certain number of objects, the object *some variations* cannot take wide scope.

This observation may lead one to a generalization to the effect that only QPs with a particular type of meaning may take wide scope. Though this generalization is stated in semantic terms, one may take a syntactic approach to an explanation of this generalization, as in Diesing (1990, 1992) and Homma et al. (1992), who proposed that only QPs with a particular type of meaning may undergo a syntactic rule that gives wide scope to the QPs.

Since this proposal still adopts one *semantic* condition in the determination of an application of the relevant *syntactic* rule, one may go one step further and ask whether this semantic aspect of QPs may be recaptured in syntactic terms. If this is possible, one may complete a syntactic analysis of quantifier scope that only relies on syntactic notions.

1.3 Goals of This Work

This work is on the syntax of quantifier scope in Japanese and English, and is concerned with what syntactic factors serve as determinants of quantifier scope. Specifically, we seek answers to the following questions:

(10) a. How does the difference of QP types contribute to the determination of QP scope?
b. Why do syntactic operations such as scrambling affect QP scope?
c. Why do Japanese and English exhibit a difference with respect to QP scope?

These questions are not necessarily new ones. (10a) has been addressed in such works as Diesing (1990, 1992) and Homma et al. (1992). The effect of scrambling on QP scope has

[2] See also Homma et al. (1992) for essentially the same analysis of the scope property of floated quantifiers in Japanese.

been noted by a number of linguists (Kuroda (1969/70), Hoji (1985), among others). Moreover, questions about the source of cross-linguistic difference with respect to scope, such as our question in (10c), have been addressed by such linguists as Huang (1982) and Aoun and Li (1989, 1993).

However, since the questions in (10) have been addressed rather separately, we may go one step further to ask how these questions are interrelated to each other. This work, then, brings these issues together on one single worktable. It attempts to show how the structure of QPs contributes to the determination of QP scope, as well as the way in which the clause structure and syntactic operations affect the scope of QPs. Furthermore, we discuss how the internal structure of QPs and the syntactic operations are interrelated. Note that we are not attempting to argue that every semantic aspect of language can be dealt with in syntactic terms. Rather, we are trying to reveal those aspects of semantic interpretation that syntactic structure/operation has important contribution to.

In Chapter 2, we discuss the question of whether QP scope is determined by the internal structure or a particular semantic property of QPs. After reviewing some previous works on this issue, we show that it is the presence of a quantifier in [Spec, DP] of a QP that allows the QP to take wide scope. Moreover, we also point out that the scope of post-subject object QPs with respect to negation is determined in a way somewhat different from that of scrambled pre-subject objects.

Chapter 3 defends the claim made in Chapter 2 that it is the syntactic structure of a QP, not its semantic property of presuppositionality, that determines the scope of a QP. We do this by carefully examining the correlation between the syntactic position of a quantifier inside a QP and the availability of the presuppositional interpretation of the QP containing the quantifier.

In Chapter 4, we turn to an account of the scope of the two types of QP discussed in the previous chapters in terms of the syntactic factors external to these QPs. Assuming the framework of Miyagawa (2010), we argue that the topic feature, which drives movement of the subject and the scrambled object to [Spec, TP] in Japanese, plays the key role as a determinant of QP scope in Japanese. Then we argue that the difference between the two types of QP with respect to scope is ascribed to the (un)availability of the topic feature for these QPs.

Chapter 5 discusses the scope of object QPs and negation. We point out that, in contrast to a scrambled object QP in the pre-subject position, the scope of a post-subject object QP with respect to negation is determined by its presuppositionality. In order to account for this behavior of a post-subject object QP, we propose a functional projection midway between the subject and VP, which exclusively licenses presuppositional object QPs.

Chapter 6 challenges the view that Japanese is a rigid scope language. We point out that some particular syntactic environments allow liberal scope in Japanese, and argue that it is the absence of the topic feature that permits two QPs to take liberal scope in Japanese.

Chapter 7 provides support to the analysis developed in the preceding chapters by considering the compatibility of the topic and the focus feature to the semantic property of the DPs that may bear these features. We also support our analysis in terms of the covert focus movement by pointing out the parallelism between the locality of the overt movement by the topic feature and that of the QP scope determined by the covert focus movement.

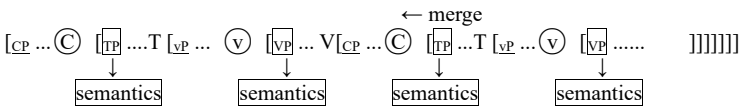
In Chapter 8 we extend our analysis to English cases and attempt to capture the previously observed facts in a principled way. Crucially we argue that the liberality of scope in English comes from the fact that the movement of the subject to [Spec, TP] is driven by the Φ-feature in English, as opposed to the topic feature that plays this role in Japanese. Thus the rigid vs. liberal difference as noted above between English and Japanese is ascribed to the difference between these languages in the kinds of grammatical feature responsible for movement of the subject to [Spec, TP].

Chapter 9 discusses what we call Caseless *zen*-QPs. A discussion of their syntactic property provides additional support to our analysis in Chapter 4.

1.4 Framework

We adopt the version of the theoretical framework of the Minimalist Program known as the *phase* theory in Chomsky (2001) and subsequent works. In the phase theory, the structure of a sentence is built by way of the operation *merge*. When the structure reaches the point called *phase*, that structure is *transferred* to the semantic component to be assigned a particular interpretation. We assume that CP, vP and DP are phases, and that what is sent to semantics is the complement of each phase head. Thus, the structures to be sent to semantics are illustrated as follows:

(11) Computation of syntactic structure in the phase theory



If we assume CP, vP, and DP to be phases, the structures to be transferred to semantics are TP, VP and NP, since they are the complement of the phase head C, v, and D, respectively.

We also assume that the derivation of sentence structure involves only one single level of representation, as illustrated in (11). What is crucial is the assumption that the level of Logical Form (LF) is not a separate level of syntactic derivation. The movement that has been assumed to occur at LF in the pre-minimalist frameworks (the Government-and-Binding theory and the Principles-and-Parameters theory) takes the form of "the pronunciation of the lower copy" (Bobalijk (1995) among others). That is, overt and covert movements are essentially not distinguished and the only distinction between them is the site of the deletion

of the phonetic feature. If the phonetic feature of the higher copy of a constituent is retained, it results in an overt movement. On the other hand, if it is the phonetic feature of the lower copy that is retained, it results in a covert movement. These two derivations are illustrated below:

(12) a. *The phonetic feature retained on the higher copy (the pronunciation of the higher copy):*
[... DP_i ... [... ~~DP_i~~ ...]]
{π, F} {~~π~~, ~~F~~} => overt movement
(π = the phonetic feature, F = a grammatical feature)

b. *The phonetic feature retained on the lower copy (the pronunciation of the lower copy):*
[... ~~DP_i~~ ... [... DP_i ...]]
{~~π~~, F} {π, ~~F~~} => covert movement

In the following chapters, however, we employ the notation of feature movement (Chomsky (1995)), simply for ease of exposition, alongside with the traditional notation for overt movement where movement leaves a trace. Thus the derivations in (12a) and (12b) are represented as (13a) and (13b), respectively, in what follows.

(13) a. Overt movement:
[... DP_i ... [... t_i ...]]

b. Covert movement (movement of a feature):
[... $[F]_i$ ... [... DP_i ...]]

1.5 Some Terminology for Types of QPs and Quantifiers

In this thesis we employ the following terms to refer to types and interpretations of QPs and quantifiers. Firstly, we use the terms *partitive* and *cardinal* to refer to the *meaning of a quantifier*. A partitive interpretation of a quantifier is one where the quantifier expresses a proportion of the referents among a particular set of objects. Thus we say that the quantifier *many* in *many students* has a partitive reading if it expresses a certain proportion of students in the set of students and that the proportion is quite large. On the other hand, a cardinal reading of a quantifier is one where the quantifier expresses a certain number of objects that the head noun refers to. Thus in the cardinal interpretation of *many* in *many students*, this quantifier expresses that the number of the students referred to is large.

Secondly, we use the terms *strong* and *weak* to refer to *types of quantifiers*. Strong quantifiers are those quantifiers that have only a partitive reading. This group of quantifiers includes such quantifiers as *every*, *most*, *subete* 'every' and *hotondo* 'most.' On the other hand,

weak quantifiers are those quantifiers that may have both a partitive and a cardinal reading, or have only a cardinal reading. These quantifiers include *many*, *some*, *two*, *three*, *hutari* 'two-Cl' and *san-nin* 'three-Cl.'

Thirdly, we use still another pair of terms in order to refer to the *meaning of QPs*. We say that a QP is *presuppositional* when the QP refers to a subset of a particular set of objects whose existence in the discourse that the speaker presupposes. Thus in the presuppositional reading of *many students*, this QP refers to a subset of students in the particular group of students that is assumed to exist in the discourse. On the other hand, we say that a QP is *nonpresuppositional* when the referents of the QP have been introduced into the discourse for the first time.[3]

Regarding the employment of these terms, one might say that the use of the latter two pairs *partitive/cardinal* and *presuppositional/nonpresuppositional* are redundant since the partitive meaning of a quantifier entails the presuppositional reading of the QP containing it, and that the nonpresuppositional reading of a QP is based on the cardinal reading of the quantifier contained in it. However, in noun phrases such as *the/my many students*, the quantifier *many* is taken to denote the number, not the proportion, of students, whereas the noun phrase as a whole refers to the students from the preceding discourse. Thus in this case the quantifier *many* is cardinal but the DP containing *many* is presuppositional. This presuppositional reading of *the/my many students* may be said to come from the presence of the definite article *the* or the possessive pronoun *my*. Thus, we employ these two different sets of terms in order to distinguish between the meaning of a quantifier and that of the QP containing the quantifier.

[3] The terms *presuppositional* and *nonpresuppositional* have been originally employed in Diesing (1990, 1992). The relevant readings of QPs have also been called *quantificational* and *cardinal* in Milsark (1974, 1977) and *specific* and *nonspecific* in Enç (1991). Partee (1989) and Muromatsu (1998) point out a third reading in addition to the two dealt with in this thesis, but I do not discuss the third reading in this paper, however.

Chapter 2
Quantifier Scope and DP Structure

2.1 Introduction

This chapter examines the scope property of two types of QP in (1a-b) and bare noun phrases (henceforth, B-NPs) as exemplified in (1c), and shows how the scope property of these types of DP can be accounted for in terms of their syntactic structure.

(1) a. Watasi-wa *san-dai-no kuruma-o* mokugekisi-ta
I-Top 3-Cl-Gen car-Acc witness-Past
'I witnessed three cars.'
b. Watasi-wa *kuruma-o san-dai* mokugekisi-ta
I-Top car-Acc 3-Cl witness-Past
'I witnessed three cars.'
c. Watasi-wa *kuruma-o* mokugekisi-ta
I-Top car-Acc witness-Past
'I witnessed cars/a car.'

The object DP in (1a) consists of a head noun *kuruma* 'car' preceded by a quantifier *san-dai-no*. We call this type a Q-NP. The QP in (1b) has a quantifier to the right of the head noun and the Case-particle. Since the quantifier in this case has often been regarded as "floating" from its host noun phrase, it has been called a *floating quantifier* (henceforth, an FQ). Accordingly, we call the sequence *kuruma-o san-dai* an NP-FQ. The object DP in (1c) lacks a quantifier and thus is called a B-NP (Hasegawa (1991, 1993), Homma et al. (1992)).

In Section 2.2 we observe the difference in the scope property of each of the above three types of DP. Section 2.3 reviews previous accounts of the observed scope properties and points out their problems. In Section 2.4 we propose a generalization on the relation between the scope property of QPs/B-NPs and their internal syntactic structure. Specifically, we show that it is the presence of a quantifier in the topmost Spec position in DP, [Spec, DP], that may give rise to the wide scope of that quantificational DP.

2.2 Types of QP and Their Scope Property: Some Facts

2.2.1 QPs Favoring Narrow Scope

As observed widely in the past literature on quantifier scope, a simple sentence with two clause-mate QPs yields an interpretive pattern shown in (2) and (3) (May (1977, 1985), Kuroda (1969/70), Hoji (1985) among others):[1]

[1] See also Homma (2004) for related discussions.

(2) *Someone* loves *everyone*.
[ambiguous: ∃ > ∀, ∀ > ∃]

(3) a. *Dareka-ga daremo-o* mi-ta
someone-Nom everyone-Acc see-Past
'Someone saw everyone.'
[unambiguous: ∃ > ∀, *∀ > ∃]
b. *Daremo-o*$_i$ *dareka-ga* t_i mi-ta
everyone-Acc someone-Nom see-Past
Lit. 'Everyone, someone saw.'
[ambiguous: ∃ > ∀, ∀ > ∃]

As shown in (2), a simple sentence with two clause-mate QPs in English allows either QP to take scope over the other. In Japanese, this ambiguity of scope relation is yielded by the scrambled order QP-*o* QP-*ga*, as in (3b), although QPs in the canonical order QP-*ga* QP-*o* do not yield this ambiguity.

However, it is not always the case that a scrambled object QP takes wide scope over a subject QP. As observed in Hasegawa (1991, 1993) and Homma et al. (1992), an NP-FQ cannot take wide scope over another QP.[2] Consider:

(4) a. *Huta-tu-no booru-o* daremo-ga ket-ta.
2-Cl-Gen ball-Acc everyone-Nom kick-Past
'Everyone kicked two balls.' [ambiguous: ∀ > 2, 2 > ∀]
b. *Booru-o huta-tu* daremo-ga ket-ta.
ball-Acc 2-Cl everyone-Nom kick-Past
'Everyone kicked two balls.' [unambiguous: ∀ > 2, *2 > ∀]

As (4b) shows, the NP-FQ *booru-o huta-tu* cannot take wide scope over the other QP in contrast to the Q-NP *huta-tu-no booru-o* in (4a). (4a) may have the interpretation to the effect that there are two balls that everyone kicked, but (4b) lacks this reading and only has the reading in which each of the people kicked a different set of two balls.

It is also impossible for an NP-FQ to take wide scope over an opacity-inducing predicate such as *–tai* or *-tagaru* 'want' (Homma et al. (1992)):

(5) a. Hanako-ga [*san-nin-no otoko-o* syootaisi]-tagatte i-ru
Hanako-Nom 3-Cl-Gen man-Acc invite-want be-Pres
'Hanako wants to invite three men.'

[2] See also Watanabe (2000), Aoyagi (2010), and Shibata (2015) for observations to the same effect.

b. Hanako-ga [*otoko-o san-nin* syootaisi]-tagatte i-ru
Hanako-Nom man-Acc three-Cl invite-want be-Pres
'Hanako wants to invite three men.'

As Homma et al. (1992) point out, the NP-FQ *otoko-o san-nin* in (5b) may only have the opaque reading in (6b), the reading in which the NP-FQ takes narrow scope under the matrix predicate *–tagaru* 'want,' while the Q-NP in (5a) may also have the transparent reading in (6a), where the QP takes wide scope over *–tagaru*, as well as the opaque (narrow scope) reading in (6b). In other words, (6a) may be taken to assert the existence of three men in the actual world, whereas (6b) may only be taken to assert the existence of three men in the mental world of Hanako.

(6) a. [∃*x*: *x* = 3 & men(*x*)] (Hanako wants (*PRO* to invite *x*))
b. Hanako wants ([∃*x*: *x* = 3 & men(*x*)] (*PRO* to invite x))

This difference in scope between (5a) and (5b) is reflected in the possibility of taking these two QPs as an antecedent of a pronoun (Homma et al. (1992)). Suppose each of the sentences in (5) is followed by the sentence in (7).

(7) *Karera/soitura-wa* minna gakusei-desu
they/the guys-Top all student-is
'They are all students.'

While it is possible for the Q-NP *san-nin-no otoko-o* in (5a) to be the antecedent of the pronoun *karera/soitura* in (7), the NP-FQ in (5b) cannot. This is so because, while the Q-NP in (5a) may refer to a specific set of individuals in the real world by taking wide scope over the opacity-inducing predicate *-tagaru*, the NP-FQ in (5b) may only take narrow scope under *-tagaru* and refer to individuals in the possible world (in this case, Hanako's mental world).

Turning to B-NPs, we observe that they exhibit the same scope patterns as NP-FQs: B-NPs, as well as NP-FQs, can only take narrow scope with respect to other scope-taking elements (Homma et al. (1992), Hasegawa (1993)). Consider:

(8) a. *Booru-o* daremo-ga ket-ta
ball-Acc everyone-Nom kick-Past
'Everyone kicked balls.'
[unambiguous: ∀ > ∃, *∃ > ∀]
b. *Ikutuka-no booru-o* daremo-ga ket-ta
some-Gen ball-Acc everyone-Nom kick-Past
'Everyone kicked some balls.'

[ambiguous: ∀ > ∃, ∃ > ∀]

The B-NP *booru-o* in (8a) is understood to have an existential interpretation in such a way that the overt existential quantifier *ikutuka-no* in (8b) does, but differs from the latter in that the B-NP cannot take wide scope over the subject universal QP *daremo-ga* 'everyone,' whereas the Q-NP *ikutuka-no booru-o* can.[3]

Moreover, a B-NP cannot take scope over an opacity-inducing predicate:

(9) Hanako-wa *gakusei-o* syootaisi-tagatte i-ru
Hanako-Top student-Acc invite-want be-Pres
'Hanako wants to invite students.' (Homma et al. (1992))

The only scope reading for the B-NP *gakusei-o* in (9) is the narrow scope reading represented as (10b).

(10) a. [∃*x*: student(*x*)] (Hanako wants (*PRO* to invite *x*))
b. Hanako wants ([∃*x*: student(*x*)] (*PRO* to invite *x*))

The narrow scope property of B-NPs in Japanese that we have observed is shared by bare plural NPs (henceforth, BP-NPs), a kind of B-NP, in English.[4] Firstly, a BP-NP takes only narrow scope under a QP whereas a QP with an overt quantifier takes either narrow or wide scope in the same environment:

(11) a. *Everyone read some books about giraffes.*
[ambiguous: ∀ > ∃, ∃ > ∀]
b. *Everyone* read *books about giraffes*.
[unambiguous: ∀ > ∃, *∃ > ∀] (Carlson (1977: 20))

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[3] In addition to existential reading, B-NPs in Japanese may also be understood to have a definite reading. Thus the B-NP *booru-o* may have a definite reading under an appropriate context such as the following.

(i) Booru-ga korogat-te ki-ta. Soositara, syoonen-ga *booru-o* oikake-te ki-ta
ball-Nom rolling come-Past then boy-Nom ball-Acc chasing come-Past
'A ball came rolling. Then a boy came chasing the ball.'

The second occurrence of the B-NP *booru* refers to back to the ball denoted by its first occurrence. This means that its second occurrence is interpreted as the same way as the definite NP *the* + N in English.

In this thesis we only deal only with the existential reading of B-NPs when we discuss their scope. For the definite reading of B-NPs, we briefly discuss the syntactic origin of it in Chapter 4.

[4] The other kind of English B-NP is bare mass NPs, but we do not discuss them in this thesis.

Secondly, a BP-NP cannot take scope over an opacity-inducing predicate such as *want*. Observe the following examples:

(12) a. Miles wants to meet *some policemen*.
[ambiguous: ∃ > *want*, *want* > ∃]
b. Miles wants to meet *policemen*.
[unambiguous: *∃ > *want*, *want* > ∃] (Carlson (1977: 16)

Sentence (12a) is understood to have either of the two readings below:

(13) a. [∃*x*: *x* = policemen] (Miles wants (*PRO* to meet *x*))
b. Miles wants ([∃*x*: *x* = policemen] (*PRO* to meet *x*))

On one reading, exhibited in (13a), the QP *some policemen* takes wide scope over the verb *want* and the sentence is interpreted to assert the existence of policemen in the actual world. On the other reading, represented by (13b), *some policemen* takes narrow scope under *want* and thus the speaker is not committed to the existence of any policemen who Miles wants to meet, but merely takes policemen to exist in the belief world of Miles. Sentence (12b), on the other hand, has only the narrow scope reading of the object *policemen*, which is representend in (13b). It cannot assert the actual existence of policemen that Miles wants to meet.

2.2.2 Scope of Object QPs and Negation

Thus far we have observed that NP-FQs and B-NPs favor narrow scope: they cannot take wide scope where Q-NPs can. This property of favoring narrow scope is also true of B-NPs with respect to negation. Consider first that a Q-NP in the object position may take either wide or narrow scope with respect to negation:

(14) a. Taroo-ga *san-nin-izyoo-no gakusei-o* home-*nakat*-ta
Taro-Nom 3-Cl-or.more-Gen student-Acc praise-Neg-Past
'Taro did not praise three or more students.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]
b. Keisatu-ga *san-nin-izyoo-no tooboohan-o* taihosi-*nakat*-ta
police-Nom 3-Cl-or.more-Gen fugitive-Acc arrest-Neg-Past
'The police did not arrest three or more fugitive criminals.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]

Sentence (14a), for example, may refer to the situation where there are a certain number of students who Taro did not praise and that number is three or larger. This is the reading where the object QP takes wide scope over negation. The sentence also has the reading where the

object QP takes narrow scope, in which case (14a) is true if the number of the students that Taro praised is three or smaller.

This ambiguity is not observed with object B-NPs. Firstly, the object B-NPs in (15) may have an existential reading:

(15) a. Taroo-ga *gakusei-o* home-ta
Taro-Nom student-Acc praise-Past
'Taro praised students.'
b. Keisatu-ga *tooboohan-o* taihosi-ta
police-Nom fugitive-Acc arrest-Past
'The police arrested fugitive criminals.'

Secondly, consider the following examples:

(16) a. Taroo-ga *gakusei-o* home-*nakat*-ta
Taro-Nom student-Acc praise-Neg-Past
'Taro did not praise students.'
[unambiguous: *∃ > Neg, Neg > ∃]
b. Keisatu-ga *tooboohan-o* taihosi-*nakat*-ta
police-Nom fugitive-Acc arrest-Neg-Past
'The police did not arrest fugitive criminals.'
[unambiguous: *∃ > Neg, Neg > ∃]

In contrast to the object Q-NPs in (14), the B-NPs in (16) cannot take wide scope over negation. While (16a), for example, may refer to the situation where Taro did not praise any students (the Neg > ∃ reading), it cannot be true in the situation where there are some students that Taro did not praise (the ∃ > Neg reading).

We may expect that NP-FQs behave in the same fashion as B-NPs in the above environment, since NP-FQs and B-NPs share the property of favoring narrow scope. This is not the case, however, since NP-FQs can behave on a par with Q-NPs, not with B-NPs, with respect to scope-taking over/under negation. Consider:

(17) a. Taroo-ga *gakusei-o san-nin-izyoo* home-*nakat*-ta
Taro-Nom student-Acc 3-Cl-or.more praise-Neg-Past
'Taro did not praise three or more students.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]
b. Keisatu-ga *tooboohan-o san-nin-izyoo* taihosi-*nakat*-ta
police-Nom fugitive-Acc 3-Cl-or.more arrest-Neg-Past
'The police did not arrest three or more fugitive criminals.'

[ambiguous: 3 or more > Neg, Neg > 3 or more]

The NP-FQs in (17) can take wide scope over negation, on a par with the Q-NPs in (14). Thus these sentences are true in the same situations that the sentences in (14) are.

If so, then the scope-taking behavior of the NP-FQs in (17) poses the following question: why can NP-FQs take wide scope over negation, while they can only take narrow scope under the subject QP? We turn to an account of this fact in Chapter 5.

2.3 Previous Analyses on the Scope Property of NP-FQs and B-NPs

The observed difference in the scope-taking property of Q-NPs on one hand and NP-FQs and B-NPs on the other has drawn attention of some linguists. In this section we discuss the analyses by Diesing (1990, 1992) and Homma et al. (1992), who pay attention to the semantic properties of these types of DP and their relevance to their scope property. We also review the analysis of Hasegawa (1991, 1993), who proposes that the narrow scope property of NP-FQs is due to their syntactic property, rather than their semantics.

2.3.1 Diesing (1990, 1992)

Diesing pursues an explanation of the scope property of QPs in terms of the QP's "presuppositionality." The presuppositional interpretation of a QP is one in which the QP refers to a subset of the set of the referents previously mentioned in the preceding discourse, whereas in the nonpresuppositional interpretation of a QP the referents of the QP are not among a set of the referents that are previously mentioned, but are introduced into the discourse for the first time. In (18) the QP *many students* can have a presuppositional reading in that it can refer to a subset of the set of students that the speaker assumes to exist in the preceding discourse. This QP can also have a nonpresuppositional reading, in which case it refers to the students that are mentioned for the first time.

(18) I saw *many students*.

While quantifiers such as *many* and *some* are in principle ambiguous between these two readings, there are quantifiers that are not. QPs with a universal quantifier such as *every* have only a presuppositional interpretation since they necessarily range over a set of referents that are assumed to exist in the preceding discourse. On the other hand, B-NPs in their existential interpretation are necessarily nonpresuppositional in contrast to QPs with an overt existential quantifier *some*, which may have either a presuppositional or a nonpresuppositional reading (Milsark (1974, 1977), Carlson (1977), Diesing (1990, 1992)):

(19) a. John met *students*.
b. John met *some students*.

(19a) can be paraphrased as (19b) in the sense that it asserts the existence of students that John met and the number of the students he met is not very large, but the object B-NP *students* cannot refer to a subset of the set of students that are presupposed to exist. Indeed, in the following discourse, the B-NP *boys* in (20a) cannot refer to a subset of the set of children established by *several children* in the preceding sentence, while the QP with an overt existential quantifier *some boys* may refer to a subset of this set of children.

(20) *Several children* entered the museum.
  a. I saw *boys* at the movies.
  b. I saw *some boys* at the movies. (Enç (1991), Homma et al. (1992))

Diesing proposes that presuppositional QPs, but not nonpresuppositional QPs, undergo Quantifier Raising (May (1977, 1985)) at LF so that a presuppositional QP may be adjoined to IP at LF, a position higher than the rest of the clause containing it, while a nonpresuppositional QP remains in VP at LF. She also proposes the Mapping Hypothesis, which dictates that QPs outside VP be mapped onto the Operator and the Restrictive Clause and that those within VP be mapped onto the Nuclear Scope. This is illustrated as (21) and (22):

(21) *Presuppositional QPs:*
  S-Structure: John saw *every student*.
  LF: $[_{IP}$ [every student]$_i$ $[_{IP}$ John $[_{VP}$ saw t_i]]]
  SR:[5] [$\forall x$: x = a student] (saw (John, x))
  Operator, Restrictive Clause *Nuclear Scope*

(22) *Nonpresuppositional QPs*:
  S-Structure: John saw *some students*.
  LF: $[_{IP}$ John $[_{VP}$ saw [some students]]]
  SR: $\exists x$ (saw (John, x) & students (x))
  Nuclear Scope

The gist of Diesing's (1990, 1992) proposal is that since a presuppositional QP is moved by QR to a higher position than that of a nonpresuppositional QP, the former necessarily takes wider scope than the latter. Thus a QP with a quantifier such as *some* which is ambiguous between the two interpretations in question cannot take wide scope when it has a nonpresuppositional reading. Consider:

[5] SR = Semantic Representation

(23) *Every cellist* played *some variations*.
[ambiguous: ∀ > ∃, ∃ > ∀] (Diesing (1992: 65))

Diesing observes that (23) is in fact ambiguous in three ways. The first reading is represented by ∀ > ∃, where the object QP *some variations* is interpreted as a presuppositional QP. On this reading the referents of *some variations* differ from individual to individual in the set of people referred to by *everyone*, but these referents are chosen from a set of variations from the preceding discourse. The second reading, also represented as ∀ > ∃, is the reading where *some variations* is interpreted as nonpresuppositional. In this case the referents of *some variations* are introduced into the discourse for the first time, not from the list of variations from the preceding discourse. The third reading is represented by the inverse scope order ∃ > ∀ where *some variations* has a presuppositional interpretation. However, (19) does not have the reading where *some variations* takes wide scope under its nonpresuppositional reading.[6]
The lack of wide scope for nonpresuppositional QPs is confirmed by another set of examples. Recall from the preceding example in (20) that BP-NPs with an existential reading may only have a nonpresuppositional reading. And indeed an existential BP-NP may only take narrow scope with respect to another QP, as we have already observed:

(24) (= (11b))
Everyone read *books about giraffes*.
[unambiguous: ∀ > ∃, *∃ > ∀]

Thus if the three readings mentioned above by Diesing are all the readings of (23), the lack of the fourth reading, the one where the nonpresuppositional object QP takes wide scope, is explained in the following way in Diesing's framework:

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[6] See Diesing (1992: 68) for a precise scenario for each of these readings. Exactly speaking, Diesing (1992) points out these three readings for (23) and only implies that it lacks the fourth reading where the nonpresuppositional object takes wide scope. Despite this, however, we may maintain the generalization that a nonpresuppositional Q-NP cannot take wide scope if we take into account the example in (24) and another set of examples of Diesing's (1992) in (i).

(i) a. *Sm cellists* played *every suite* today.
b. *Mny cellists* played SOME suite today.
c. *Tw cellists* played SOME suite today.
[all unambiguous: *Subj > Obj, Obj > Subj] (Diesing (1992: 63))

These examples, as Diesing points out, lack the reading in which the subject QP takes scope over the object QP. The subject QP is forced to have a nonpresuppositional reading by destressing the quantifier, which is indicated by the spelling convention *sm, mny,* and *tw* employed widely in the literature since Postal (1966).

(25) LFs for (23):

a. [IP every cellist$_i$ [IP some variations$_j$ [IP t_i [VP played t_j]]]]

b. [IP every cellist$_i$ [IP t_i [VP played some variations]]]

c. [IP some variations$_j$ [IP every cellist$_i$ [IP t_i [VP played t_j]]]]

The first reading mentioned above (∀ > ∃) is yielded by the LF in (25a). Since the object QP *some variation* has a presuppositional reading, it undergoes QR and adjoins to a lower position than *every cellist*. The second ∀ > ∃ reading, where the object is interpreted nonpresuppositionally, is yielded by (25b). Here the object does not undergo QR and remains in its original position. The object takes narrow scope since it is structurally lower than the subject QP. The third reading, the inverse scope reading ∃ > ∀, is obtained by the application of QR to the object QP by virtue of its presuppositional reading. This is shown in (25c). If the object undergoes QR, it may be raised over the subject, which yields the wide scope reading of the object QP.

Likewise, the obligatory narrow scope of the existential BP-NP in (24) can be captured since the existential BP-NP is necessarily nonpresuppositional and hence does not undergo QR. The only LF structure of (24) is (26):

(26) [IP everyone$_i$ [IP t_i [VP read [books about giraffes]$_j$]]]

Thus Diesing's (1992) analysis can capture the correlation between the scope property and the (non)presuppositionality of QPs.

2.3.2 Homma et al. (1992) on NP-FQs in Japanese

The correlation between the nonpresuppositionality and the narrow scope property of NP-FQs and B-NPs has also been discussed by Homma et al. (1992), whose analysis, as with Diesing (1990, 1992), is based on the dichotomy of QPs in terms of the semantic notion of presuppositionality and consists of the condition that only presuppositional QPs undergo QR at LF.

Homma et al. first point out that B-NPs in non-topic positions in Japanese can have an existential reading, but differ from QPs with an overt existential quantifier such as *nan-nin-ka-no* 'some' in that B-NPs can only be interpreted as nonpresuppositional:[7]

[7] In the topic position, where the topic particle *wa* is attached, bare NPs have a generic interpretation:

(i) Inu-wa niwa-o kakemawar-u
dog-Top garden-Acc run.around-Pres
'Dogs run around in gardens.'

(27) *Ten men took a witness stand in a court, and ...*

a. *syoonin-ga* hontoo-no koto-o it-ta
witness-Nom true-Gen thing-Acc say-Past
'Witnesses told the truth.'
[*presuppositional, nonpresuppositional]

b. *nan-nin-ka-no syoonin-ga* hontoo-no koto-o it-ta
some-Gen witness-Nom true-Gen thing-Acc say-Past
'Some witnesses told the truth.'
[presuppositional, nonpresuppositional]

Although the subject DP in both (27a) and (27b) is understood to have an existential interpretation and can be paraphrased as "some witnesses," the subject B-NP *syoonin-ga* in (27a) only has a nonpresuppositional reading in that it cannot refer to a subset of the set of ten men in the preceding discourse, in contrast to the subject NP with an overt prenominal existential quantifier *nan-nin-ka-no syoonin-ga* in (27b), which does have a presuppositional reading and can refer to a subset of the set of ten witnesses introduced in the preceding sentence.

A second point of Homma et al. (1992) is that numeral FQs such as *san-nin* in Japanese must take a B-NP as its host:[8]

(28) a. Sono san-nin-no otoko-ga unagi-o tabe-ta
that 3-Cl-Gen man-Nom eel-Acc eat-Past
'Those three men ate eel.'

b. * Sono otoko-ga san-nin unagi-o tabe-ta
that man-Nom 3-Cl eel-Acc eat-Past

This means that since the host NP for numeral FQs is nonpresuppositional, it follows that NP-FQs are nonpresuppositional as well.[9] NP-FQs behave on a par with B-NPs in that

[8] Homma et al. (1992) limit their discussion to numeral FQs and do not include "presuppositional" FQs such as *zen'in* 'all,' *subete* 'every,' and *hotondo* 'most,' which may occur as FQs but do not require their host NP to be a bare NP:

(i) sono-gakusei-tati-ga zen'in/subete/hotondo gookakusi-ta
that-student-Pl-Nom all/every/most pass-Past
'All/Most of those students passed.'

[9] The observation that NP-FQs are nonpresuppositional is also made in Muromatsu (1998), who points out the following example:

(i) a. *Hutari-no kodomo-o* sitinen-sei-ni, *hitori-no kodomo-o* hatinen-sei-ni ire-ta
2.Cl-Gen child-Acc 7th-grade-Dat 1-Cl-Gen child-Acc 8th-grade-Dat send-Past
'I sent two children to the seventh grade, and one child to the eighth grade.'

NP-FQs may only be interpreted as nonpresuppositional. This is shown in (29):

(29) a. Zyuu-nin-no otoko-ga syoogendai-ni tat-ta. Sosite *go-nin-no*
10-Cl-Gen man-Nom witness.stand-Dat stand-Past and 5-Cl-Gen
syoonin-ga hontoo-no koto-o it-ta
witness-Nom true-Gen thing-Acc say-Past
'Ten men took the witness stand, and five (of the) witnesses told the truth.'

b. Zyuu-nin-no otoko-ga syoogendai-ni tat-ta. Sosite *syoonin-ga go-nin*
10-Cl-Gen man-Nom witness.stand-Dat stand-Past and witness-Nom 5-Cl
hontoo-no koto-o it-ta
true-Gen thing-Acc say-Past
'Ten men took the witness stand, and five witnesses told the truth.'

(Homma et al. (1992))

While the subject QP *go-nin-no syoonin-ga* in (29a) may refer to a subset of the set of ten male witnesses, the subject NP-FQ *syoonin-ga go-nin* in (29b) cannot refer to a subset of this set.

As Homma et al. show, the above characterization of B-NPs and NP-FQs and the requirement that only presuppositional QPs can undergo QR can explain the narrow scope property of FQs discussed earlier. The relevant examples are repeated below:

(30) (= (4))

a. *Huta-tu-no booru-o* daremo-ga ket-ta.
2-Cl-Gen ball-Acc everyone-Nom kick-Past
'Everyone kicked two balls.'
[ambiguous: ∀ > 2, 2 > ∀]

b. *Booru-o huta-tu* daremo-ga ket-ta.
ball-Acc 2-Cl everyone-Nom kick-Past
'Everyone kicked two balls.'
[unambiguous: ∀ > 2, *2 > ∀]

(31) (= (5))

a. Hanako-ga [*san-nin-no otoko-o* syootaisi]-tagatte i-ru
Hanako-Nom three-Cl-Gen man-Acc invite-want be-Pres
'Hanako wants to invite three men.'

---

b. Sitinen-sei-ni *kodomo-o hutari*, hatinenn-sei-ni *kodomo-o hitori* ire-ta
7th-grade-Dat child-Acc 2.Cl 8th-grade-Dat child-Acc 1-Cl send-Past
(Muromatsu (1998))

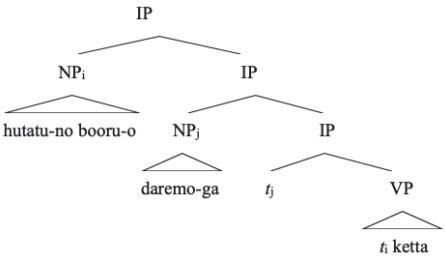
[ambiguous: 3 > want, want > 3]

b. Hanako-ga [*otoko-o* *san-nin* syootaisi]-tagatte i-ru
Hanako-Nom man-Acc three-Cl invite-want be-Pres
'Hanako wants to invite three men.'
[unambiguous: *3 > want, want > 3]

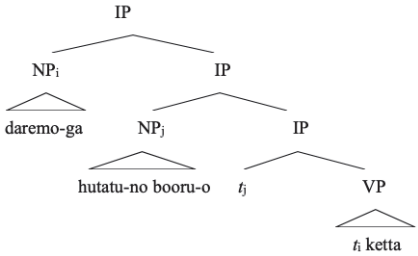
The LF and the SR of (30a) and (30b), for example, are each represented as follows:

(32) a. LFs of (30a):

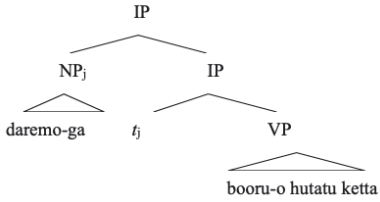
i)



ii)



b. LF of (30b):



(33) a. SRs of (30a):

i) [∃*y*: *y* = 2 & ball (*y*)] [∀*x*: person (*x*)] (kicked (*x*, *y*)) (from LF (32a-i))
Operator, Restrictive Clause *Nuclear Scope*

ii) [∀*x*: person (*x*)] [∃*y*: *y* = 2 & ball (*y*)] (kicked (*x*, *y*)) (from LF (32a-ii))
Operator, Restrictive Clause *Nuclear Scope*

b. SR of (30b):
[∀*x*: person (*x*)] ∃*y* (two balls (*y*) & kicked (*x*, *y*)) (from LF (32b))
Operator, Restrictive Clause *Nuclear Scope*

In contrast to NP-FQs, Q-NPs can have a presuppositional interpretation so that the Q-NP *huta-tu-no booru-o* in (30a) can be interpreted as "two of the balls" and accordingly can undergo QR. Homma et al. assume that QR adjoins a QP to an IP node, which yields either of the LF structures in (32a-i) and (32b-ii) for (30a). On the other hand, the NP-FQ in (30b) does not undergo QR and hence must stay in the relevant syntactic domain that is mapped onto the Nuclear Scope.[10] This explains the obligatory narrow scope of NP-FQs.

The LFs for the sentences in (31) are represented as follows:

(34) LFs for (31):
a. i) [$_{IP}$ [$_{DP}$ san-nin-no otoko-o]$_i$ [$_{IP}$ Hanako-ga [$_{CP}$ [$_{IP}$ *PRO* t_i syootaisi]]-tagatteiru]]
ii) [$_{IP}$ Hanako-ga [$_{CP}$ [$_{IP}$ [$_{DP}$ san-nin-no otoko-o]$_i$ [$_{IP}$ *PRO* t_i syootaisi]]]-tagatteiru]
b. [$_{IP}$ Hanako-ga [$_{CP}$ [$_{IP}$ *PRO* [$_{DP}$ otoko-o san-nin] syootaisi]]-tagatteiru]

Since the Q-NP in (31a) has a presuppositional reading, it may move by QR and adjoin to either the embedded or the matrix IP. Thus the Q-NP may either take wide or narrow scope with respect to the matrix predicate *tagatteiru* 'want.' On the other hand, the NP-FQ *otoko-o san-nin*, being nonpresuppositional, cannot undergo QR and thus remain in its original position in the complement clause. This is why the NP-FQ may only have the narrow scope (opaque) reading.

2.3.3 Problems for Diesing (1990, 1992) and Homma et al. (1992)

Although Homma et al. (1992) capture the correspondence between the scope property and the (non)presuppositionality of QPs, their analysis faces the following problem. As pointed out in Hasegawa (1991, 1993), it is not only NP-FQs with numeral quantifiers such as *san-nin* '3-Cl' and *ni-dai* '2-Cl' that cannot take wide scope. The narrow scope property of numeral FQs is shared by FQs such as *hotondo* 'most' and *subete* 'every.' These quantifiers necessarily form presuppositional DPs since they require the presence of a set of entities in the preceding discourse. For example, the following examples both require the speaker to have a set of students/people in mind from the preceding discourse:

[10] Homma et al. (1992) assume that scrambled NPs are reconstructed to their base-generated positions first at LF, and, if presuppositional, undergo QR.

(35) a. *Subete-no gakusei-ga* ki-ta
every-Gen student-Nom come-Past
'Every student came.'
b. *Hotondo-no gakusei-ga* ki-ta
most-Gen student-Nom come-Past
'Most of the students came.'

These quantifiers may occur as FQs. Importantly, the NP-FQs involving these quantifiers can necessarily be interpreted as presuppositional, as well as the Q-NPs involving these quantifiers:

(36) *Gakusei-tati-ga* {*subete/hotondo/zen'in*} ki-ta
student-Pl-Nom every/most/everyone come-Past
'All/Most of the students came.'

The analyses along the lines of Diesing (1990, 1992) and Homma et al. (1992) predict that such presuppositional NP-FQs as the ones in (36) behave in the same manner as Q-NPs, since the former, being presuppositional, undergoes QR on a par with the latter. This prediction is not borne out, as shown by Hasegawa (1991, 1993). Consider:

(37) a. Taroo-dake-ga *hotondo-no gakusei-o* syootaisi-ta
Taro-only-Nom most-Gen student-Acc invite-Past
'Only Taro invited most of the students.'
[unambiguous: only > most, *most > only]
b. *Hotondo-no gakusei-o* Taroo-dake-ga syootaisi-ta
most-Gen student-Acc Taro-only-Nom invite-Past
'Only Taro invited most of the students.'
[ambiguous: only > most, most > only]

(38) a. Taroo-dake-ga *gakusei-o* *hotondo* syootaisi-ta
Taro-only-Nom student-Acc most invite-Past
'Only Taro invited most of the students.'
[unambiguous: only > most, *most > only]
b. *Gakusei-o* *hotondo* Taroo-dake-ga syootaisi-ta
student-Acc most Taro-only-Nom invite-Past
'Only Taro invited most of the students.'
[unambiguous: only > most, *most > only]

(39) a. San-nin-no gakusei-ga *subete-no kadaikyoku-o* ensoosi-ta
3-Cl-Gen student-Nom every-Gen set.piece-Acc play-Past
'Three students played every set piece.'
[unambiguous: 3 > ∀, *∀ > 3]

b. *Subete-no kadaikyoku-o* san-nin-no gakusei-ga ensoosi-ta
every-Gen set.piece-Acc 3-Cl-Gen student-Nom play-Past
'Three students played every set piece.'
[ambiguous: 3 > ∀, ∀ > 3]

(40) a. San-nin-no gakusei-ga *kadaikyoku-o subete* ensoosi-ta
3-Cl-Gen student-Nom set.piece-Acc every play-Past
'Three students played every set piece.'
[unambiguous: 3 > ∀, *∀ > 3]

b. *Kadaikyoku-o subete* san-nin-no gakusei-ga ensoosi-ta
set.piece-Acc every 3-Cl-Gen student-Nom play-Past
'Three students played every set piece.'
[unambiguous: 3 > ∀, *∀ > 3]

When the quantifier *hotondo* 'most' is in a prenominal position, as in (37), the QP exhibits the same scope pattern as the QPs with a prenominal numeral quantifier such as *san-nin-no gakusei-o*. While it cannot take wide scope over the subject QP in the order Subj-Obj as in (37a), it may take wide scope when it is scrambled to the left of the subject ((37b)). However, when *hotondo* occurs as an FQ, as in (38), the QP may not take wide scope over the other QP irrespective of whether it is scrambled or not. The same is true of the universal quantifier *subete*. It can only take narrow scope when it is floated, as we see in (40).

The observed narrow scope property is not only true of the NP-FQs with an inherently presuppositional quantifier such as *subete* and *hotondo*, but also true of the NP-FQs with a numeral FQ that somehow yield a presuppositional interpretation. Consider:

(41) a. *Kinoo ki-ta kyaku-ga san-nin* kyoo kaet-ta
yesterday come-Past guests-Nom 3-Cl today return-Past
'Three guests who came yesterday left today.'

b. Boku-wa *sensei-ga suisensi-ta hon-o san-satu* yon-da
I-Top teacher-Nom recommend-Past book-Acc 3-Cl read-Past
'I read three books that the teacher recommended.'

The QPs *kinoo kita kyaku-ga san-nin* and *sensei-ga suisensi-ta hon-o 3-satsu* are understood to have a presuppositional interpretation in the sense that the former refers to three guests in the set of guests who came yesterday, and the latter to three of the set of books that the teacher

recommended.[11] Crucially, these DPs can only take narrow scope under another QP. Consider:

(42) a. Yon-syurui-no miyage-o *kinoo* *ki-ta* *kyaku-ga* *san-nin* kat-ta
4-kind-Gen souvenir-Acc yesterday come-Past guest-Nom 3-Cl buy-Past
'Three guests who came yesterday bought four kinds of souvenir.'
[unambiguous: *3 > 4, 4 > 3]

b. *Sensei-ga* *suisensi-ta* *hon-o* *san-satu* daremo-ga yon-da
teacher-Nom recommend-Past book-Acc 3-Cl everyone-Nom read-Past
'Everyone read three books that the teacher recommended.'
[unambiguous: ∀ > 3, *3 > ∀]

It is quite difficult to interpret the NP-FQs in these examples as taking wide scope over the other QP in the sentence, in contrast to the QP with the same quantifier in the prenominal position as in the following examples:

(43) a. Yon-syurui-no miyage-o *san-nin-no kyaku-ga* kat-ta
4-kind-Gen souvenir-Acc 3-Cl-Gen guest-Nom buy-Past
'Three guests bought four kinds of souvenir.'
[ambiguous: 3 > 4, 4 > 3]

b. *San-satu-no hon-o* daremo-ga yon-da
3-Cl-Gen book-Acc everyone-Nom read-Past
'Everyone read three books.'
[ambiguous: ∀ > 3, 3 > ∀]

Thus the analyses of the narrow scope property of NP-FQs along the lines of Diesing (1990, 1992) and Homma et al. (1992) are not empirically adequate since they predict wrongly that the NP-FQs in (38), (40), and (42) can take wide scope over the other QP, since they have the presuppositional interpretation and as such should undergo QR.

2.3.4 Hasegawa (1991, 1993)

Hasegawa (1991, 1993) pursue a syntactic approach to the narrow scope property of NP-FQs and B-NPs in which she proposes that the applicability of QR is determined by the syntactic form of QPs, not by their semantics. The first point of Hasegawa's analysis is that FQs are exempt from the application of QR for a syntactic reason. Hasegawa argues that while the role of QR is to raise a QP to A'-position to license the QP as an operator, an FQ is already in A'-position outside its host DP so that the FQ can be licensed as an operator in situ,

[11] The presuppositional reading of numeral FQs is also discussed in Ishii (1997, 1998).

without being moved by QR. Instead of being licensed as an operator by the application of QR, Hasegawa proposes, FQs are licensed by the condition in (44), accompanied by the convention for coindexation in (45):

(44) The Licensing Condition on FQ/Ind's (applies only at LF)[12]
An FQ/Ind is licensed if it is coindexed with an NP in A-position.
(Hasegawa (1993: 126))

(45) An FQ/Ind and an NP are coindexed, if
(i) they mutually c-command each other and
(ii) they agree in relevant features. (Hasegawa (1993: 124))

By (44) and (45) an FQ is required to stay in its underlying position since the FQ has to maintain a local relation with its host NP in A-position, the position which Hasegawa seems to identify with the argument DP's thematic position. When an FQ is scrambled, the FQ has to be "reconstructed" at LF to its underlying position in order to observe the condition in (44). Q-NPs, on the other hand, are subject to QR since they are in A-position and thus need to move to A'-position at LF in order to be licensed as an operator. The difference in scope interpretation between (46a) and (46b), for example, is accounted for in terms of the difference in the applicability of QR: either of the QPs in (46a) can be moved by QR whereas QR applies only to the QP *daremo-ga* 'everyone' in (46b) since the scrambled NP-FQ must be reconstructed back to its underlying position to meet the condition in (44):

(46) a. *Huta-tu-no kotoba-o* daremo-ga sitte i-ru
2-Cl-Gen language-Acc everyone-Nom know be-Pres
'Everyone knows two languages.'
[ambiguous: ∀ > 2, 2 > ∀]
b. *Kotoba-o huta-tu* daremo-ga sitte i-ru
language-Acc 2-Cl everyone-Nom know be-Pres
'Everyone knows two languages.'
[unambiguous: ∀ > 2, *2 > ∀]

[12] By "Ind" Hasegawa (1991, 1993) refer to Caseless indeterminate expressions such as *dareka* 'someone' and *nanika* 'something' that appear outside their host DP, on a par with FQs. As Hasegawa observes, Ind's take narrow scope with respect to other QPs:

(i) *Gakusei-o dareka* daremo-ga sikat-ta
student-Acc someone everyone-Nom scold-Past
'Everyone scolded some student.'
[unambiguous: ∀ > ∃, *∃ > ∀]

As for B-NPs, Hasegawa (1991, 1993) propose a phonetically null counterpart of FQs/Ind's and account for the narrow scope property of B-NPs in the same way as overt FQs/Ind's. Sentence (47a), for example, is represented as (47b), where the phonetically null counterpart of an FQ is represented as *QP*:

(47) a. Daremo-ga *hon-o* kat-ta
everyone-Nom book-Acc buy-Past
'Everyone bought a book/books.'
b. [daremo-ga [$_{VP}$ hon-o$_i$ *QP*$_i$ kat-] ta]

Since *QP* is subject to the conditions in (44) and (45), they and their host NP are required to be reconstructed to their underlying position, in the way that FQs and their host NP are. Thus the LF of sentence (48a) is represented as (48b) and this captures the lack of wide scope reading of the B-NP in (48a):

(48) a. *Hon-o* daremo-ga kat-ta
book-Acc everyone-Nom buy-Past
'Everyone bought a book/books.'
[unambiguous: ∀ > ∃, *∃ > ∀]
b. LF: [daremo-ga$_i$ [$_{VP}$ t_i hon-o$_j$ *QP*$_j$ kat-] ta]

Hasegawa extends this analysis to the narrow scope property of B-NPs in English. She assumes that B-NPs in English are also accompanied by the phonetically null counterpart of FQ/Ind's in Japanese. Thus sentence (49a), for example, yields the LF in (49b):

(49) a. Everyone read *books on giraffes*.
[unambiguous: ∀ > ∃, *∃ > ∀]
b. LF: [everyone$_i$ [$_{VP}$ t_i [$_{V'}$ read [books on giraffes]$_j$ *QP*$_j$]]]

This accounts for the lack of wide scope for the object B-NP *books on giraffes* in (49a). While the subject QP *everyone* undergoes QR to be adjoined to a higher position, the object B-NP *books on giraffes* is subject to the requirements in (44) and (45) so that it can only take narrow scope in its underlying position.

Hasegawa's (1991, 1993) analysis correctly captures the lack of wide scope of presuppositional FQs, a case problematic to Diesing's (1990, 1992) and Homma et al.'s (1992) analyses:

(50) (= (38))

a. Taroo-dake-ga *gakusei-o* *hotondo* syootaisi-ta
Taro-only-Nom student-Acc most invite-Past
'Only Taro invited most of the students.'
[unambiguous: only > most, *most > only]

b. *Gakusei-o* *hotondo* Taroo-dake-ga syootaisi-ta
student-Acc most Taro-only-Nom invite-Past
'Only Taro invited most of the students.'
[unambiguous: only > most, *most > only]

(51) (= (40))

a. San-nin-no gakusei-ga *kadaikyoku-o subete* ensoosi-ta
3-Cl-Gen student-Nom set.piece-Acc every play-Past
'Three students played every set piece.'
[unambiguous: 3 > ∀, *∀ > 3]

b. *Kadaikyoku-o subete* san-nin-no gakusei-ga ensoosi-ta
set.piece-Acc every 3-Cl-Gen student-Nom play-Past
'Three students played every set piece.'
[unambiguous: 3 > ∀, *∀ > 3]

In Hasegawa's system, presuppositional FQs such as *hotondo* 'most' and *subete* 'every' are subject to the requirements in (44) and (45) on a par with numeral FQs since they, as FQs, must be treated as A'-quantifiers, irrespective of their presuppositionality. Thus the narrow scope property of these FQs are correctly captured.

2.3.5 Problems for Hasegawa (1991, 1993)

Hasegawa's (1991, 1993) analysis is not without problems, however. The first problem has to do with her assumption that FQs in Japanese are A'-quantifiers. It has been pointed out in the past literature that an FQ and its host NP in fact form a single constituent. This is indicated by the fact that an FQ and its host NP may be conjoined (Kamio (1977), Terada (1990), Ueda (1990, 1993), Kawashima (1994), Watanabe (2006)):

(52) a. *Syoonen-ga san-nin* to *syoozyo-ga hutari* umi-o mite i-ta
boy-Nom 3-Cl and girl-Nom 2.Cl sea-Acc see be-Past
'Three boys and two girls were looking at the sea.'

b. Ann-wa *yoonasi-o hito-tu* to *orenzi-o* *yon-ko* kat-ta
Ann-Top pear-Acc 1-Cl and orange-Acc 4-Cl buy-Past
'Ann bought one pear and four oranges.'

(Ueda (1993: 16))

If we assume that only constituents may be conjoined, this fact can be best accounted for by saying that an FQ is actually located inside its host DP, not outside of it, as shown roughly as:

(53) a. [DP *syoonen-ga san-nin*] to [DP *syoozyo-ga hutari*] umi-o mite i-ta
b. Ann-wa [DP *yoonasi-o hito-tu*] to [DP *orenzi-o yon-ko*] kat-ta

If this is so, then there is no reason to regard the FQ as being an A'-quantifier since it is inside an argument QP in A-position on a par with a quantifier occurring prenominally. Accordingly, there is also no reason for an NP-FQ to be distinguished from a Q-NP in terms of the applicability of QR: since an FQ is actually inside a DP on a par with a prenominal quantifier, QR would have to apply to NP-FQs in order to establish an operator-variable chain.

A second problem with Hasegawa's (1991, 1993) analysis has to do with the fact that *not all* prenominal quantifiers may take wide scope. Recall that Diesing's (1992) example in (23) has three readings and lacks the wide scope of the object when it has a nonpresuppositional reading (See Section 2.3.1.).

(54) (= (23))
Every cellist played *some variations*.
[ambiguous: ∀ > ∃, ∃ > ∀] (Diesing (1992: 65))

In Hasegawa's system, all QPs with a prenominal quantifier must be treated equally with respect to the application of QR, irrespective of the (non)presuppositionality of QPs. In other words, Hasegawa cannot capture the correlation between the presuppositionality and the scope of QPs.

The nonpresuppositional reading is also observed with Q-NPs in Japanese. In fact, a Q-NP is ambiguous between the presuppositional and the nonpresuppositional reading (Homma et al. (1992), Muromatsu (1998)):

(55) Watasi-wa *san-nin-no gakusei-o* mi-ta
I-Top 3-Cl-Gen student-Acc see-Past
'I saw three students.'

The Q-NP *san-nin-no gakusei* may either refer to a subset of the set of students that are previously mentioned in the discourse (a presuppositional reading) or to students that are not previously mentioned but are introduced into the discourse for the first time (a nonpresuppositional reading). The relevance of the nonpresuppositional reading of a Q-NP in Japanese to the unavailability of wide scope seems at first sight not straightforward because of the presence of the presuppositional reading. One cannot tell easily whether the QP in

san-nin-no gakusei-o can or cannot take wide scope under its nonpresuppositional reading:

(56) *San-nin-no gakusei-o* daremo-ga mi-ta
3-Cl-Gen student-Acc everyone-Nom see-Past
'Everyone saw three (of the) students.'
[ambiguous: 3 > ∀, ∀ > 3]

However, it is possible to control the readings available for a Q-NP by creating an environment that forces the Q-NP to be interpreted as nonpresuppositional. The verbs *motteiru* 'have' and *katteiru* 'have as a pet,' for example, require their object to have a nonpresuppositional reading only:

(57) a. Taroo-wa *mit-tu-no ringo-o* motte i-ru
Taro-Top 3-Cl-Gen apple-Acc have be-Pres
'Taro has three apples.'
b. Taroo-wa *ni-hiki-no kabutomusi-o* katte i-ru
Taro-Top 2-Cl-Gen beetle-Acc keep be-Pres
'Taro has two beetles as pets.'

In these examples, the object QPs *mit-tu-no ringo-o* and *ni-hiki-no kabutomusi-o* are naturally interpreted as nonpresuppositional: it seems very difficult, if not impossible, to interpret these object QPs to refer to a subset of the set of apples or beetles that are mentioned previously in the discourse. With this in mind, consider:

(58) a. *Mit-tu-no ringo-o* daremo-ga motte i-ru
3-Cl-Gen apple-Acc everyone-Nom have be-Pres
'Everyone has three apples.'
[unambiguous: ∀ > 3, *3 > ∀]
b. *Ni-hiki-no kabutomusi-o* daremo-ga katte i-ru
2-Cl-Gen beetle-Acc everyone-Nom keep be-Pres
'Everyone has two beetles as pets.'
[unambiguous: ∀ > 2, *2 > ∀]

It seems that the scrambled object QP lacks the wide scope reading in both of these examples.

The lack of ambiguity in (58) is not expected in Hasegawa's (1991, 1993) analysis, which allows QPs with a prenominal quantifier to undergo QR and thus to take wide scope over another QP. On the other hand, this fact favors the analyses in Diesing (1990, 1992) and Homma et al. (1992), which restrict the application of QR to presuppositional QPs.

Thirdly, the position of a prenominal quantifier inside a QP affects the scope of that QP.

Consider:

(59) a. *At an audition for pop singers,*
Hutari-no kireina syoozyo-o subete-no geinoopurodakusyon-ga sasot-ta
2.Cl-Gen beautiful girl-Acc every-Gen talent.agency-Nom invite-Past
Lit. 'Two beautiful girls, every talent agency invited.'
[ambiguous: ∀ > 2, 2 > ∀]

b. *San-dai-no akai kuruma-o daremo-ga* mokugekisi-ta
3-Cl-gen red car-Acc everyone-Nom witness-Past
Lit. 'Three red cars, everyone witnessed.'
[ambiguous: ∀ > 3, 3 > ∀] (Homma (2011))

(60) a. *At an audition for pop singers,*
Kireina hutari-no syoozyo-o subete-no geinoopurodakusyon-ga sasot-ta
beautiful 2.Cl-Gen girl-Acc every-Gen talent.agency-Nom invite-Past
Lit. 'Two beautiful girls, all the talent agencies invited.'
[unambiguous: ∀ > 2, *2 > ∀]

b. *Akai san-dai-no kuruma-o daremo-ga* mokugekisi-ta
red 3-Cl-gen car-Acc everyone-Nom witness-Past
Lit. 'Three red cars, everyone witnessed'
[unambiguous: ∀ > 3, *3 > ∀] (ibid.)

In (59) the numeral quantifiers *hutari-no* and *san-dai-no* occur in the leftmost position in the scrambled object QP while in (60) they occur to the right of the nominal adjective *kireina* ((60a)) and the adjective *akai* ((60b)), respectively.[13] Crucially, this difference in the placement of a prenominal quantifier within a QP affects the scope interpretation of that QP. While the scrambled object QP in (59) can take either wide or narrow scope with respect to the subject QP, the QP with its prenominal quantifier following a modifier of that QP cannot take wide scope over the subject QP.

This difference in scope between (59) and (60) is also unexpected under the analysis of Hasegawa (1991, 1993), in which Q-NPs all undergo QR to take wide scope. This fact tells us of the need to posit a stricter constraint on the application of QR than is proposed in Hasegawa (1991, 1993).

2.3.6 Shibata (2015)

Shibata (2015) provides an extensive analysis of the scope of an object QP and negation,

[13] The terms *adjectives* and *nominal adjectives* are employed in Kuno (1973), Uehara (1996) and Yamakido (2000, 2005), although Yamakido (2005) uses the term *true adjectives* for *adjectives*. In what follows in the text, we refer to these two modifiers as Adj.

based on the observation that an object QP can easily take wide scope over negation in Japanese, in contrast to English, where an object QP can only take narrow scope under negation.

(61) Taroo-wa go-nin-izyoo-no gakusei-o sikar-anakat-ta
Taro-Top 5-Cl-or.more-Gen student-Acc scold-Neg-Past
[ambiguous: 5 or more > Neg, Neg > 5 or more]
(Shibata (2015: 230))

(62) John didn't scold every student.
[unambiguous: *∀ > Neg, Neg > ∀] (ibid.)

In order to account for this fact, Shibata proposes that an object with the overt Case particle *-o* in Japanese must be obligatorily raised over negation into the functional projection called PrtP (Particle Phrase), where the object QP has its Case particle licensed. This process is illustrated below:

(63) $[_{TP}$ T $[_{PrtP}$ $[_{NP}$ NP-*o*$]_i$ Prt $[_{NegP}$ Neg $[_{vP}$ t_i v [... t_i ...]]]]]
(Shibata (2015: 254))

Since this movement raises the object to a position higher than negation, Shibata argues, it allows the object in Japanese to take scope over negation.[14] This analysis also accounts for the obligatory narrow scope of objects in English. Since English does not have overt Case particles, English objects do not undergo the movement into PrtP, remaining in the position lower than negation.

2.3.7 A Problem for Shibata (2015)

Shibata's proposal that movement of the object QP into PrtP allows it to have wide scope

[14] To support the analysis in (63), Shibata (2015) points out the fact, originally pointed out by Saito (1983, 1985), that an object without the overt Case particle *-o* must be adjacent to the verb, while an object with the overt Case particle does not have to be:

(i) a. Taroo-wa nani-(o) kat-ta no
Taro-Top what-Acc buy-Past Q
'What did Taro buy?'
b. Nani-*(o) Taroo-wa *t* kat-ta no
what-Acc Taro-Top buy-Past Q

Obligatory adjacency of the object without the Case particle to the verb is expected since the object can only move to [Spec, PrtP] only when it has the overt Case particle: otherwise the object has to remain in its original position inside VP, the position adjacent to the verb.

over negation predicts that *any* object QP with the Accusative Case-particle should be able to take wide scope over negation. Contrary to this prediction, however, there are at least two types of object that strongly favor narrow scope under negation. The first type is a bare DP that has an existential interpretation. As we have already observed in 2.2.2, an object existential bare DP may not take wide scope over negation.

(64) (= (16))
a. Taroo-ga *gakusei-o* home-*nakat*-ta
Taro-Nom student-Acc praise-Neg-Past
'Taro did not praise students.'
[unambiguous: *∃ > Neg, Neg > ∃]
b. Keisatu-ga *tooboohan-o* taihosi-*nakat*-ta
police-Nom fugitive-Acc arrest-Neg-Past
'The police did not arrest fugitive criminals.'
[unambiguous: *∃ > Neg, Neg > ∃]

The second type of object that has difficulty taking wide scope over negation is a DP with an FQ in the prenominal position (henceforth, an FQ-NP). We have already pointed out that an NP-FQ in the object position may take wide scope over negation:

(65) (= (17))
a. Taroo-ga *gakusei-o san-nin-izyoo* home-*nakat*-ta
Taro-Nom student-Acc 3-Cl-or.more praise-Neg-Past
'Taro did not praise three or more students.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]
b. Keisatu-ga *tooboohan-o san-nin-izyoo* taihosi-*nakat*-ta
police-Nom fugitive-Acc 3-Cl-or.more arrest-Neg-Past
'The police did not arrest three or more fugitive criminals.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]

In contrast, if the FQ is in the prenominal position as in (66), the object QP may only take, or at least strongly favors, narrow scope under negation:

(66) a. Taroo-ga *san-nin-izyoo gakusei-o* home-*nakat*-ta
Taro-Nom 3-Cl-or.more student-Acc praise-Neg-Past
'Taro did not praise three or more students.'
[unambiguous: *3 or more > Neg, Neg > 3 or more]
b. Keisatu-wa *san-nin-izyoo tooboohan-o* taihosi-*nakat*-ta
police-Top 3-Cl-or.more fugitive-Acc arrest-Neg-Past

'The police did not arrest three or more fugitive criminals.'
[unambiguous: *3 or more > Neg, Neg > 3 or more]

Thus the existence of at least two kinds of object favoring narrow scope poses a problem for Shibata's (2015) analysis that wide scope of an object QP over negation is made possible by its movement to [Spec, Prt].

2.4 Summary of Chapter 2

In this chapter we have reviewed three past approaches to QP scope. One approach, taken by Diesing (1990, 1992) and Homma et al. (1992), attempts to account for the possibility of wide scope of QPs in terms of their presuppositionality by claiming that only presuppositional QPs undergo the rule of QR. We have provided arguments against this approach by showing that not all presuppositional QPs may take wide scope.

The second approach, taken by Hasegawa (1991, 1993), focuses on the syntactic form of QPs and claim that only QPs with a prenominal quantifier, but not NP-FQs and B-NPs, may undergo QR. We have pointed out problems to Hasegawa's analysis by showing that not all prenominal quantifiers may assure wide scope of QPs.

The third analysis, developed in Shibata (2015), is an attempt to account for the scope of an object QP and negation. The fact that object QPs in Japanese may take wide scope over negation is explained by Shibata's proposal that object QPs are raised over negation to [Spec, PrtP] for having its Case-feature checked. However, we have argued that this approach cannot account for the two kinds of objects that obligatorily take narrow scope under negation.

The conclusion that we have reached in this chapter is summarized as the following generalizations:

(67) a. NP-FQs cannot take wide scope over a subject or an opacity-inducing predicate, irrespective of their (non)presuppositionality.
b. B-NPs cannot take wide scope.
c. Q-NPs cannot take wide scope if the quantifier is not in the leftmost position.
d. Q-NPs cannot take wide scope if they are nonpresuppositional.
e. Q-NPs and NP-FQs, but not B-NPs and FQ-NPs, can take wide scope over negation.

These are at best descriptive generalizations and thus call for a principled account. Since the main goal of this work is to identify syntactic determinants of quantifier scope, we may ask if these generalizations can be captured in syntactic terms. The generalizations in (67a) and (67c) suggest the significance of the syntactic position of a quantifier inside a QP: in order for a QP to take wide scope its quantifier needs to be not only prenominal but also in the leftmost prenominal position. It seems that (67b) can also be captured in syntactic terms. B-NPs

cannot take wide scope since they lack a quantifier. What about (67d)? The generalization in (67d) is stated in semantic terms. In order to capture this in syntactic terms, we need to identify a syntactic factor, if any, that is involved in the determination of presuppositionality. Lastly, the generalization in (67e) is a bit challenging, since this may tell us that NP-FQs have different scope-taking properties in relation to different scope-taking elements.

In Chapter 3 we turn to the discussion of the structure of QPs and their relevance to presuppositionality and scope. Then we turn to the explanations of the generalizations in (67) in Chapters 4 and 5.

Chapter 3
The Structure and the Interpretation of QPs

3.1 Introduction

In this chapter we discuss the correlation between the syntactic position of a quantifier inside a QP and the availability of the presuppositional interpretation of the QP containing the quantifier. We first review the previous works on the difference in the distribution of strong and weak quantifiers in a QP (Section 3.1), and then examine the correlation between the syntactic position of a quantifier in a QP and the interpretation of the quantifier (Section 3.2). We suggest that the correlation between the syntactic position of a quantifier in a QP and the presuppositionality of the QP holds only partially, and that the presuppositional interpretation of a QP may come from sources other than the quantifier's being in [Spec, DP]. In doing so, we defend our claim made in Chapter 2 that it is the syntactic structure of a QP, not its semantic property of presuppositionality, that determines the scope of a QP. Furthermore, we also suggest that the other sources of presuppositionality in NP-FQs can be traced to syntactic factors (Section 3.3).

3.2 Positions of Strong and Weak Quantifiers

3.2.1 Strong and Weak Quantifiers in English

In the past literature, it has been observed that *strong* and *weak* quantifiers exhibit different syntactic distributions in QPs:[1]

(1) Strong quantifiers:
  a. * the every boy
  b. * the each boy
  c. * the all boys
  d. * the both boys (Borer (2005))

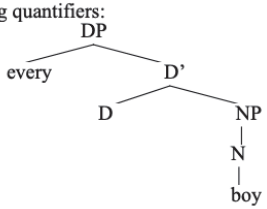
(2) Weak quantifiers:
  a. the three stooges
  b. the few volunteers
  c. the many medals (on the table) (ibid.)

As shown in (1) and (2), the definite article *the* may precede a weak quantifier ((2)), but not a strong quantifier ((1)). It has been proposed by Hudson (1989), Giusti (1991), Muromatsu (1998), and Borer (2005) that this difference comes from the syntactic difference of these quantifiers within a QP. Although these proposals differ slightly from each other in their

[1] For the definitions of the terms *strong* and *weak*, see Chapter 1.

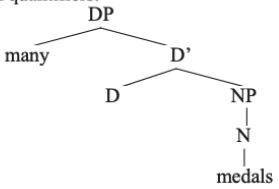
details, the basic idea common to these proposals is illustrated in (3) and (4):

(3) Strong quantifiers:

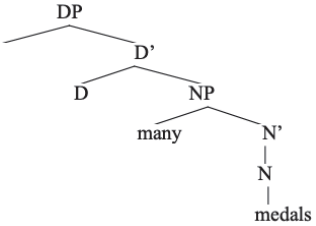


(4) Weak quantifiers:

a.



b.



While a strong quantifier may only appear in [Spec, DP], a weak quantifier may appear in either of [Spec, DP] and [Spec, NP]. If it is assumed that the definite article is located in D, we may account for the ungrammaticality of (1) by saying that strong quantifiers may only appear in [Spec, DP]. On the other hand, weak quantifiers such as *many* may appear to the right of the definite article since they may appear in [Spec, NP].

3.2.2 Strong and Weak Quantifiers in Japanese

This difference between strong and weak quantifiers in English seems to be also true of Japanese quantifiers. Consider the following examples:

(5) a. *At an audition for pop singers,*
Sono-sukauto-wa *san-nin-no kireina zyosei-o* rekoodingu-ni sasot-ta
that-talent.scout-Top 3-Cl-Gen beautiful singer-Acc recording-Dat invite-Past

'The talent scout invited three beautiful women to a recording session.'

b. Watasi-wa *san-dai-no akai kuruma-o* mokugekisita
I-Top 3-Cl-Gen red car-Acc witness-Past
'I witnessed three red cars.'

(6) a. *At an audition for pop singers,*
Sono-sukauto-wa *kireina san-nin-no zyosei-o* rekoodingu-ni sasot-ta
that-talent.scout-Top beautiful 3-Cl-Gen woman-Acc recording-Dat invite-Past
'The talent scout invited three beautiful women to a recording session.'

b. Watasi-wa *akai san-dai-no kuruma-o* mokugekisita
I-Top red 3-Cl-Gen car-Acc witness-Past
'I witnessed three red cars.'

In (5) the prenominal weak quantifiers *san-nin-no* ((5a)) and *san-dai-no* ((5b)) are followed by an Adj (the nominal adjective *kireina* and the adjective *akai*), while their order is reversed in (6). What is interesting is that while the reverse order of the quantifier and the Adj is possible with weak quantifiers, a strong quantifier resists placing an Adj to its left:

(7) a. *At an audition for pop singers,*
Sono-sukauto-wa {*subete-no/hotondo-no/hansuu-no/san-bun-no-iti-no*}
that-talent.scout-Top every-Gen/most-Gen/half-Gen/one.third-Gen
kireina zyosei-o sasot-ta
beautiful woman-Acc invite-Past
'The talent scout invited all/most/half /one third of the beautiful women.'

b. Hanako-wa {*subete-no/hotondo-no/hansuu-no/san-bun-no-iti-no*} *akai*
Hanako-Top every-Gen/most-Gen/half-Gen/one.third-Gen red
kuruma-o mokugekisi-ta
car-Acc witness-Past
'Hanako witnessed all/most/half/one third of the red cars.'

(8) a. *At an audition for pop singers,*
* Sono-sukauto-wa *kireina* {*subete-no/hotondo-no/hansuu-no/*
that-talent.scout-Top beautiful every-Gen/most-Gen/half-Gen/
san-bun-no-iti-no} *zyosei-o* sasot-ta
one.third-Gen woman-Acc invite-Past

b. * Hanako-wa *akai* {*subete-no/hotondo-no/hansuu-no/san-bun-no-iti-no*}
Hanako-Top red every-Gen/most-Gen/half-Gen/one.third-Gen
kuruma-o mokugekisi-ta
car-Acc witness-Past

This difference is accounted for if strong quantifiers in Japanese are in [Spec, DP] while weak quantifier may be in either [Spec, DP] or [Spec, NP]. If we assume that an Adj may appear in a periphery position of the NP projection, we can account for the difference in the grammaticality of the Adj-Quantifier order between (6) and (8) by saying that the weak quantifier in (6) may appear in [Spec, NP] while the strong quantifier in (8) may only appear in [Spec, DP].

Thus the difference in the syntactic position between strong and weak quantifiers is supported by the above facts.

3.2.3 An Apparent Counterexample

Before proceeding, let us discuss one potential counterexample to the analysis in the preceding section. In the preceding section we have suggested that a strong quantifier such as *subete-no* 'every' and *hotondo-no* 'most' may not be preceded by an Adj, as in (8), since a quantifier must be in [Spec, DP]. However, placing a genitive-marked noun modifier such as *170-senti-izyoo-no* '170 centimeters or more' in front of a strong prenominal quantifier does not seem to lead to ungrammaticality:[2]

(9) *At an audition for pop singers,*
Sono-purodakusyon-wa *170-senti-izyoo-no* *{subete-no/hotondo-no}*
that-talent.agency-Top 170-centimeters-or.more-Gen every-Gen/most-Gen
syoozyo-o sasot-ta
girl-Acc invite-Past
'That talent agency invited all/most of the girls who were 170 centimeters tall or taller.'

Thus if a strong quantifier is in [Spec, DP], then these examples tell us that a quantifier in [Spec, DP] may be preceded by a fronted modifier, contrary to our observation in the preceding section.

Note, however, that the modifier in (9) is quite distinct from the Adj's in their morphological and semantic properties. Firstly, the modifier *170-senti-izyoo-no* is morphologically distinct from Adj's in that they are marked with the genitive marker *no*, while Adj's end with *–i* or *–na*, respectively. Indeed, other instances of modifiers ending with *–no* may precede a strong quantifier:

(10) a. 170-senti-izyoo-no subete-no syoozyo
170-centimeter-or.more-Gen every-Gen girl
'all of the girls who are 170 centimeters tall or taller'

[2] I thank Koichi Takezawa (personal communication) for bringing this fact to my notice.

b. miginage-no hotondo-no toosyu
right.handed-Gen most-Gen pitcher
'most of the right-handed pitchers'
c. sono daigaku-no hansuu-no gakusei
that university-Gen half-Gen student
'half of the students at the university'

(11) a. * kireina subete-no syoozyo
beautiful every-Gen girl
'all of the girls taller than 170 centimeters'
b. * wakai hotondo-no toosyu
young most-Gen pitcher
'most of the right-handed pitchers'
c. * kasikoi hansuu-no gakusei
bright half-Gen student
'half of the students at the university'

Secondly, genitive-marked modifiers have a semantic property quite distinct from that of Adj's. Note that Adj's denote properties of the head noun. On the other hand, the genitive modifier *170-senti-izyoo-no* in (9), for example, denote a domain of objects that the quantifier ranges over. Consider (12) with the quantifier *hotondo-no*:

(12) *At an audition for pop singers,*
Sono-purodakusyon-wa *170-senti-izyoo-no* *hotondo-no syoozyo-o*
that-talent-agency-Top 170-centimeters-or.more-Gen most-Gen girl-Acc
sasot-ta
invite-Past
'That talent agency invited all/most girls who were 170 centimeters tall or taller.'

In the QP *170-senti-izyoo-no hotondo-no syoozyo-o*, for example, the genitive modifier *170-senti-izyoo-no* constitutes part of the restrictive clause for the quantifier *hotondo-no.* In other words, it specifies the domain of objects that *hotondo-no* ranges over. Thus (12) means that the talent agency invited most of the girls who were 170 centimeters tall or taller. It does not mean that the talent agency invited most of the girls and that these girls were 170 centimeters tall or taller. Here the genitive modifier denotes the property of all the members in the superset, not that of the members picked out by the quantifier *hotondo-no*. The same applies to other genitive modifiers preceding a strong quantifier:

(13) a. Sono-tiimu-de-wa, *miginage-no hotondo-no toosyu-ga* senpatu-o
that-team-in-Top right.hander-Gen most-Gen pitcher-Nom starter-Acc
kiboosite i-ru
hope be-Pres
'In this team, most right-handed pitchers want to be starters.'

b. Kono-kaisya-wa *20-sai-dai-no hotondo-no syain-ga* kekkonsite iru
this-company-Top the.twenties-Gen most-Gen worker-Nom marry be-Pres
'In this company most workers in their twenties are married.'

Thus these considerations suggest that genitive modifiers constitute a category quite distinct from that of Adj's. If so, it is not unreasonable to say that genitive modifiers appear in a syntactic position distinct from that of Adj's.

3.3 Quantifier Positions and Presuppositionality

The preceding section has reviewed the past proposals on the distributional difference between strong and weak quantifiers in QPs. Since the distinction between these two groups of quantifiers has to do with the presuppositionality of a QP, in that strong quantifiers necessarily yield a presuppositional reading of QPs while weak quantifiers may provide either a presuppositional or a nonpresuppositional reading to QPs, it can also be claimed that the difference in the syntactic positions of a quantifier somehow correlates with the presuppositionality of a QP containing it. Indeed the following generalization seems to hold:

(14) A quantifier in [Spec, DP] yields a presuppositional interpretation.

This generalization may be supported by the following considerations. First, a strong quantifier, which is necessarily partitive, may only appear in [Spec, DP], as we have seen in the previous section. This implies that [Spec, DP] is a locus for the presuppositionality of the QP. Secondly, it may also be supported by the following fact:

(15) a. Many students are absent today.
b. My many students are absent today. (Homma (2011))

The QP *many students* in (15a) is known to be ambiguous between the relevant readings. It can either refer to many students in a set of students that the speaker teaches (the partitive reading of *many*, and the presuppositional reading of the QP), or to students newly introduced in the discourse whose number is quite large (the cardinal reading of *many*, and the nonpresuppositional reading of the QP). On the other hand, *many* in (15b) has only a cardinal reading. The QP *my many students* does not refer to many students out of a particular set of students, but implies that there are many students in the speaker's class and all these students

in that class were absent from the class. In other words, if the quantifier *many* is forced to appear in [Spec, NP] as in (15b), it may only have a cardinal interpretation. On the other hand, if *many* is not forced to appear in [Spec, NP], as in (15a), it may have a partitive reading so that the QP *many students* may be interpreted to be presuppositional. In other words, this means that, given the two positions for a prenominal quantifier, *many* has a partitive reading if it is in [Spec, DP]. Thus this fact gives support to the generalization in (14).

Now that we have found that (14) can be maintained, we may ask if the generalization in (16) can also be maintained.

(16) A quantifier in [Spec, NP] yields a nonpresuppositional interpretation.

Again the facts in (15) seem to support this generalization. As we have already seen, the quantifier *many* in (15b) is forced to appear in [Spec, NP] and has only a cardinal interpretation. Thus we may maintain that a quantifier in [Spec, NP] yields a cardinal interpretation. Given that the nonpresuppositional reading of *many students* is based on the cardinal reading of *many*, we can also maintain that *many* in [Spec, NP] is the source of the nonpresuppositional reading of *many students*.

Furthermore, the following two facts tell us that the generalization in (16) may be further generalized to (17):

(17) Lack of a quantifier in [Spec, DP] yields a nonpresuppositional interpretation.

The facts in (15) can also be captured by this generalization in (17): the presence of a quantifier in [Spec, NP] means the lack of it in [Spec, DP]. Generalization (17) may also be supported by the interpretive property of existential B-NPs in English and Japanese.

(18) (= (20) of Chapter 2)
Several children entered the museum.
a. I saw *boys* at the movies.
b. I saw *some boys* at the movies. (Enç (1991), Homma et al. (1992))

(19) (= (27) of Chapter 2)
Ten men took a witness stand in a court, and
a. *syoonin-ga* hontoo-no koto-o it-ta
witness-Nom true-Gen thing-Acc say-Past
'Witnesses told the truth.'
[*presuppositional, nonpresuppositional]
b. *nan-nin-ka-no syoonin-ga* hontoo-no koto-o it-ta
some-Gen witness-Nom true-Gen thing-Acc say-Past

‘Some witnesses told the truth.’
[presuppositional, nonpresuppositional] (Homma et al. (1992))

As we reviewed in Chapter 2, existential B-NPs in both English and Japanese obligatorily have a nonpresuppositional reading, as in (18a) and (19a), in contrast to QPs with an overt prenominal quantifier in (18b) and (19b). Thus these facts support the generalization in (17) since B-NPs lack a quantifier and obligatorily have a nonpresuppositional interpretation.

While there are pieces of evidence in favor of the generalization in (17), we also find counterevidence to this generalization. The first piece of counterevidence has to do with the interpretation of a QP with the order Adj-Quantifier. Consider the examples in (5) and (6) again:

(20) (= (5))
a. *At an audition for pop singers,*
Sono-sukauto-wa *san-nin-no kireina zyosei-o* rekoodingu-ni sasot-ta
that-talent.scout-Top 3-Cl-Gen beautiful woman-Acc recording-Dat invite-Past
‘The talent scout invited three beautiful singers to a recording session.’
b. Watasi-wa *san-dai-no akai kuruma-o* mokugekisita
I-Top 3-Cl-Gen red car-Acc witness-Past
‘I witnessed three red cars.’

(21) (= (6))
a. *At an audition for pop singers,*
Sono-sukauto -wa *kireina san-nin-no zyosei-o* rekoodingu-ni sasot-ta
that-talent.scout-Top beautiful 3-Cl-Gen woman-Acc recording -Dat invite-Past
‘The talent scout invited three beautiful singers to a recording session.’
b. Watasi-wa *akai san-dai-no kuruma-o* mokugekisita
I-Top red 3-Cl-Gen car-Acc witness-Past
‘I witnessed three red cars.’

The QPs in the examples in (20) may either have a presuppositional or a nonpresuppositional reading. The QP *san-nin-no kireina zyosei-o* may refer either to three of the set of beautiful women from the preceding discourse (the presuppositional reading) or to three beautiful women that are newly introduced into the discourse (the nonpresuppositional reading). On the other hand, the QPs in the examples in (21), where the Adj is fronted to the left of the quantifier, sound somewhat different. The dominant reading of the object QP *kireina san-nin-no zyosei-o* in (21a), for example, seems to be a nonpresuppositional one, and lacks the presuppositional reading that (20a) has: it refers to three beautiful women newly introduced into the discourse, but it does not seem to refer to three of the set of beautiful

women from the preceding discourse. On a closer examination, however, we can detect a presuppositional reading of the QPs in (21) that is somewhat different from that in (20). As shown in (22), a QP with the internal order Adj-Quantifier-Noun is not incompatible with the phrase X-*no-uti-no* 'out of X,' which is intended to refer to the set of X's and to serve as the superset for the QP to range over.[3]

(22) *At an audition for pop singers,*
Sono-sukauto-wa *go-nin-no uti kireina san-nin-no zyosei-o* rekoodingu-ni
that-talent.scout-Top 5-Cl-Gen out.of beautiful 3-Cl-Gen woman-Acc recording-Dat
sasot-ta
invite-Past
'Out of the five, the talent scout invited three beautiful women to a recording session.'

In this example, the QP *kirei-na san-nin-no zyosei-o* is understood to refer to three of the particular set of women in the discourse and to convey that these three women are beautiful in contrast to the other women who do not have this property. In the preceding section, we accounted for the distributional difference between strong and weak quantifiers with respect to the relative order with modifiers by the assumption that only weak quantifiers may be in [Spec, NP]: only weak quantifiers, but not strong quantifiers, may follow an Adj since they may be in [Spec, NP]. If this analysis is on the right track, (22) is regarded as a case where a QP has a presuppositional reading despite its quantifier's location in [Spec, NP].[4]

The second case where a QP is presuppositional despite the lack of a quantifier in [Spec, DP] is provided by the interpretation of NP-FQs, which we discussed in Chapter 2. The first case of presuppositional NP-FQs without a quantifier in [Spec, DP] is the NP-FQ with a strong quantifier, as we discussed in Chapter 2:

(23) (= (36) of Chapter 2)
Gakusei-tati-ga {*subete/hotondo/zen'in*} ki-ta
student-Pl-Nom all/most/everyone come-Past
'All/Most of the students came.'

The subject NP-FQ in (23) is necessarily presuppositional because of the presence of a strong quantifier as an FQ. Secondly, NP-FQs with a weak FQ may have a presuppositional reading, as we pointed out in Chapter 2:

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[3] This was pointed out by Nobuhiro Kaga and Tomokazu Takehisa (personal communication).

[4] In the preceding discussion in the text, we do not mean to say that the NP-peripheral position is not the only position for an Adj. We assume that an Adj may also appear within the projection of NP, in a position lower than [Spec, NP]. This allows the weak quantifier in [Spec, NP] to precede an Adj, and can account for the nonpresuppositional reading of the Q-Adj order.

(24) (= (41) of Chapter 2)

a. *Kinoo ki-ta kyaku-ga san-nin* kyoo kaet-ta
yesterday come-Past guests 3-Cl today return-Past
'Three of the guests who came yesterday left today'

b. Boku-wa *sensei-ga suisensi-ta hon-o san-satu* yon-da
I-Top teacher-Nom recommend-Past book-Acc 3-Cl read-Past
'I read three of the books that the teacher recommended'

The QPs *kinoo kita kyaku-ga san-nin* and *sensei-ga suisensi-ta hon-o san-satu* are understood to be presuppositional in the sense that the former refers to three guests in the set of guests who came yesterday, and the latter to three of the set of books that the teacher recommended.

To sum up, the above discussion leads us to the following generalizations. While the generalization in (14) can be maintained, the generalization in (17) must be modified as (26):

(25) (= (14))
A quantifier in [Spec, DP] yields a presuppositional interpretation.

(26) Lack of a quantifier in [Spec, DP] yields either a nonpresuppositional or a presuppositional interpretation.

In other words, (25) and (26) imply that there are two sources for the presuppositional interpretation of a QP, whereas the nonpresuppositional interpretation of a QP arises from the lack of a quantifier in [Spec, DP]. Thus (25) and (26) are paraphrased as follows:

(27) The presuppositional interpretation of a QP comes from a quantifier's being in [Spec, DP] or other sources.

(28) The nonpresuppositional interpretation of a QP comes from the lack of a quantifier in [Spec, DP].

Thus although there is a one-to-one correspondence between the distinction between strong and weak quantifiers on one hand and the syntactic positions of a quantifier in a QP on the other, the correlation between the presuppositionality of QPs and the quantifier position in a QP is not a perfect one.

3.4 Relevance of QP Structure to Scope

3.4.1 Capturing the Generalizations in Chapter 2

In Chapter 2 we reached the following generalizations.

(29) (= (67) of Chapter 2)
   a. NP-FQs cannot take wide scope over a subject or an opacity-inducing predicate, irrespective of their (non)presuppositionality.
   b. B-NPs cannot take wide scope.
   c. Q-NPs cannot take wide scope if the quantifier is not in the leftmost position.
   d. Q-NPs cannot take wide scope if they are nonpresuppositional.
   e. Q-NPs and NP-FQs, but not B-NPs and FQ-NPs, can take wide scope over negation.

(29a) and (29c) have led us to suggest the relevance of the presence of a quantifier in the leftmost position in a QP to the scope property of that QP. Our discussion in the preceding sections on the quantifier position in a QP suggests that this leftmost position is [Spec, DP]. Thus, if we assume the rule of QR, as we did in Chapter 2, the condition on QR may be stated as follows:

(30) QR applies only to those QPs with a quantifier in [Spec, DP].

If we assume this, we can correctly capture the narrow scope property of NP-FQs and Q-NPs with the internal order Adj-Quantifier. Consider again:

(31) (= (42) of Chapter 2)
   a. Yon-syurui-no miyage-o *kinoo* *ki-ta* *kyaku-ga* *san-nin* kat-ta
      4-kind-Gen souvenir-Acc yesterday come-Past guest-Nom 3-Cl buy-Past
      'Three guests who came yesterday bought four kinds of souvenir'
      [unambiguous: *3 > 4, 4 > 3]
   b. *Sensei-ga* *suisensi-ta* *hon-o* *san-satu* daremo-ga yon-da
      teacher-Nom recommend-Past book-Acc 3-Cl everyone-Nom read-Past
      'Everyone read three books that the teacher recommended.'
      [unambiguous: ∀ > 3, *3 > ∀]

(32) (= (60) of Chapter 2)
   a. *At an audition for pop singers,*
      Kireina *hutari-no syoozyo-o subete-no geinoopurodakusyon-ga* sasot-ta
      beautiful 2-Cl-Gen girl-Acc every-Gen talent.agency-Nom invite-Past
      Lit. 'Two beautiful girls, all the talent agencies invited.'
      [unambiguous: ∀ > 2、*2 > ∀]
   b. *Akai san-dai-no kuruma-o daremo-ga* mokugekisi-ta
      red 3-Cl-gen car-Acc everyone-Nom witness-Past

Lit. 'Three red cars, everyone witnessed.'
[unambiguous: ∀ > 3, *3 > ∀]

As we have discussed, NP-FQs may not take wide scope over another QP irrespective of their presuppositionality. We can now capture this fact by saying that NP-FQs do not undergo QR since they obviously lack a quantifier in [Spec, DP].

The narrow scope of a QP with a fronted Adj, as in (32), can also be captured. The preceding section has suggested that a quantifier preceded by an Adj is in [Spec, NP]. If so, the QPs in (32) do not meet the condition for the application of QR: they cannot undergo QR since they lack a quantifier in [Spec, DP]. Note that the narrow scope property of QPs with a fronted Adj cannot be captured if the applicability of QR is determined by presuppositionality since QPs with a fronted Adj may have a presuppositional interpretation, as we have discussed above. Hence we cannot say that the presuppositionality is a decisive factor for determination of the scope of QPs with a fronted Adj.

The generalization in (29b) can also be captured. B-NPs can only take narrow scope since they lack a quantifier in [Spec, DP] and hence cannot undergo QR.

The generalization in (29d), in contrast, is apparently difficult to capture in syntactic terms since it is stated in semantic terms.

(29) d. Q-NPs cannot take wide scope if they are nonpresuppositional.

The relevant examples are those involving a QP with a prenominal quantifier that has only a nonpresuppositional interpretation.

(33) (= (58) of Chapter 2)
a. *Mit-tu-no ringo-o* daremo-ga motte iru
3-Cl-Gen apple-Acc everyone-Nom have be-Pres
'Everyone has three apples.'
[unambiguous: ∀ > 3, *3 > ∀]
b. *Ni-hiki-no kabutomusi-o* daremo-ga katte i-ru
2-Cl-Gen beetle-Acc everyone-Nom keep be-Pres
'Everyone has two beetles as pets.'
[unambiguous: ∀ > 2, *2 > ∀]

In these examples, the scrambled object QP is forced to have a nonpresuppositional reading only, probably due to the semantic property of the verbs *motte iru* and *katte iru*, and the QP is unable to take wide scope over the subject.

However, our discussion in the preceding sections now enables us to capture the generalization in (29d) in syntactic terms. We have suggested that nonpresuppositional QPs

are characterized in syntactic terms as those QPs that lack a quantifier in [Spec, DP]. This means that nonpresuppositional QPs cannot meet the requirement for the application of QR and hence may not take scope over another QP. Thus, we have succeeded in capturing the generalizations in (29a-d) consistently in syntactic terms.

What about the generalization in (29e)? The observation in Chapter 2 on the scope of an object QP and negation tells us that the scope of an object QP and negation needs to be accounted for with a mechanism different from the one needed for an account of the scope relation between QPs. We turn to this task in Chapter 5, where we propose a syntactic mechanism that has to do with the presuppositionality of object QPs.

3.4.2 The Role of [Spec, DP] in Other Movement Operations

In the preceding section we have proposed the following constraint on the application of QR:

(34) QR applies to only those QPs with a quantifier in [Spec, DP].

This is not an ad hoc requirement on QR, but can be derived from a grammatical principle that guides syntactic movement of DPs. Whatever that principle may be, the significance of the presence of a relevant element in [Spec, DP] for movement is strongly suggested by the following facts of overt movement in English:[5]

(35) WH-movement:
  a. *How good a student* is John?
  b. * *A how good student* is John?

(36) Degree-phrase inversion:
  a. *So good a student* is John that everyone in the class admires him.
  b. * *A so good student* is John that everyone in the class admires him.

These examples tell us that an interrogative DP ((35)) and a DP containing a degree phrase ((36)) must have an interrogative AP (*how good*) and a degree AP (*so good*), respectively, moved into the leftmost position in DP, [Spec, DP], as illustrated in (37a). If the relevant AP remains in its original position as in (35b) and (36b), the movement cannot apply to the DP.

(37) a. $[_{DP}\ [_{AP}$ how/so good$]_i\ [_{NP}$ a t_i student$]]$ (for (35a) and (36a))
  b. $[_{DP}\ \ [_{NP}$ a $[_{AP}$ how/so good$]_i$ student$]]$ (for (35b) and (36b))

[5] The inversion in DP is discussed widely in the literature. See Abney (1987), Hendrick (1990), and Troseth (2009), for example.

Thus the condition on QR in (34) is not an ad hoc one at all, since the same requirement is shared by other sorts of syntactic movement. Rather, the facts in (35) and (36) justify our approach to QP scope. If the scope of QPs is subject to the same requirement that constrains overt movement such as WH-movement and degree-phrase movement, it is strongly suggested that the scope of QPs is determined by a syntactic movement of some sort.

3.5 What are the Other Sources of Presuppositionality?

In the preceding sections we have shown that the presuppositionality of QPs may come from multiple sources. One source of presuppositionality is a quantifier in [Spec, DP]: a QP with a quantifier in its [Spec, DP] has a presuppositional reading. We have also shown that a QP without a quantifier in its [Spec, DP] may have a presuppositional reading. This is the case with NP-FQs and QPs with a fronted Adj:

(38) (= (24))

a. *Kinoo ki-ta kyaku-ga san-nin* kyoo kaet-ta
yesterday come-Past guests 3-Cl today return-Past
'Three of the guests who came yesterday left today.'

b. Boku-wa *sensei-ga suisensi-ta hon-o san-satu* yon-da
I-Top teacher-Nom recommend-Past book-Acc 3-Cl read-Past
'I read three of the books that the teacher recommended.'

(39) (= (22))

At an audition for pop singers,
Sono-sukauto-wa *go-nin-no uti kireina san-nin-no zyosei-o* rekoodingu-ni
that-talent.scout-Top 5-Cl-Gen out.of beautiful 3-Cl-Gen singer-Acc recording-Dat
sasot-ta
invite-Past
'Out of the five, the talent scout invited three beautiful women to a recording session.'

Thus we are faced with a question: if it is not the presence of a quantifier in [Spec, DP] that yields the presuppositional interpretation of these QPs in (38) and (39), what is the source of their presuppositionality? In this section we attempt to present a tentative and sketchy analysis, in which we suggest that the other source of presuppositionality is a syntactic factor.

3.5.1 On the Presuppositionality of NP-FQs

Firstly, let us consider where the presuppositionality of NP-FQs comes from. The source of the presuppositionality of NP-FQs with a strong quantifier is quite straightforward. Since a strong quantifier necessarily has a partitive interpretation only, the presence of a strong

quantifier forces the presuppositional reading of NP-FQs. What about the presuppositionality of NP-FQs with a weak (numeral) quantifier? Since we have argued that the syntactic position of a prenominal weak quantifier is a source of the presuppositionality of QPs, we may ask whether the presuppositionality of NP-FQs is also affected by syntactic factors. One factor, suggested by Ishii (1997, 1998), that determines the presuppositionality of weak NP-FQs may be called a semantic one. In Chapter 2 we showed that an addition of a relative clause to a noun can provide an NP-FQ with a presuppositional reading:

(40) (= (38))
   a. *Kinoo ki-ta kyaku-ga san-nin* kyoo kaet-ta
      yesterday come-Past guests 3-Cl today return-Past
      'Three of the guests who came yesterday left today.'
   b. Boku-wa *sensei-ga suisensi-ta hon-o san-satu* yon-da
      I-Top teacher-Nom recommend-Past book-Acc 3-Cl read-Past
      'I read three of the books that the teacher recommended.'

As Ishii (1997, 1998) suggest, it is not the simple presence of a relative clause that yields presuppositionality. The relative clause must denote a specific event. While the relative clauses in (40) denote a specific event, the relative clause *kodomo-ga yorokobu* in (41) denotes a generic property, not a specific event, and accordingly the NP-FQ is only interpreted as nonpresuppositional (Ishii (1997, 1998)):

(41) John-ga Mary-ni *kodomo-ga yorokobu hon-o san-satu* age-ta
   John-Nom Mary-to child-Nom like book-Acc 3-Cl give-Past
   'John gave three books that children like to Mary.'
   [*presuppositional, nonpresuppositional]

In addition, Ishii also shows that the choice of the head noun affects the availability of a presuppositional reading. He points out the noun *tooboohan* 'fugitive' as one such case:

(42) Keisatu-ga *tooboohan-o san-nin* sooko-no naka-de mituke-ta
   police-Nom fugitive-Acc 3-Cl warehouse-Gen in find-Past
   'The police found three fugitives in the warehouse.'
   [presuppositional, nonpresuppositional] (Ishii (1998))

Although the above factors are semantic in nature since it has to do with the eventuality of the relative clause and the head noun contained in NP-FQs, we also find at least two syntactic factors at work in the determination of presuppositionality of weak NP-FQs. Firstly, Ishii (1997, 1998) point out that the ambiguity of a weak NP-FQ with respect to

presuppositionality disappears if the host NP is fronted to a VP-periphery position and separated from the FQ:

(43) a. John-ga isoide *urenokotta hon-o san-satu* kaes-ita (koto)
John-Nom quickly left.unsold book-Acc 3-Cl return-Past (fact)
'John quickly returned three books that were left unsold.' (weak reading)
'John quickly returned three of the books that were left unsold.' (strong reading)
[ambiguous: presuppositional nonpresuppositional]
b. John-ga *urenokotta hon-o* isoide *san-satu* kaes-ita (koto)
John-Nom left.unsold book-Acc quickly 3-Cl return-Past (fact)
[unambiguous: presuppositional *nonpresuppositional]
(Ishii (1997: 95))

The difference in the availability of the nonpresuppositional reading between these two examples can be detected by considering whether the sentence may be followed by the following sentences (cf. Tanaka (2015)):

(44) a. Soositara, moo is-satu-mo nokotte-i-nakat-ta
then any.longer 1-Cl-even left-be-Neg-Past
'Then there were none left.'
b. Sikasi, mada ni-satu nokotte-i-ta
but still 2-Cl left-be-Past
'But there were still two left.'

Example (43a) is compatible with either of (44a) and (44b). Under the nonpresuppositional interpretation of the NP-FQ *urenokot-ta hon-o san-satu*, (43a) can be followed by (44a) since the referents of the nonpresuppositional *urenokot-ta hon-o* do not constitute a subset of a particular set of unsold books and hence it is not incompatible with the situation where no unsold books are left. Under the presuppositional reading of the NP-FQ, on the other hand, (43a) can be followed by (44b). The NP-FQ refers to a subset of a particular set of unsold books, and hence the sentence is compatible with the situation where there are some unsold books.

In contrast, it seems difficult for the sentence in (43b) to be followed by (44a): (43b) is only compatible with the situation where there are some unsold books left unreturned. If so, this fact gives support to Ishii's observation in (43).

Now what the examples in (43) tell us is that the syntactic operation, namely the scrambling of the host NP in (43), affects the presuppositionality of weak NP-FQs. The nonpresuppositional interpretation disappears if the host NP is detached from the FQ. If so, then the interpretive contrast in (43) suggests that a syntactic factor, as well as a semantic

factor of eventuality, is a determinant of the presuppositionality of a weak NP-FQ.

Secondly, the interpretive possibility with respect to presuppositionality is also affected by the relative order of the host NP and the FQ. Consider:

(45) a. Keisatu-wa *tooboohan-o san-nin(-izyoo)* taihosi-ta
police-Top fugitive-Acc 3-Cl(-or.more) arrest-Past
'The police arrested three fugitive criminals.'
[ambiguous: presuppositional, nonpresuppositional]

b. Keisatu-wa *san-nin(-izyoo) tooboohan-o* taihosi-ta
police-Top 3-Cl(-or.more) fugitive-Acc arrest-Past
[unambiguous: *presuppositional, nonpresuppositional]

The example in (45b) is minimally different from (45a) in that the order of the NP and the FQ is reversed. What is noteworthy is that (45b) lacks the presuppositional reading present in (45a) (Ishii (1997, 1998)). The object NP-FQ in (45b) cannot be interpreted to refer to a subset of a particular set of fugitive criminals established in the discourse: it only refers to three fugitive criminals newly introduced in the discourse. That is, the reversed NP-FQ in (45b) may only have a nonpresuppositional interpretation. This fact also tells us that a syntactic factor is involved in the determination of the presuppositionality of QPs since the change in the word order, which probably involves a syntactic operation on either of the host NP or the FQ, affects the presuppositionality.

Thus far we have argued that the source of presuppositionality of weak NP-FQs can be traced to syntactic factors, although the relevant syntactic factors still remain unidentified. In other words, we have regarded the ambiguity of weak NP-FQs with respect to presuppositionality as a true case of ambiguity that is yielded by the grammar. Contrary to this view on the ambiguity of weak NP-FQs, however, Tanaka (2015) proposes that these NP-FQs only have what corresponds to the nonpresuppositional interpretation and that the apparent presuppositional reading of such weak NP-FQs as those in (43) and (45) is the result of pragmatic inference. Tanaka supports this claim by observing that (46b) is not contradictory:

(46) a. # *Kan-ni haitte-ita doroppu-no-uti-no ni-ko-o* taberu-to, kan-wa
can-Dat was.contained drop-Gen-out.of-Gen 2-Cl-Acc eat-when can-Top
kara-ni nat-ta
empty-Dat become-Past
'When I ate two of the drops that were contained in the can, the can became empty.'

b. *Kan-ni haitte-ita doroppu-o ni-ko* taberu-to, kan-wa kara-ni
can-Dat was.contained drop-Acc 2-Cl-Acc eat-when can-Top empty-Dat

nat-ta
become-Past
'When I ate two drops that were contained in the can, the can became empty.'
(Tanaka (2015))

The example in (46a) involves a partitive QP *doroppu-no-uti-no ni-ko-o*. Since this QP only has a presuppositional reading, referring to a subset of a set of drops, there need to be drops left in the can after the speaker eats two of them. Thus it is contradictory to state that no drops are left in the can. On the other hand, example (46b) is not contradictory, as Tanaka observes, since the NP-FQ *kan-ni haitte-ita doroppu-o ni-ko* is not presuppositional: the two drops that are referred to by the NP-FQ do not necessarily constitute a subset of a set of drops in the can. The same QP may refer to a subset of a set of drops in the can, as the following example shows:

(47) *Kan-ni haitte-ita* *doroppu-o ni-ko* taberu-to, kan-ni-wa mada san-ko
can-Dat was.contained drop-Acc 2-Cl-Acc eat-when can-Dat-Top still 3-Cl
nokotte-ita
be.left-Past
'When I ate two drops that were contained in the can, there were still three left.'

For Tanaka (2015), the "presuppositional" reading of the NP-FQ in (47) is not a result of the true case of ambiguity of the NP-FQ, but a result of pragmatic inference, since (46b) is not contradictory.

If Tanaka's (2015) approach to the "ambiguity" of weak NP-FQs were tenable, one of our arguments against the approach by Diesing (1990, 1992) and Homma et al. (1992) for the narrow scope of NP-FQs would lose its force. The narrow scope property of NP-FQs could be equally accounted for under their approach, since weak NP-FQs would have only a nonpresuppositional reading. However, that part of our argument against Diesing (1990, 1992) and Homma et al. (1992) can be saved by the following argument. We have argued above that the ambiguity of weak NP-FQs disappears if they undergo syntactic operations: scrambling of the host NP and the reversal of the NP and the FQ. Now this disambiguation under a syntactic operation would not be expected by Tanaka's (2015) analysis. If the only reading of a weak NP-FQ with a relative clause is a nonpresuppositional reading and that the presuppositional reading of the cases under consideration were ascribed to pragmatic inference, the NP-FQs in (43a) and (43b) should equally be "ambiguous," since the "presuppositional" reading should always result from the nonpresuppositional reading by pragmatic inference. The lack of the nonpresuppositional reading in (43b), however, tells us that this is not the case. Likewise, the lack of the presuppositional reading in (45b) is also a

problem for Tanaka's (2015) analysis. If the FQ-NP has a nonpresuppositional interpretation, a pragmatic inference should enable it to have a presuppositional interpretation as well. The reason why this reading is absent would not be expected by the pragmatic approach.

Rather, the disambiguation of the presuppositional and the nonpresuppositional reading of an NP-FQ by syntactic operations suggests that these are two distinct interpretations yielded by the grammar.

3.5.2 On the Presuppositionality of QPs with a Fronted Adj

In Section 3.3, we have pointed out that a QP with the internal order Adj-Quantifier, as well as one with the Quantifier-Adj order, may have a presuppositional interpretation. For instance, the object QP in the following sentence refers to three beautiful girls in the set described by *go-nin*:[6]

(48) (= (22))
At an audition for pop singers,
Sono-sukauto-wa *go-nin-no uti* *kireina* *san-nin-no zyosei-o* rekoodingu-ni
that-talent.scout-Top 5-Cl-Gen out.of beautiful 3-Cl-Gen singer-Acc recording-Dat
sasot-ta
invite-Past
'Out of the five, the talent scout invited three beautiful women to a recording session.'

This fact does not accord with the generalization in (16) that a quantifier in [Spec, NP] yields a nonpresuppositional reading since we have considered a prenominal quantifier preceded by an Adj to be located in [Spec, NP]. How can we account for the presuppositional reading of (48)?

We might claim that the presuppositional reading in (48) arises by virtue of the prenominal quantifier *san-nin-no* being situated in [Spec, DP], with the modifier *kireina* located further up in the DP structure, perhaps serving as a non-restrictive modifier of the DP.[7] However, if one were to say that a non-restrictive adjective might appear in front of a quantifier in [Spec, DP], then it would not be clear why a strong quantifier such as *subete-no* and *hotondo-no* prevents an Adj from preceding it, as we have observed above:

(49) (= (8))
a. *At an audition for pop singers,*
* Sono-sukauto-wa *kireina* {*subete-no / hotondo-no / hansuu-no /*
that-talent.scout-Top beautiful every-Gen/most-Gen/half-Gen/

[6] This was pointed out by Nobuhiro Kaga and Tomokazu Takehisa (personal communication).
[7] This possibility was suggested to me by Nobuhiro Kaga (personal communication).

san-bun-no-iti-no} *zyosei-o* sasot-ta
one.third-Gen woman-Acc invite-Past

b. * Hanako-wa *akai* {*subete-no / hotondo-no / hansuu-no / san-bun-no-iti-no*}
Hanako-Top red every-Gen/most-Gen/half-Gen/one.third-Gen
kuruma-o mokugekisi-ta
car-Acc witness-Past

Another conceivable way to account for the presuppositional reading of the QP in (48) is to say that the presuppositional reading in question results from the preposed Adj's being in [Spec, DP] and serving as a "quasi-quantifier," on a par with a prenominal quantifier in [Spec, DP]. Recall that a prenominal quantifier in [Spec, DP] ranges over a set of objects to pick out a subset. For instance, *san-nin-no gakusei-ga* under its presuppositional interpretation picks out three members out of a set of students.

(50) *San-nin-no gakusei-ga* tesuto-o uke-ta
3-Cl-Gen student-Nom test-Acc take-Past
'Three students took a test.'

In other words, the three students in the subset picked out by the QP are put in contrast to the other members of the set who did not take a test. Recall also that on its presuppositional interpretation the DP *kireina san-nin-no zyosei-o* in (48) refers to all the women having the property of *kireina* and conveys that the number of these women is three. That is, the referents of this QP are put in contrast to the other women in the relevant set who do not have the relevant property. Therefore, we may say that the Adj *kireina*, not the numeral quantifier *san-nin-no*, is moved to [Spec, DP] and is given the same function as a quantifier in [Spec, DP], the function of picking out a subset from a superset of entities and putting the members of this subset in contrast to the other entities in the superset. This accounts for the presuppositional reading associated with the QP in (48). It is also consistent with the observation that a strong quantifier resists being preceded by an Adj. Even if a preposed adjective may move into [Spec, DP], it cannot be preposed to the left of an inherently partitive quantifier since a strong quantifier must occupy [Spec, DP].

There is in fact a piece of evidence suggesting the quantifier-like property of preposed Adj's. Yoshihito Dobashi (personal communication) observes that an Adj preposed to the left of a quantifier needs to have a focal stress on it.[8] This is reminiscent of the fact in English that *some* and *many* are stressed in the case of their partitive reading (Postal (1966), Milsark

[8] There seems to be a variation among speakers on this point since not all the informants reported the necessity of focal stress on preposed adjectives/adjectival nouns.

(1977)). This suggests that a preposed Adj may serve as a quantifier.

3.6 Summary of Chapter 3

This chapter has reviewed the past proposals on the correspondence between the strong/weak distinction of quantifiers and the syntactic positions in a QP in which these quantifiers appear. We have also examined the way in which DP structure and presuppositionality correspond to each other, and concluded with the following generalizations:

(51) The presuppositional interpretation of a QP comes from a quantifier's being in [Spec, DP] or other sources.

(52) The nonpresuppositional interpretation of a QP comes from the lack of a quantifier in [Spec, DP].

Thus we have shown that the quantifier positions in a QP and the presuppositionality of the QP do not have a one-to-one correspondence. Then we have supported our claim made in Chapter 2 that what determines QP scope is the quantifier position in the QP: a quantifier in [Spec, DP] can give the QP wide scope, while a quantifier in other positions in DP may not. We have also discussed the source of presuppositionality of QPs without a quantifier in [Spec, DP] and suggested that syntactic factors are involved in the determination of presuppositionality of QPs.

Chapter 4
Two Types of QP, Scrambling, and Quantifier Scope

4.1 Introduction

We have found in the preceding chapters that there are two types of QP with respect to their scope-taking properties. The first type of QP, which we henceforth call *Type 1 QPs*, is the one that has a quantifier in [Spec, DP] and has a presuppositional interpretation. This type of QP can take wide scope over another QP. The second type, which we henceforth call *Type 2 QPs*, does not have a quantifier in [Spec, DP]. They either have a quantifier located in [Spec, NP], have one in another position as an FQ, or do not contain one at all. This latter type of QP can only take narrow scope with respect to another QP.

This chapter is aimed at accounting for the difference in the scope property of these two types of QP in terms of the difference in the kinds of syntactic operation that they undergo. Specifically, we point out that these two types of QP undergo different modes of scrambling in Japanese and that the mode of scrambling that they undergo determines their scope. In Section 4.2 we review Miyagawa's (2010) analysis of scrambling in Japanese as a movement into [Spec, TP] by the topic feature on T, and point out, by modifying Miyagawa's proposal, that not all DPs can be the goal targeted by the topic feature on T. Crucially we point out that Type 1 QPs can move into [Spec, TP] via scrambling while Type 2 QPs must undergo scrambling to a different position. Section 4.3 argues that it is the syntactic structure of a QP, but not the semantics of it, that allows the QP to move to [Spec, TP] by the topic feature. In Section 4.4 we propose to account for the scope property of the two types of QP in terms of the difference in their compatibility with the topic feature and hence in the mode of scrambling. In Section 4.5 we point out cases where movement of the subject to [Spec, TP] takes place only optionally. Section 4.6 compares our analysis with Shibata (2015), who proposes an analysis of the scope of QPs that is similar to ours.

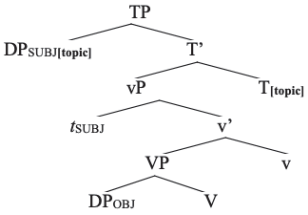
4.2 Scrambling as a Feature-Driven Movement

4.2.1 Miyagawa (2010)

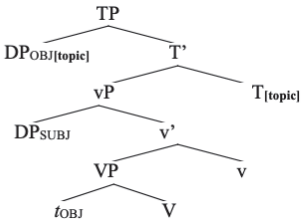
Miyagawa (2010) characterizes the difference in the word order in Japanese as a result of the difference in the choice of the constituent that serves as the *topic* of the sentence. Miyagawa defines the term *topic* as referring to what the sentence is about. In other words, a sentence containing a topic corresponds to what Kuroda (1972-1973) calls a *categorical expression*. Miyagawa also proposes that the choice of the topic DP is made in a syntactic way by the topic feature on the head T. If the subject DP, generated in [Spec, vP], has a corresponding topic feature, it serves as the goal targeted by the topic probe on T and moves into [Spec, TP]. This results in the SOV order. If, on the other hand, the goal is the object DP, it is the object DP that is attracted into [Spec, TP]. This yields the OSV order. These two

processes are illustrated in (1):[1]

(1) a.



b.



What is noteworthy in the structures in (1) is that the subject DP is located in two different positions in these two word orders. While the subject is in [Spec, TP] in the SOV order as in (1a), it is in [Spec, vP] in the OSV order as in (1b). As a piece of evidence for this difference in the position of the subject, Miyagawa (2010) points out the following fact involving the relative scope of the subject and negation:

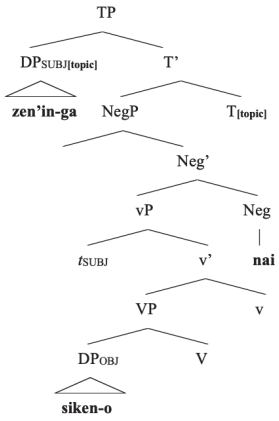
(2) a. *Zen'in-ga* siken-o uke-*nakat*-ta
everyone-Nom test-Acc take-Neg-Past
'Everyone did not take the test.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Siken-o *zen'in-ga* uke-*nakat-ta*
test-Acc everyone-Nom take-Neg-Past
Lit. 'The test, everyone did not take.'
[ambiguous: ∀ > Neg, Neg > ∀] (Miyagawa (2010))

As illustrated in (3), the subject DP in (2a) is moved into [Spec, TP] by the topic probe, over the negation that is assumed to be located between TP and vP.

[1] Miyagawa (2010) also points out cases of movement into [Spec, TP] driven by the focus probe on T. I return to these cases later in Chapter 6.

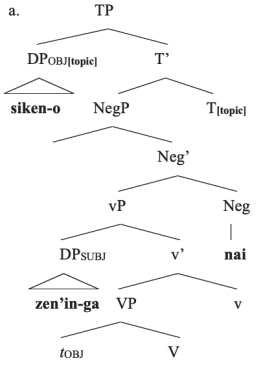
(3)



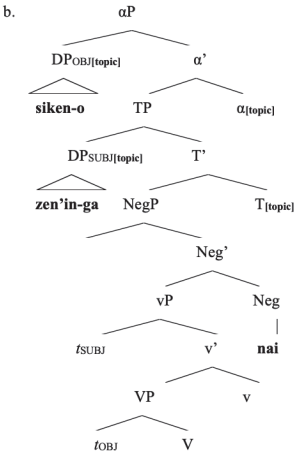
Since the subject *zen'in-ga* moves into [Spec, TP], it is in the position c-commanding the negative *nai*. Thus the subject can only take wide scope over negation in (2a). On the other hand, (2b) has either of the following derivations:

(4)

a.



b.



In derivation (4a), the subject stays in [Spec, vP], and thus is interpreted as taking narrow scope under negation since it is in a position c-commanded by negation. In the other derivation in (4b), the subject moves into [Spec, TP] and the object into [Spec, αP], the projection above TP that has a similar function as TP, as Miyagawa proposes. In this case, the subject *zen'in* c-commands the negation, so that it takes wide scope over negation.

Although Miyagawa (2010) does not provide much convincing empirical evidence for the claim that the relevant feature on T has to do with topicality, there is a piece of evidence in favor of the analysis that the relevant feature that drives a constituent to [Spec, TP] is semantic in nature. As we see below, the choice of the first constituent in a sentence is affected by the information structure of the sentence. Consider the following discourses:

(5) A: Taroo-wa dare-o aisiteiru-no
Taro-Top who-Acc love-Q
'Who does Taro love?'

B: i) Hanako-desu. ??Taroo-ga Hanako-o aisitei-mas-u
Hanako-is Taro-Nom Hanako-Acc love-Pol-Pres
'Hanako. Taro loves Hanako.'

ii) Hanako-desu. Hanako-o Taroo-ga aisitei-mas-u
Hanako-is Hanako-Acc Taro-Nom love-Pol-Pres
Lit. 'Hanako. Hanako, Taro loves.'

(6) A: Dare-ga Hanako-o aisiteiru-no
who-Nom Hanako-Acc love-Q
'Who loves Hanako?'

B: i) Taroo-desu. Taroo-ga Hanako-o aisitei-mas-u
Taro-is Taro-Nom Hanako-Acc love-Pol-Pres
'Taro. Taro loves Hanako.'
ii) Taroo-desu. ??Hanako-o Taroo-ga aisitei-mas-u
Taro-is Hanako-Acc Taro-Nom love-Pol-Pres
Lit. 'Taro. Hanako, Taro loves.'

In the examples in (5) and (6), B's responses all consist of a fragment answer (e.g. *Hanako-desu* '(It's) Hanako.') and a complete sentence that repeats the information provided by the preceding fragment answer. The acceptability of the complete sentence depends on the position of the constituent serving as the repeated answer: the constituent that repeats the answer must be in the sentence-initial position.[2]

We may say that this semantic property of a sentence-initial constituent supports Miyagawa's (2010) analysis that the sentence-initial constituent serves as a topic since the referent of the relevant sentence-initial DP has already appeared in the preceding short answer.[3]

---

[2] One may claim that the unacceptability of (5B-i) may be due to the fact that the first DP *Taroo-ga* is in the Nominative form rather than the topic marked with *wa*. Indeed, the acceptability significantly improves if we replace the nominative *ga* with the topic marker *wa* in (5B-i).

(i) Hanako-desu. Taroo-wa Hanako-o aisitei-mas-u
Hanako-is Taro-Top Hanako-Acc love-Pol-Pres
'Hanako. Taro loves Hanako.'

If this were the source of the degraded acceptability of (5B-i), however, the same factor should degrade the acceptability of (5B-ii) since the second sentence of this response also involves the nominative *ga*. Therefore, what is responsible for the degraded acceptability of (5B-i) must be the position of the object DP: the unscrambled object DP in (5B-i) cannot serve the same purpose that the scrambled object in (5B-ii) does.

[3] A question arises at this point as to what the difference is between the topicality of a sentence-initial constituent and the topicality of the DP with the topic marker *wa*, as in the following example:

(i) a. Taroo-wa Hanako-o aisitei-mas-u
Taro-Top Hanako-Acc love-Pol-Pres
'Taro loves Hanako.'
b. Hanako-wa Taroo-ga aisitei-mas-u
Hanako-Top Taro-Nom love-Pol-Pres
Lit. 'Hanako, Taro loves.'

As has been pointed widely in the literature, a DP with the topic marker *wa* denotes a piece of old information and therefore cannot provide an answer to a question.

(ii) A: Dare-ga Hanako-o aisiteiru-no
who-Nom Hanako-Acc love-Q
'Who loves Hanako?'
B: * Taroo-wa Hanako-o aisitei-mas-u
Taro-Top Hanako-Acc love-Pol-Pres

4.2.2 Not All Instances of Scrambling are Topic-Driven Movement

It must be noted, however, that not all DPs can move into [Spec, TP]. As far as QPs are concerned, scrambling of a particular type of QP does not allow the subject to take narrow scope under negation. The possibility of moving into [Spec, TP] depends on the syntactic position of a quantifier within a scrambled QP. In what follows, we observe that while the Type 1 QP may move into [Spec, TP], the Type 2 QP is not allowed to move into [Spec, TP]. This tells us that of the two types of QP only the Type 1 QP may bear the topic feature while the Type 2 QP may not.

Firstly, if an object Type 1 QP is scrambled, it allows the subject to take scope under negation:

(7) a. Zen'in-ga mit-tu-no tesuto-o uke-nakat-ta
everyone-Nom 3-Cl-Gen test-Acc take-Neg-Past
'Everyone did not take three tests.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Mit-tu-no tesuto-o zen'in-ga uke-nakat-ta
3-Cl-Gen test-Acc everyone-Nom take-Neg-Past
Lit. 'Three tests, everyone did not take.'
[ambiguous: ∀ > Neg, Neg > ∀]

'Taro loves Hanako.'

The difference in question has to do with this property regarding the old/new information. While the topic marker *wa* must carry old information, the sentence-initial constituents in (5) and (6) denote new information, for they constitute an answer to A's question. Importantly, a DP with the topic marker *wa* cannot occur in the environment in (5) or (6) since it has to carry old information.

(iii) A: Taroo-wa dare-o aisiteiru-no
Taro-Top who-Acc love-Q
'Who does Taro love?'
B: Hanako-desu. *Hanako-wa Taroo-ga aisitei-mas-u
Hanako-is Hanako-Top Taro-Nom love-Pol-Pres
Lit. 'Hanako. Hanako, Taro loves.'

(iv) A: Dare-ga Hanako-o aisiteiru-no
who-Nom Hanako-Acc love-Q
'Who loves Hanako?'
B: Taroo-desu. *Taroo-wa Hanako-o aisitei-mas-u
Taro-is Taro-Top Hanako-Acc love-Pol-Pres
'Taro. Taro loves Hanako.'

Thus although we employ the term "topic" for the occurrence of DP-*ga*/*o* in the clause-initial position, it is distinguished from the topic *wa*, both syntactically and semantically. In what follows, we follow Miyagawa (2010) and employ the term *discourse topic* for DP-*wa*.

(8) a. Zen'in-ga huta-tu-no kamoku-o risyuusi-nakat-ta
everyone-Nom 2-Cl-Gen course-Acc take-Neg-Past
'Everyone did not take two courses.'
[unambiguous: ∀> Neg, *Neg > ∀]

b. Huta-tu-no kamoku-o zen'in-ga risyuusi-nakat-ta
2-Cl-Gen course-Acc everyone-Nom take-Neg-Past
Lit. 'Two courses, everyone did not take.'
[ambiguous: ∀ > Neg, Neg > ∀]

The object QPs in (7) and (8) can be Type 1 QPs since they contain a quantifier in the prenominal position. As we see, the subject *zen'in* can take narrow scope under negation if the object QP is scrambled as in (7b) and (8b).

In contrast, scrambling of an object Type 2 QP such as an NP-FQ does not allow the subject to take narrow scope under negation:

(9) a. Zen'in-ga tesuto-o mit-tu uke-nakat-ta
everyone-Nom test-Acc 3-Cl take-Neg-Past
'Everyone did not take three tests.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Tesuto-o mit-tu zen'in-ga uke-nakat-ta
test-Acc 3-Cl everyone-Nom take-Neg-Past
Lit. 'Three tests, everyone did not take.'
[unambiguous: ∀ > Neg, *Neg > ∀]

(10) a. Zen'in-ga kamoku-o huta-tu risyuusi-nakat-ta
everyone-Nom course-Acc 2-Cl take-Neg-Past
'Everyone did not take two courses.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Kamoku-o huta-tu zen'in-ga risyuusi-nakat-ta
course-Acc 2-Cl everyone-Nom take-Neg-Past
Lit. 'Two courses, everyone did not take.'
[unambiguous: ∀ > Neg, *Neg > ∀]

If the narrow scope of the subject signals the presence of the scrambled object DP in [Spec, TP], then the fact that the scrambled object NP-FQ does not allow the subject to take narrow scope under negation, as in (9) and (10), tells us that an NP-FQ may not be the goal of the topic probe on T.

This is also the case with another Type 2 QP, a QP whose quantifier is preceded by an Adj such as the adjective *muzukasii* 'difficult' and the nominal adjective *yuunoo-na*

'competent.' Observe the following contrast between the sentences in (11b) and (13b) on one hand and those in (12b) and (14b) on the other:

(11) a. Zen'in-ga huta-tu-no muzukasii kamoku-o risyuusi-nakat-ta
everyone-Nom 2-Cl-Gen difficult subject-Acc take-Neg-Past
'Everyone did not take two difficult courses.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Huta-tu-no muzukasii kamoku-o zen'in-ga risyuusi-nakat-ta
2-Cl-Gen difficult subject-Acc everyone-Nom take-Neg-Past
Lit. 'Two difficult courses, everyone did not take.'
[ambiguous: ∀ > Neg, Neg > ∀]

(12) a. Zen'in-ga muzukasii huta-tu-no kamoku-o risyuusi-nakat-ta
everyone-Nom difficult 2-Cl-Gen subject-Acc take-Neg-Past
'Everyone did not take two difficult courses.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Muzukasii huta-tu-no kamoku-o zen'in-ga risyuusi-nakat-ta
difficult 2-Cl-Gen subject-Acc everyone-Nom take-Neg-Past
Lit. 'Two difficult courses, everyone did not take.'
[unambiguous: ∀ > Neg, *Neg > ∀]

(13) a. Zen'in-ga san-nin-no yuunoona sensyu-o suisensi-nakat-ta
everyone-Nom 3-Cl-Gen competent athlete-Acc recommend-Neg-Past
'Everyone did not recommend three competent athletes.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. San-nin-no yuunoona sensyu-o zen'in-ga suisensi-nakat-ta
3-Cl-Gen competent athlete-Acc everyone-Nom recommend-Neg-Past
Lit. 'Three competent athletes, everyone did not recommend.'
[ambiguous: ∀ > Neg, Neg > ∀]

(14) a. Zen'in-ga yuunoona san-nin-no sensyu-o suisensi-nakat-ta
everyone-Nom competent 3-Cl-Gen athlete-Acc recommend-Neg-Past
'Everyone did not recommend three competent athletes.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Yuunoona san-nin-no sensyu-o zen'in-ga suisensi-nakat-ta
competent 3-Cl-Gen athlete-Acc everyone-Nom recommend-Neg-Past
Lit. 'Three competent athletes, everyone did not recommend.'
[unambiguous: ∀ > Neg, *Neg > ∀]

As shown in (12b) and (14b), the scrambling of the object does not allow the subject to take narrow scope under negation if the scrambled object has its quantifier preceded by an Adj.

These facts suggest that the choice of the landing site for a scrambled object QP is determined by the syntactic position of a quantifier within the scrambled QP. Under Miyagawa's (2010) proposal that movement into [Spec, TP] is triggered by the topic probe on T, the preceding facts tell us that only those QPs with a quantifier in [Spec, DP] may bear the topic feature which makes the QP the goal of the topic probe on T.

The observation made so far leads us to say that only Type 1 QPs may be the target of the topic probe on T whereas Type 2 QPs may not. Thus the following two derivations are possible for examples (7b), (8b), (11b) and (13b), which involve a scrambled object QP with a prenominal quantifier:[4, 5]

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[4] We assume that in the type of scrambling not triggered by the topic feature a scrambled DP is adjoined to TP.

[5] If the object has the option of undergoing the non-topic scrambling as shown in the text, then a question remains as to why B's response in (Bii) is degraded.

(i) A: Dare-ga Hanako-o aisiteiru-no
who-Nom Hanako-Acc love-Q
'Who loves Hanako?'

B: i) Taroo-desu. Taroo-ga Hanako-o aisitei-mas-u
Taro-is Taro-Nom Hanako-Acc love-Pol-Pres
'Taro. Taro loves Hanako.'
ii) Taroo-desu. ??Hanako-o Taroo-ga aisitei-mas-u
Taro-is Hanako-Acc Taro-Nom love-Pol-Pres
Lit. 'Taro. Hanako, Taro loves.'

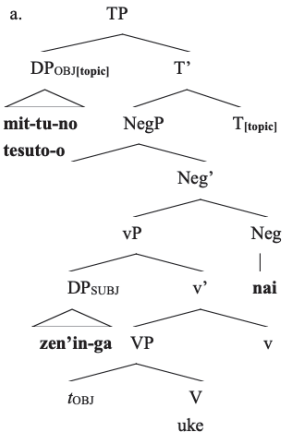
If the object undergoes the non-topic scrambling, the topic is borne by the subject. Then the response in (Bii) should be as acceptable as (Bi). A conceivable explanation would be the following. If the subject can be the topic both in (Bi) and (Bii), then there are two distinct word orders that in principle serve the same purpose of following the fragment answer *Taroo-desu*. But then there would be no reason to choose the switched word order Object-Subject when the canonical word order Subject-Object serves this purpose. In other words, (Bi) is the more economical derivation than (Bii) in the context of this discourse.

This explanation does not apply to the case in (5) in the text, repeated below as (ii). The order Object-Subject is the only possible order to express *Hanako-o* as the topic.

(ii) A: Taroo-wa dare-o aisiteiru-no
Taro-Top who-Acc love-Q
'Who does Taro love?'
B: i) Hanako-desu. ??Taroo-ga Hanako-o aisitei-mas-u
Hanako-is Taro-Nom Hanako-Acc love-Pol-Pres
'Hanako. Taro loves Hanako.'
ii) Hanako-desu. Hanako-o Taroo-ga aisitei-mas-u
Hanako-is Hanako-Acc Taro-Nom love-Pol-Pres
Lit. 'Hanako. Hanako, Taro loves.'

(15)

a.



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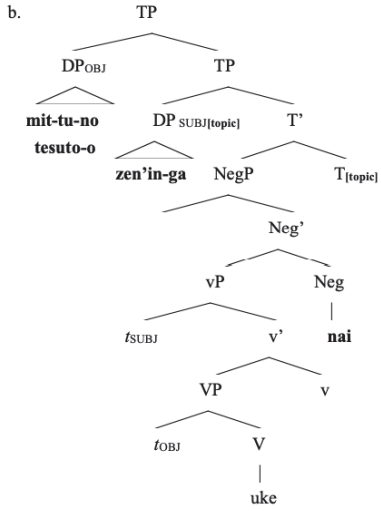
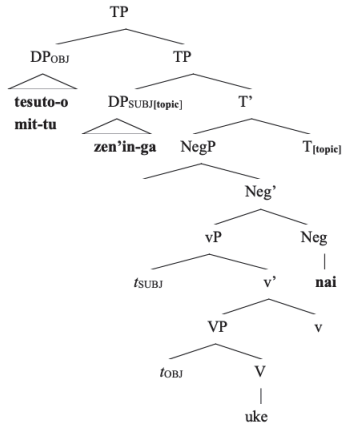
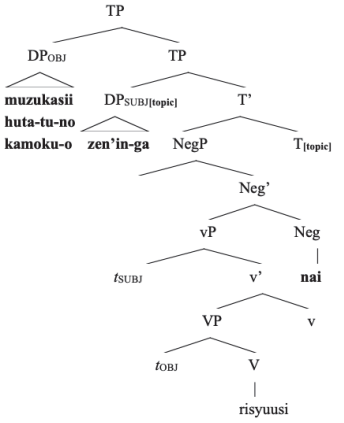


On the other hand, Type 2 QPs such as the NP-FQs in (9) and (10) and those with a prenominal quantifier in a lower position in (12) and (14) cannot be the goal of the topic probe on T, and thus cannot move into [Spec, TP]. If a scrambled object QP cannot move into [Spec, TP], it must be the subject that must be targeted by the topic probe on T to move into [Spec, TP]. The structure of (9b) and (12b), for example, is represented as follows:

(16) a. the structure of (9b):



b. the structure of (12b):



Thus the fact that Type 2 QPs do not allow the subject to take narrow scope under negation can be accounted for by proposing that only Type 1 QPs may be the goal of the topic probe on T.

4.2.3 A Difference in Binding between the Two Types of QP

In the preceding subsection we have observed that only Type 1 QPs may move to [Spec, TP] while Type 2 may not. The scrambling to [Spec, TP] by the topic feature is identified as an instance of A-movement in Miyagawa (2010). Then what type of movement do Type 2 QPs undergo? The following facts suggest that this other type of movement is not an instance of A-movement but an instance of "semantically vacuous" A'-movement (Saito (1985,

1989)).[6]

The distinction between A- and A'-movement can be diagnosed by the possibility of pronominal binding by a moved QP or WH-phrase. As illustrated in (17) and (18), a QP having undergone A-movement may bind a pronoun while a QP cannot do so if it has undergone A'-movement:

(17) A-movement:
Everyone$_i$ seems to *himself*$_i$ to be sick.

(18) A'-movement:
**Who*$_i$ did *his*$_i$ mother love?

The property of scrambling as an A-movement is confirmed by the fact that an object QP scrambled to the left of the subject can bind a pronoun in the subject.[7, 8]

(19) a. * [$_{NP}$ [$_S$ *e* e_i hitome mi-ta] hito]-ga daremo$_i$-o sukininatta
one glance saw person-Nom everyone-Acc fell.in.love
'The person who took at glance at him$_i$ fell in love with everyone$_i$.'

b. Daremo-o$_i$ [$_S$ [$_{NP}$ [$_S$ *e* e_i hitome mita] hito]-ga [$_{VP}$ t_i sukininatta]] (koto)
everyone-Acc one glance saw person-Nom fell.in.love
Lit. 'Everyone$_i$, the person who took a glance at him$_i$ fell in love with.'
(Hoji (1985: 114))

As shown in (19a), it is impossible for the object QP *daremo-o* to bind the empty pronoun e_i in the subject. In (19b), in contrast, the bound variable reading of the pronoun is possible since the scrambled object QP can be in an A-position.

---

[6] The idea that scrambling can either be A- or A'-movement has been pointed out since Mahajan (1990) and Saito (1992).

[7] The A'-property of scrambling is illustrated by the fact that a pronoun in a scrambled constituent exhibit a reconstruction effect:

(i) [$_S$ [$_{NP}$ [$_S$ e_i *e* hitome mita] hito]-o$_k$ daremo$_i$-ga [$_{VP}$ t_k sukininat-ta]]]
one.glance saw person-Acc everyone-Nom fell.in.love
'The person that he$_i$ saw, everyone$_i$ fell in love with.' (Hoji (1985: 114))

[8] I assume that the QP *daremo-ga/o* is an instance of Type 1 QP. Indeed, *daremo-ga/o* resists being modified by an Adj:

(i) *{kirei-na/utukusii} daremo-ga ki-ta
beautiful everyone-Nom come-Past
'Everyone beautiful came.'

Now if the two types of QP undergo different modes of scrambling, as we have argued so far, we expect that the two types of QP behave differently with respect to binding as well. In fact, the following facts tell us that it is only the scrambling of a Type 1 QP that exhibits the property of A-movement with respect to binding: Type 2 QPs cannot bind a pronoun from the scrambled position. Firstly, it is possible for a QP with a prenominal quantifier such as *san-nin-no otoko-ga* to bind a pronoun in the object in the canonical order since the former c-commands the latter, as in (20), while in the canonical order a Type 1 object QP cannot bind a pronoun in the subject since the former does not c-command the latter, as in (21):[9]

(20) Type 1 $QP_{i\ SUBJ}$ [... $pronoun_i$...]$_{OBJ}$

a. *San-nin-no otoko*$_i$-ga *soitu*$_i$-no kinmusaki-o uttae-ta
3-Cl-Gen man-Nom he-Gen workplace-Acc sue-Past
'Three men filed a suit against the company they work at.'

b. *San-nin-no gakusei*$_i$-ga *soitu*$_i$-no hahaoya-o tureteki-ta
3-Cl-Gen student-Nom he-Gen mother-Acc bring-Past
'Three students brought their mother.'

(21) * [... $pronoun_i$...]$_{SUBJ}$ Type 1 $QP_{i\ OBJ}$

a. * *Soitu*$_i$-no kinmusaki-ga *san-nin-no okoto*$_i$-o uttae-ta
he-Gen workplace-Nom 3-Cl-Gen man-Acc sue-Past
'The company they work at accused three men.'

b. * *Soitu*$_i$-no hahaoya-ga *san-nin-no gakusei*$_i$-o tureteki-ta
he-Gen mother-Nom 3-Cl-Gen student-Acc bring-Past
'Their mother brought three students.'

If the object QP is scrambled to the left of the subject, it is possible for the QP to bind a pronoun in the subject, a fact that signals the A-movement property of scrambling:

(22) Type 1 $QP_{i\ OBJ}$ [... $pronoun_i$...]$_{SUBJ}$ t_i

a. *San-nin-no okoto*$_i$-o *soitu*$_i$-no kinmusaki-ga uttae-ta
3-Cl-Gen man-Acc he-Gen workplace-Nom sue-Past
Lit. 'Three men, the company they work at accused.'

b. *San-nin-no gakusei*$_i$-o *soitu*$_i$-no hahaoya-ga tureteki-ta
3-Cl-Gen student-Acc he-Gen mother-Nom bring-Past
Lit. 'Three students, their mother brought.'

[9] Facts such as those in (20-22) have been observed widely in the literature since Hoji (1985).

On the other hand, it is impossible for an object NP-FQ, a Type 2 QP, to bind a pronoun even if it is scrambled to the left of the pronoun.[10] Firstly, a Type 2 QP exhibits the same behavior with respect to pronominal binding in the canonical order of the subject and the object. It is possible for a Type 2 QP to bind a pronoun if it is in the subject position ((23)), while an NP-FQ exhibits a WCO effect in the object position ((24)):[11]

(23) Type 2 $QP_{i\ SUBJ}$ [... $pronoun_i$...]$_{OBJ}$
  a. ? *Otoko*$_i$-ga *san-nin* *soitu*$_i$-no kinmusaki-o uttae-ta
    man-Nom 3-Cl-Gen he-Gen workplace-Acc sue-Past
    'Three men filed a suit against the company they work at.'
  b. ? *Gakusei*$_i$-ga *san-nin soitu*$_i$-no hahaoya-o tureteki-ta
    student-Nom 3-Cl he-Gen mother-Acc bring-Past
    'Three students brought their mother.'

(24) * [... $pronoun_i$...]$_{SUBJ}$ Type 2 $QP_{i\ OBJ}$
  a. * *Soitu*$_i$-no kinmusaki-ga *okoto*$_i$-o *san-nin* uttae-ta
    he-Gen workplace-Nom man-Acc 3-Cl sue-Past
    'The company they work at sued three men.'
  b. * *Soitu*$_i$-no hahaoya-ga *gakusei*$_i$-o *san-nin* tureteki-ta
    he-Gen mother-Nom student-Acc 3-Cl bring-Past
    'Their mother brought three students.'

Now observe the contrast between (22) and (25):

(25) Type 2 $QP_{i\ OBJ}$ [... $pronoun_i$...]$_{SUBJ}$ t_i
  a. * *Okoto*$_i$-o *san-nin soitu*$_i$-no kinmusaki-ga uttae-ta
    man-Acc 3-Cl he-Gen workplace-Nom sue-Past
    Lit. 'Three men, the company he works at accused.'
  b. * *Gakusei*$_i$-o *san-nin soitu*$_i$-no hahaoya-ga tureteki-ta
    student-Acc 3-Cl he-Gen mother-Nom bring-Past
    Lit. 'Three students, his mother brought.'

As observed in (25), it is very difficult, if not impossible, for the scrambled object Type 2 QP *okoto-o san-nin* and *gakusei-o san-nin* to bind the pronoun *soitu* in the subject. The difference between (22) and (25) supports the proposed difference in the landing site of scrambled QPs in (22) and (25). Since the presence of the WCO effect diagnoses the A'-property of

[10] This is also pointed out in Shibata (2015).
[11] As reported by some of the informants, the pronominal binding in (23) is not perfectly acceptable. Nonetheless, these speakers did detect a difference in acceptability between (23) and (25).

movement, the scrambling of the Type 2 QP in (25) can only be an instance of A'-movement. On the other hand, the lack of the WCO effect in (22) indicates that the scrambling of the QPs *san-nin-no otoko-o* and *san-nin-no gakusei-o* may be an A-movement. Moreover, since these QPs may be of Type 1, the lack of the WCO effect in (22) shows that the scrambling of Type 1 QP can be A-movement.[12]

The observed difference between Type 1 and Type 2 QPs with respect to the WCO effect can be explained in terms of whether these two types of QP may be moved by the topic feature to [Spec, TP]. Only Type 1 QPs may move to [Spec, TP] so that they exhibit the property of A-movement, while Type 2 QPs may only undergo the semantically vacuous scrambling, which is not a movement driven by the topic feature, and thus only exhibit the property of A'-movement.

4.3 The Topic Feature is Sensitive to the Syntax of QPs, Not to Their Semantics

In the preceding section we proposed that the topic feature may be borne by Type 1 QPs, but not by Type 2 QPs. Since Type 1 and Type 2 QPs are distinguished in syntactic terms, as we have discussed, the availability of the topic feature for a QP must be determined in syntactic terms.

Alternatively, however, one might claim that the possibility of a QP's bearing the topic feature depends on the semantics of the QP, not on the internal syntactic structure of the QP. Indeed, it seems that the object NP-FQs in (9) and (10) appear to have a nonpresuppositional

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[12] Type 1 and Type 2 QPs also behave differently in the licensing of the sentence-internal reading of *onazi/tigau* 'same/different.' Compare:

(i) *Each pair of figure skaters was asked to choose a piece of music for their performance. Then we checked whether for each pair the male skater and the female skater chose the same piece of music.*
   a. San-kumi-no pea-ga tigau kyoku-o eran-da
      3-Cl-Gen pair-Nom different music-Acc choose-Past
      'Three pairs of skaters chose difference pieces of music.'
   b. Pea-ga san-kumi tigau kyoku-o eran-da
      pair-Nom 3-Cl different music-Acc choose-Past
      'Three pairs of skaters chose difference pieces of music.'

(ii) *We checked whether for each pair the male skater and the female skater are instructed by the same coach.*
   a. San-kumi-no pea-o tigau kooti-ga sidoosite i-ru
      3-Cl-Gen pair-Acc different coach-Nom instruct be-Pres
      'Different coaches instruct three pairs of figure skaters.'
   b. * Pea-o san-kumi tigau kooti-ga sidoosite i-ru
      pair-Acc 3-Cl different coach-Nom instruct be-Pres

Homma (1992, 1995) propose that the sentence-internal reading of *same/different* and *onazi/tigau* arises by way of binding an implicit pronoun associated with these adjectives. If this analysis is on the right track, the degraded availability of the sentence-internal reading in (iib) is expected since a scrambled NP-FQ cannot bind a pronoun in the subject.

interpretation while the Q-NPs in (7) and (8) may have a presuppositional reading. Moreover, one might claim that the QPs with the Adj-Q order in (12) and (14) have a nonpresuppositional reading, while those with the Q-Adj order in (12) and (13) may have a presuppositional reading. If so, then it might be the case that the compatibility of a QP with the topic feature is determined by the presuppositionality of the QP.

However, recall from Chapter 3 that NP-FQs and QPs with the Adj-Q order may have a presuppositional reading as well as a nonpresuppositional one. Clearer cases of the presuppositional reading for an NP-FQ are shown in (28) and (29), while examples involving Q-NPs are provided in (26) and (27):

(26) a. Zen'in-ga sensei-ga suisensita san-satu-no hon-o
everyone-Nom teacher-Nom recommended 3-Cl-Gen book-Acc
yom-anakat-ta
read-Neg-Past
'Everyone did not read three books that the teacher recommended.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Sensei-ga suisensita san-satu-no hon-o zen'in-ga
teacher-Nom recommended 3-Cl-Gen book-Acc everyone-Nom
yom-anakat-ta
read-Neg-Past
Lit. 'Three books that the teacher recommended, everyone did not read.'
[ambiguous: ∀ > Neg, Neg > ∀]

(27) a. Zen'in-ga konnendo-kara hissyuu-ni sita mit-tu-no kamoku-o
everyone-Nom this.year-from compulsory-Dat made 3-Cl-Gen course-Acc
risyuusi-nakat-ta
take-Neg-Past
'Everyone did not take three courses that have been made compulsory this year.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Konnendo-kara hissyuu-ni sita mit-tu-no kamoku-o zen'in-ga
this year-from compulsory-Dat made 3-Cl-Gen course-Acc everyone-Nom
risyuusi-nakat-ta
take-Neg-Past
Lit. 'Three courses that have been made compulsory this year, everyone
did not take.'
[ambiguous: ∀ > Neg, Neg > ∀]

(28) a. Zen'in-ga sensei-ga suisensita hon-o san-satu yom-anakat-ta
everyone-Nom teacher-Nom recommended book-Acc 3-Cl read-Neg-Past

'Everyone did not read three books that the teacher recommended.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Sensei-ga suisensita hon-o san-satu zen'in-ga yom-anakat-ta
teacher-Nom recommended book-Acc 3-Cl everyone-Nom read-Neg-Past
Lit. 'Three books that the teacher recommended, everyone did not read.'
[unambiguous: ∀ > Neg, ??Neg > ∀]

(29) a. Zen'in-ga konnendo-kara hissyuu-ni sita kamoku-o mit-tu
everyone-Nom this year-from compulsory-Dat made course-Acc 3-Cl
risyuusi-nakat-ta
take-Neg-Past
'Everyone did not take three courses that have been made compulsory this year.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Konnendo-kara hissyuu-ni sita kamoku-o mit-tu zen'in-ga
this year-from compulsory-Dat made course-Acc 3-Cl everyone-Nom
risyuusi-nakat-ta
take-Neg-Past
Lit. 'Three courses that have been made compulsory this year, everyone did not take.'
[unambiguous: ∀ > Neg, ??Neg > ∀]

The examples in (28) and (29) involve an object NP-FQ that can be interpreted to have a presuppositional reading. In (28), for example, the object DP *sensei-ga suisensita hon-o san-satu* 'three books that the teacher recommended' can be interpreted to refer to three books among the set of books referred to by the noun and the relative clause. What is crucial here is that scrambling of these QPs does not allow the subject *zen'in* to take narrow scope under negation despite the presuppositional interpretation that they have, as shown by (28b) and (29b). This means that the QPs in (28) and (29) cannot have the topic feature despite their presuppositional interpretation. Thus this fact tells us that the presence/absence of the topic feature on a DP must be determined on the basis of the internal structure of the DP, not on the basis of the semantic property of presuppositionality.

Thus far we have proposed that scrambling into [Spec, TP] is allowed for Type 1 QPs, but not for Type 2 QPs. However, since we have limited our attention to the scrambling of QPs and have left non-quantificational DPs outside the scope of the analysis, we may ask whether our analysis could be extended to the scrambling of non-quantificational DPs as well.

Non-quantificational DPs do allow the subject *zen'in* to take narrow scope as in the following example from Miyagawa (2010) cited at the outset of this chapter:

(30) (= (2))

a. *Zen'in-ga* siken-o uke-*nakat*-ta
everyone-Nom test-Acc take-Neg-Past
'Everyone did not take the test.'
[unambiguous: ∀ > Neg, *Neg > ∀]

b. Siken-o *zen'in-ga* uke-*nakat*-ta
test-Acc everyone-Nom take-Neg-Past
Lit. 'The test, everyone did not take.'
[ambiguous: ∀ > Neg, Neg > ∀] (Miyagawa (2010))

Since the scrambling of the non-quantificational DP *siken-o* in (30b) allows the subject *zen'in-ga* to take narrow scope with respect to negation, we may say that a non-quantificational DP may bear the topic feature.

However, a careful examination of this particular example reveals an interesting fact. The partial negation reading of sentence (30b) seems possible only if we interpret the scrambled object *siken-o* as referring to a particular test mentioned in the previous discourse, a reading that corresponds to a definite DP in English such as *the/that test*. If we interpret *siken-o* as having an indefinite reference, whereby the DP refers to a test/tests that is/are newly introduced into the discourse as with the English indefinite DP *a test* or *tests*, it is difficult for the subject *zen'in* to take narrow scope under negation. Indeed, if we add a determiner such as *sono* 'that' and *ano* 'that' to the scrambled object DP in (30) in order to make the object to have a definite reference, the partial negation reading is readily available, as in:

(31) Sono-siken-o *zen'in-ga* uke-*nakat*-ta
that-test-Acc everyone-Nom take-Neg-Past
Lit. 'That test, everyone did not take.'
[ambiguous: ∀ > Neg, Neg > ∀]

The unavailability of the partial negation reading with the indefinite interpretation of the scrambled object in (30b) can be accounted for under our analysis. Since the object *siken-o* does not have a quantifier in [Spec, DP], it does not meet the condition for bearing the topic feature: it lacks an element in [Spec, DP]. This makes it impossible for the object to move into [Spec, TP].

The availability of the partial negation reading in (31), on the other hand, can be accounted for by supposing that the demonstratives such as *sono* 'that,' *ano* 'that over there,' and *kono* 'this' are in [Spec, DP] on a par with quantifiers, by virtue of which they give rise to the definite reading of the DP and allow the DP to bear the topic feature. This makes it possible for the DP *sono-siken-o* in (31) to be moved into [Spec, TP] by the topic feature.

This leaves unexplained the availability of the partial negation reading in (30b) under the definite reading of the object: The object DP *siken-o* does not have a quantifier in [Spec, DP], but allows the subject to take narrow scope under negation. How can this problem be solved under our analysis?

One conceivable analysis consistent with our analysis is to say that a bare DP has a choice of having the same feature on D that introduces a definite demonstrative such as *sono*, without introducing any demonstrative in [Spec, DP], and that this feature gives rise to the definite interpretation of the bare DP *siken-o* and allows this DP to bear the topic feature. Then we can account for the availability of the partial negation reading of (30b) only under the definite reading of the scrambled object.

4.4 Scope and Scrambling

In Chapter 2 we observed a significant difference in the scope property of the Type 1 and the Type 2 QP. The difference is summarized as follows:

(32) a. When the object is a Type 1 QP:
  i. QP_{SUBJ} QP_{OBJ} V [unambiguous: $QP_{SUBJ} > QP_{OBJ}$, $*QP_{OBJ} > QP_{SUBJ}$]
  ii. QP_{OBJ} QP_{SUBJ} t_i V [ambiguous: $QP_{SUBJ} > QP_{OBJ}$, $QP_{OBJ} > QP_{SUBJ}$]

  b. When the object is a Type 2 QP:
  i. QP_{SUBJ} QP_{OBJ} V [unambiguous: $QP_{SUBJ} > QP_{OBJ}$, $*QP_{OBJ} > QP_{SUBJ}$]
  ii. QP_{OBJ} QP_{SUBJ} t_i V [unambiguous: $QP_{SUBJ} > QP_{OBJ}$, $*QP_{OBJ} > QP_{SUBJ}$]

While a Type 1 object QP may take wide scope over the subject in the order Object > Subject, a Type 2 object QP may not take wide scope over the subject irrespective of the order of the subject and the object.

One kind of Type 2 QP is a QP whose quantifier is preceded by an Adj. As already discussed, a QP with this internal order cannot take wide scope even when scrambled to the left of the subject:

(33) (= (60) of Chapter 2)
  a. *At an audition for pop singers,*
  Kireina hutari-no syoozyo-o subete-no geinoopurodakusyon-ga sasot-ta
  beautiful 2.Cl-Gen girl-Acc every-Gen talent.agency-Nom invite-Past
  Lit. 'Two beautiful girls, all the talent agencies invited.'
  [unambiguous: ∀ > 2, *2 > ∀]
  b. *Akai san-dai-no kuruma-o daremo-ga* mokugekisi-ta
  red 3-Cl-gen car-Acc everyone-Nom witness-Past
  Lit. 'Three red cars, everyone witnessed'
  [unambiguous: ∀ > 3, *3 > ∀]]

A second case of Type 2 QPs is NP-FQs, which exhibit the same scope property as the QPs in (33). Compare (34a) and (34b). As we see in (34b), an NP-FQ is not allowed to take wide scope over the subject QP even when it is scrambled to the left of the subject while the Type 1 QP in (34a) is allowed to do so.

(34) (= (4) of Chapter 2)

a. *Huta-tu-no booru-o* daremo-ga ket-ta.
2-Cl-Gen ball-Acc everyone-Nom kick-Past
'Everyone kicked two balls.'
[ambiguous: ∀ > 2, 2 > ∀]

b. *Booru-o huta-tu* daremo-ga ket-ta.
ball-Acc 2-Cl everyone-Nom kick-Past
'Everyone kicked two balls.'
[unambiguous: ∀ > 2, *2 > ∀]

A third case of Type 2 QPs is the B-NP with an existential interpretation:

(35) (= (8) of Chapter 2)

a. *Booru-o* daremo-ga ket-ta
ball-Acc everyone-Nom kick-Past
'Everyone kicked balls.'
[unambiguous: ∀ > ∃, *∃ > ∀]

b. *Ikutuka-no booru-o* daremo-ga ket-ta
some-Gen ball-Acc everyone-Nom kick-Past
'Everyone kicked balls.'
[ambiguous: ∀ > ∃, ∃ > ∀]

The B-NP *booru-o* has an existential interpretation in (35a), approximately on a par with the Q-NP with the overt existential quantifier *ikutuka-no* in (35b). However, the B-NP cannot take wide scope over the subject QP even when scrambled to the left of the subject, unlike the Q-NP *ikutuka-no booru-o* in (35b), which does take either wide or narrow scope.

Now what is striking for us is the fact that the kinds of QP that may not take wide scope are identical to those that may not bear the topic feature, as we have seen in the preceding sections in this chapter. This striking correlation between these two apparently unrelated phenomena calls for an explanation of the scope properties of QPs in terms of the availability of the topic feature for the QPs. Roughly speaking, the point of the proposal is that if a QP is scrambled by the topic feature, the scrambled position is the position that determines its scope, and that if the scrambling of a QP is not triggered by the topic feature, the scope of the QP is

determined in its original position.

In order to make this idea precise, let us propose the mechanism for an adequate account of the facts that we have observed so far. Firstly, we propose the Scope Principle in (36):

(36) Scope Principle:
QP_1 takes scope over QP_2 iff the head of the SI chain of QP_1 c-commands the head of the SI chain of QP_2.

An SI position and an SI chain are defined as follows:[13]

(37) SI positions:
An *SI position* of X is a position where X's semantic interpretation is established by
i) a grammatical feature that is semantic in nature or
ii) a thematic role.

(38) SI chains and SI heads:
An *SI chain* of X consists of the SI positions in the set of positions of the syntactic chain of X. The head of an SI chain (the *SI head*) is the topmost SI position of the SI chain.

The grammatical features referred to in (37i) are such features as the topic, the focus, the topicalization, and the WH-features, since they are semantic in nature in the sense that their primary role is to determine the semantic interpretation of a DP. Thus one kind of SI position is [Spec, TP], the position where a DP has its topic feature licensed and receives the topic interpretation. In addition, positions in the CP-domain can be SI positions, as long as these positions provide a DP with a particular semantic interpretation. Thus the position which a DP moves to by Topicalization is an SI position since a topicalized DP is assigned a particular interpretation by virtue of the fact that it moves to that position. Another kind of SI position is any position where a DP is assigned a thematic role. Thus [Spec, vP] and any position in VP where a DP is introduced as an argument are SI positions. On the other hand, those positions where grammatical features such as the Case-feature and the Φ-feature are checked do not count as SI positions since these features themselves have to do with the formal properties of DPs and hence do not count as a feature that is semantic in nature.

To sum up, our proposal amounts to saying that there is no independent grammatical feature or operation whose sole purpose is to determine the scope of QPs. Rather, the determination of the scope of a QP is totally dependent on the determination of other aspects of semantic interpretation of the QP, such as the QP's topic, focus, and thematic interpretation.

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[13] SI = semantic interpretation

At this point, one might say that the position where a DP's Φ-feature is checked may be counted as one of the SI positions since the Φ-feature arguably has to do with a semantic interpretation of the subject. Indeed, Miyagawa (2010) claims that "(m)ovement triggered by agreement takes place in order to keep a record of functional relations for semantic and information-structure interpretation (Miyagawa (2010: 33)." In other words, Miyagawa takes the Φ-feature as a grammatical feature contributing to functional interpretation of DPs since it triggers movement by agree. However, what is relevant for the identification of SI positions is the nature of the grammatical feature on a head. The topic, the focus, and the topicalization feature are all themselves semantic in nature, whereas the primary role of the Φ-feature has to do with the formal, morphological property of DPs. Thus those positions for checking of the Case feature and the Φ-feature are excluded from the set of SI positions.

Note also that SI positions and SI heads as defined above are similar to Rizzi's (1996, 1997) *criterial positions* in that criterial positions are those positions where a DP's semantic interpretation is determined by way of the grammatical feature on a head. Our SI positions are different from Rizzi's criterial positions in two respects. Firstly, the SI positions include those positions where a DP's thematic role is assigned, the positions called *s-selectional positions* in Rizzi's framework. Secondly, whereas the subject position is considered to be one of the criterial positions in the series of Rizzi's works (Rizzi (2007) and the references cited there), the subject position in our system is not always identified as an SI position. Whether the subject position is an SI position or not is determined by a number of factors, as we will see shortly.

Having illustrated what SI positions and SI heads are like, let us now see how our system works. If a QP is moved into [Spec, TP] by the topic feature, the SI chain of the QP consists of the two underlined positions in (39):

(39) a. [$_{TP}$ **QP$_i$** [$_{vP}$ $\underline{t_i}$ [$_{VP}$ ... V]]] (movement of the subject into [Spec, TP])
[topic] [θ]
head
the SI chain = {QP$_i$, t_i} the head of the SI chain = QP$_i$

b. [$_{TP}$ **QP$_i$** [$_{vP}$ Subj [$_{VP}$ $\underline{t_i}$ V]]] (scrambling of the object into [Spec, TP])
[topic] [θ]
head
the SI chain = {QP$_i$, t_i} the head of the SI chain = QP$_i$

The position where the QP moves to in (39a), namely [Spec, TP], is an SI position since it is the position where the QP's topic interpretation is determined. The position of its trace t_i is another SI position for the subject QP since it is the position where the subject QP's thematic role (in this case, Agent) is determined. The SI chain for the subject QP is identified as {QP$_i$, t_i} since both the position of QP$_i$ and that of t_i are SI positions. Furthermore, the head of this SI chain is the position of QP$_i$ since it is the topmost position in this chain. In the case of the

scrambling of the object QP into [Spec, TP] by the topic feature, as is illustrated in (39b), one SI position is the position of the scrambled QP_i. Another SI position is its underlying position marked by its trace t_i since it is where the object QP's thematic role is determined. The SI chain for the object is identified as $\{QP_i, t_i\}$, of which QP_i is the SI head.

When a QP is not moved, the SI head of the QP is identified as the underlying position where the QP's thematic role is determined. One such case is an unscrambled object as depicted in (40) while another such case is the subject remaining in [Spec, vP] by virtue of the scrambling of the object into [Spec, TP] as in (40b):[14]

(40) a. $[_{TP}\ DP_{SUBJ}\ [_{vP}\ t_{SUBJ}\ [_{VP}\ \mathbf{QP_{OBJ}}\ \ V]]]$
$\mathbf{[\theta]}$
head
the SI chain = $\{QP_{OBJ}\}$, the SI head = QP_{OBJ}

b. $[_{TP}\ DP_{OBJ}\ [_{vP}\ \mathbf{QP_{SUBJ}}\ [_{VP}\ \ t_{OBJ}\ \ V]]]$
$\mathbf{[\theta]}$
head
the SI chain = $\{QP_{SUBJ}\}$, the SI head = QP_{SUBJ}

In the case where the object QP is scrambled without being the target of the topic probe on T, as in the case of the scrambling of a Type 2 QP, the chain of the object QP is represented as follows:

(41) $[_{TP}\ QP_j\ \ [_{TP}\ Subj_i\ \ [_{vP}\ t_i\ \ [_{VP}\ \mathbf{t_j}\ \ V]]]$
$\mathbf{[\theta]}$
head
the SI chain = $\{t_j\}$ the SI head = t_j

In this case, the SI chain of the scrambled QP consists of the trace t_j only since the moved QP itself does not bear the topic feature and that the only SI position in its chain is its underlying position where its thematic role is determined.

With this mechanism in mind, let us see how the data of scope interaction in Japanese can be explained. Firstly, the case where both the subject and the object are Type 1 QPs is accounted for in the following way. When the two QPs are in their canonical order Subject – Object as in (42a), the structure of the sentence is represented in (42b):

(42) $QP_{SUBJ\text{-}Type\ 1}\ QP_{OBJ\text{-}Type\ 1}$ V
a. San-nin-no gakusei-ga subete-no siken-o uke-ta
3-Cl-Gen student-Nom every-Gen test-Acc take-Past

[14] In Chapter 5 we modify this analysis of the object position by introducing the system of Case-checking proposed by Shibata (2015).

‘Three students took every exam.’

[unambiguous: 3 > ∀, *∀ > 3]

b. [$_{TP}$ **san-nin-no gakusei-ga$_i$** [$_{T'}$ [$_{vP}$ t_i [$_{VP}$ **subete-no siken-o** uketa]]]]
[topic] [*θ*] **[*θ*]**

→ *san-nin-no gakusei-ga$_i$ > subete-no siken-o*

⇨ [unambiguous: 3 > ∀, *∀ > 3]

In (42b), the subject QP has been moved into [Spec, TP] by the topic probe and the object remains in its underlying position. The SI head of the subject is the QP in [Spec, TP], while that of the object is the QP in its underlying position. Since the SI head of the subject QP c-commands that of the object QP, this representation gives only the scope order Subject > Object (3 > ∀).

When the object QP is scrambled, there are two possible structures:

(43) QP$_{OBJ\text{-}Type\ 1}$ QP$_{SUBJ\text{-}Type\ 1}$ *t*$_{OBJ}$ V

a. Subete-no siken-o san-nin-no gakusei-ga uke-ta
every-Gen test-Acc 3-Cl-Gen student-Nom take-Past
Lit. ‘Every exam, three students took.’
[ambiguous: 3 > ∀, ∀ > 3]

b. i) [$_{TP}$ **subete-no siken-o$_j$** [$_{T'}$ [$_{vP}$ **san-nin-no gakusei-ga$_i$** [$_{VP}$ t_j uketa]]]]
[topic] **[*θ*]** [*θ*]

→ *subete-no siken-o$_j$ > san-nin-no gakusei-ga$_i$*

ii) [$_{TP}$ subete-no siken-o$_j$ [$_{TP}$ **san-nin-no gakusei-ga$_i$** [$_{T'}$ [$_{vP}$ t_i [$_{VP}$ ***t*$_j$** uketa]]]]]
[topic] [*θ*] **[*θ*]**

→ *san-nin-no gakusei-ga$_i$ > subete-no siken-o$_j$*

⇨ [ambiguous: 3 > ∀, ∀ > 3]

The first possible structure is given in (43bi), where the scrambled object QP is moved by the topic feature. In this representation, the SI head of the object is the QP in [Spec, TP] (*subete-no siken-o*$_j$) while that of the subject is the subject QP itself in [Spec, vP]. Since the SI head of the object c-commands that of the subject, this representation gives rise to the scope order Object > Subject (*subete-no siken-o*$_j$ > *san-nin-no gakusei-ga*$_i$). In the second possible structure in (43bii), the object is scrambled, but not by the topic feature. The one that has been moved by the topic feature is the subject QP. While the SI head of the subject is the subject QP in [Spec, TP], that of the scrambled object is the trace in its underlying position. This structure gives rise to the scope order Subject > Object. The above two representations, therefore, yield the two scope interpretations of the sentence.

Secondly, the scope interaction between a subject Type 1 QP and an object Type 2 QP is explained in the following way. If the subject and the object are in their canonical order as in (44a), the sentence has the representation in (44b):

(44) $QP_{SUBJ\text{-}Type\ 1}$ $QP_{OBJ\text{-}Type\ 2}$ V

a. Subete-no gakusei-ga siken-o mit-tu uke-ta
every-Gen student-Nom test-Acc 3-Cl take-Past
'Every student took three exams.'
[unambiguous: ∀ > 3, *3 > ∀]

b. [$_{TP}$ **subete-no gakusei-ga$_i$** [$_{T'}$ [$_{vP}$ t_i [$_{VP}$ **siken-o mit-tu** uketa]]]]
[topic] [θ] **[θ]**
→ *subete-no gakusei-ga$_i$ > siken-o mit-tu*
⇨ [unambiguous: ∀ > 3, *3 > ∀]

While the SI head of the subject QP *subete-no gakusei-ga* is identified as the QP itself in [Spec, TP], the SI head of the object QP *siken-o mit-tu* is the QP itself in the object position. Since the former c-commands the latter and this is the only representation for (44a), the sentence is unambiguous with the Subject > Object being the only scope order. If the object Type 2 QP is scrambled as in (45a), the sentence has only the structure in (45b):

(45) $QP_{OBJ\text{-}Type\ 2}$ $QP_{SUBJ\text{-}Type\ 1}$ t_{OBJ} V

a. Siken-o mit-tu subete-no gakusei-ga uke-ta
test-Acc 3-Cl every-Gen student-Nom take-Past
Lit. 'Three tests, every student took.'

b. [$_{TP}$ siken-o mit-tu$_j$ [$_{TP}$ **subete-no gakusei-ga$_i$** [$_{T'}$ [$_{vP}$ t_i [$_{VP}$ ***t*$_j$** uketa]]]]]
[topic] [θ] **[θ]**
→ *subete-no gakusei-ga$_i$ > siken-o mit-tu$_j$*
⇨ [unambiguous: *3 > ∀, ∀ > 3]

The crucial point is that since the object is of Type 2, it cannot bear the topic feature and the SI head of it is its trace t_j in the object position. Since the SI head of the subject QP *subete-no gakusei-ga$_i$* in [Spec, TP] c-commands the SI head of the object (t_j), the Scope Principle dictates that the sentence has the Subject > Object scope order as its only reading.

Thus our proposal can successfully capture the difference in the scope property between Type 1 and Type 2 QPs as well as the difference in the scope interaction between the subject and the object in their canonical and the scrambled order.

Before closing this section, let us consider one potential alternative account of the difference between Type 1 and Type 2 QPs with respect to the effect of scrambling to their scope interpretation. Recall that Type 1 QPs may undergo A-movement whereas Type 2 QPs may only undergo A'-movement. Thus the observed difference in their scope properties might be ascribed simply to the A/A' distinction of movement.[15]

[15] Attempts to account for QP scope in Japanese in terms of A/A' distinction are made in Tada (1993)

However, it is rather unsatisfactory to tie the difference in scope to the A/A' distinction of movement, by stating that A-movement of a QP enables it to have wide scope whereas A'-movement does not. Firstly, this statement would simply be a descriptive generalization and would itself raise a question of why this descriptive generalization holds. Secondly, this descriptive generalization is not empirically adequate. It is not the case that A-movement necessarily "freezes" the scope of an A-moved QP. It has been pointed out in Carlson (1977) that a bare existential subject DP may only take narrow scope in the raising construction, despite the fact that it has undergone A-movement to the matrix subject position.

(46) *Drunks* are *likely* to win the lottery.
[unambiguous: *∃ > *likely*, *likely* > ∃]

This means that A-movement does not always give the moved QP a wide scope. Conversely, it is possible for A'-movement to widen the scope of a QP. In the following topicalization construction, where the topicalized constituent has undergone A'-movement, the topicalized QP may only take wide scope.

(47) a. *All of us* have read *many of the books* with great enthusiasm.
[ambiguous: *all* > *many*, *many* > *all*]
b. *Many of the books*, *all of us* have read with great enthusiasm.
[unambiguous: **all* > *many*, *many* > *all*]
(Kuno (1991: 267), Kuno and Takami (2002))

Thus these facts suggest that the difference in the scope property under scrambling between Type 1 and Type 2 QPs cannot be accounted for simply by appealing to the A/A' distinction of the scrambling of these types of QP.

4.5 Unaccusatives and Passives: Cases of Optional Movement to [Spec, TP]

Throughout this chapter, we have been assuming, as with Miyagawa (2010), that the movement to [Spec, TP] triggered by the topic feature is obligatory. This is supported by the fact that the subject *zen'in* in the SOV order may only take wide scope with respect to negation. The structure of (48a), for example, is represented as (48b):

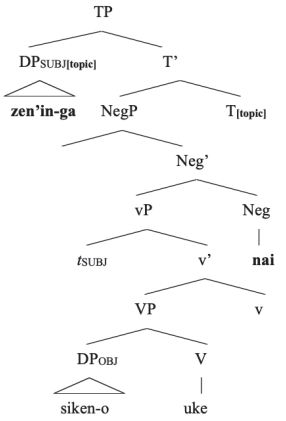
(48) a. *Zen'in-ga* siken-o uke-*nakat*-ta
everyone-Nom test-Acc take-Neg-Past
'Everyone did not take the test.'

---

and Miyagawa (2003). In particular Miyagawa (2003) discusses the (im)possibility of the object's taking wide scope in the OSV order by appealing to the A/A' distinction of the scrambling that the object undergoes. For details, see Miyagawa (2003).

[unambiguous: ∀ > Neg, *Neg > ∀]

b.



However, in certain environments the subject QP may take narrow scope under negation. Such cases are found with the unaccusative and the passive construction (Homma (1998), Miyagawa (2001)):

(49) the subject of unaccusative verbs:

a. *Zen'in-ga* ko-*nakat*-ta
everyone-Nom come-Neg-Past
'Everyone did not come.'
[ambiguous: ∀ > Neg, Neg > ∀]

b. *Zen'in-ga* taore-*nakat*-ta
everyone-Nom fall.down-Neg-Past
'Everyone did not fall down.'
[ambiguous: ∀ > Neg, Neg > ∀]

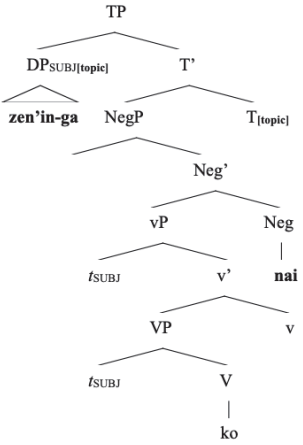
(50) the subject of passive verbs:

a. *Zen'in-ga* seme-rare-*nakat*-ta
everyone-Nom blame-Pass-Neg-Past
'Everyone wasn't blamed.'
[ambiguous: ∀ > Neg, Neg > ∀]

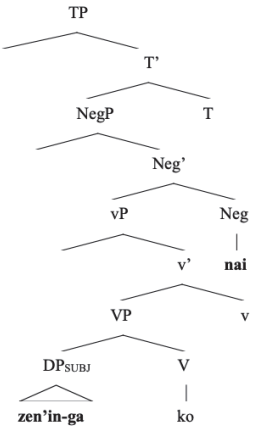
b. *Zen'in-ga* sono-syokuzikai-ni sasow-are-*nakat*-ta
everyone-Nom that-dinner-Dat invite-Pass-Neg-Past
'Everyone wasn't invited to the dinner.'
[ambiguous: ∀ > Neg, Neg > ∀]

These facts tell us that the subject of unaccusative and passive verbs does not obligatorily move to [Spec, TP], unlike that of agentive transitive verbs such as *ukeru* in (48). If we assume that the subject of unaccusative and passive verbs originates as an internal argument in the object position in VP, the subject QP in (49a), for example, is derived in either of the following two ways:

(51) a.



b.



This accounts for the ambiguity of the examples in (49) and (50). If the subject QP *zen'in* is moved to [Spec, TP] by the topic feature, it is the subject QP that takes wide scope since in

this case [Spec, TP] is the SI head for the subject. On the other hand, if the subject remains in its original position, it takes narrow scope under negation. The object position in this case is the SI head for *zen'in* since it is the position where it has its thematic role determined.[16] The relevant generalization with respect to the movement of the subject to [Spec, TP] may be stated as follows:

(52) The movement to [Spec, TP] by the topic feature is obligatory unless the clause lacks an external argument.

Thus in (48) the movement of a constituent to [Spec, TP] is obligatory since the sentence involves an external argument. Note that [Spec, TP] may be filled by either the subject or the

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[16] To my knowledge, a piece of independent evidence for the optionality of subject raising in the unaccusative and the passive construction comes from the fact that the subject of unaccusatives and passives may have their Case-particle omitted. To begin with, the Accusative Case particle *–o* may only be deleted in the original object position. If the object is scrambled, the Case particle may not be deleted (Saito (1983, 1985)):

(i) a. Taroo-ga *dare(-o)* seme-ta-no
Taro-Nom who-Acc blame-Past-Q
'Who did Taro blame?'
b. *Dare*(-o)* Taroo-ga seme-ta-no
who-Acc Taro-Nom blame-Past-Q
'Who did Taro blame?'

Thus the relevant generalization is that for a DP to appear without a Case-particle the DP must be in the object position. As for the subject, the subject of an unaccusative verb or a passive verb may appear without a Case-particle *–ga*, but the subject of a transitive verb may not have its Case particle deleted:

(ii) a. *Dare(-ga)* ki-ta-no?
who-Nom come-Past-Q
'Who came?'
b. *Dare(-ga)* seme-rare-ta-no
who-Nom blame-Pass-Past-Q
'Who was blamed?'

(iii) a. *Dare*(-ga)* Taroo-o seme-ta-no
who-Nom Taro-Acc blame-Past-Q
'Who blamed Taro?'
b. Taroo-o *dare*(-ga)* seme-ta-no
Taro-Acc who-Nom blame-Past-Q
'Who blamed Taro?'

Thus the fact that the deletion of Case-particle is possible in (ii) strongly suggests that the subject of unaccusative and passive verbs may remain in its underlying object position, without moving to [Spec, TP]. See also Yatsushiro (1996) for arguments for the optionality of subject raising in the unaccusative and the passive construction. See also Kuroda (1988), who argues that the movement to the subject position is optional in Japanese, although Kuroda does not distinguish predicate types for subject raising.

object: the existence of an external argument in (48) makes it necessary for [Spec, TP] to be filled, but it can be the object that is attracted by the topic feature into [Spec, TP]. On the other hand, the lack of an external argument in (49) and (50) makes it possible for T to lack the topic feature so that the movement of a constituent to [Spec, TP] does not take place.

Although it is beyond the scope of the present work to account for the optionality of movement to [Spec, TP] of the subject of unaccusatives and passives, one possible account for it will be the following. Suppose that at the point where the vP phase is transferred to semantics the subject of an unaccusative/passive verb remains in its original position, as in (53):

(53) $[_{CP}$ C $[_{TP}$ T $[_{vP}$ v $[_{VP}$ DP-ga V]]]

⇩

transferred to semantics

Then in the next phase, the CP phase, there is no constituent that would serve as the target of the topic probe on T. In other words, the topic feature on T, if T has one, would be redundant since it does not attract any constituent and therefore would not have any semantic consequences. Thus for an economy reason the topic feature does not appear on T in this case. On the other hand, suppose that the subject DP-*ga* of unaccusative/passive verbs moves to the edge position of the vP phase, as in:

(54) $[_{CP}$ C $[_{TP}$ T $[_{vP}$ DP-ga v $[_{VP}$ V]]]

⇩

transferred to semantics

In this case the appearance of the topic feature on T has a semantic consequence since it has a constituent to attract to its Spec.

4.6 Shibata's (2015) Analysis of QP Scope

An account similar to ours with respect to the behavior of a scrambled NP-FQ with respect to pronominal binding and wide scope over the subject has been proposed by Shibata (2015). In this section we compare Shibata's analysis and ours presented so far.

Shibata proposes that scrambling to the left of the subject is either a semantically vacuous movement or a movement to [Spec, Top(ic)P], a projection above TP, where the object's topicality or definiteness feature is checked:

(55) $[_{TopP}$ Obj Top $[_{TP}$ Subj ... $[_{PrtP}$ Prt ...

As Shibata argues, an NP-FQ such as *kaisya-o mit-tu-izyoo* 'three or more companies' is

"indefinite/non-specific" so that it cannot be a topic. Thus the scrambling of the object NP-FQ in (56) may only be an instance of a semantically vacuous movement and hence the object cannot bind a pronoun:

(56) *?[Kaisya-o mit-tu-izyoo]$_i$ [soko$_i$-no syain-ga] t_i hihansi-ta
company-Acc 3-Cl-or.more it-Gen employee-Nom criticize-Past
Lit. 'Three or more companies, its employee(s) criticized.'
(Shibata (2015: 261))

In addition, Shibata also suggests that the impossibility of an NP-FQ's taking wide scope over the subject is ascribed to the incompatibility of the topicality/definiteness feature and the NP-FQ. An NP-FQ may only undergo a semantically vacuous scrambling, so that the scrambled NP-FQ object must take narrow scope:[17]

(57) [Gakusee-o yo-nin-izyoo]$_i$ san-nin-no sensee-ga t_i suisensi-ta
student-Acc 4-Cl-or.more 3-Cl-Gen teacher-Nom recommend-Past
'Three teachers recommended four or more students.'
[Prominent: Subj. > Obj.] (Shibata (2015: 263))

Shibata does not seem to discuss extensively the precise semantic characterization of "definite/specific" DPs, only suggesting that the crucial condition for a DP's being a topic is the "definiteness" of the DP, and pointing out that a DP in the form Numeral-Cl-Gen NP-Case can have a definite interpretation while a DP in the form NP-Case Numeral-Cl does not:

(58) a. Taroo-ga *san-nin-no gakusei-o* sikat-ta
Taro-Nom 3-Cl-Gen student-Acc scold-Past
'Taro scolded (the) three students.'
san-nin-no gakusei-o = the three students
b. Taroo-ga *gakusei-o san-nin* sikat-ta
Taro-Nom student-Acc 3-Cl scold-Past
'Taro scolded three students."
gakusei-o san-nin ≠ the three students

[17] For Shibata (2015), the (un)availability of scope readings involving a subject and an object is a matter of "prominence." Thus the widely observed rigidity of scope between a subject and an object in the canonical order in Japanese is regarded by Shibata as the prominence of the scope order Subj > Obj. The fact in (57) is taken by Shibata as a case where the scrambling "does not affect the prominence of scope readings (Shibata (2015: 263))." See Shibata (2015) for details. We discuss the rigidity of scope in Japanese in Chapter 6.

However, if one is to propose a semantic characterization of the DPs that can serve as the topic in the relevant sense, that semantic characterization would be stated in a better way in terms of presuppositionality in the sense of Diesing (1990), not in terms of definiteness. Consider the reading of the scrambled QP in (7b), repeated here as (59), for example:

(59) (= (7b))
Mit-tu-no tesuto-o zen'in-ga uke-nakat-ta
3-Cl-Gen test-Acc everyone-Nom take-Neg-Past
Lit. 'Three tests, everyone did not take.'
[ambiguous: ∀ > Neg, Neg > ∀]

In order for the sentence to have the Neg > ∀ reading, the scrambled object QP does not have to have a definite reading. The presuppositional reading of it, where it is paraphrased as "three of the tests," allows the Neg > ∀ reading. This means that it is not the definiteness of the scrambled object QP, but its presuppositionality, that allows the object QP to be a topic.

Moreover, as we have discussed extensively so far, a more adequate characterization of "topic" DPs in the relevant sense must be stated in syntactic terms, not in semantic terms such as definiteness or presuppositionality: only DPs with a quantifier/determiner in [Spec, DP] can bear the topic feature and hence can be the scrambled by the topic feature.

4.7 Summary of Chapter 4

This chapter has pointed out that the distinction between Type 1 and Type 2 QPs affects the way in which these two types of QP undergo scrambling: a Type 1 QP may be the target of the topic feature and be scrambled into [Spec, TP], while a Type 2 QP may not. We have accounted for the difference of the scope property between these two types of QP by introducing a system for determining QP scope, in which the syntactic positions called SI positions and SI heads play a central role. Scrambling of a Type 1 QP by the topic feature gives the Type 1 QP a wide scope since the position where its topic feature is licensed counts as its SI head, while a Type 2 QP has its scope determined only in the position where it is assigned a thematic role since it cannot have the topic feature.

Chapter 5
Scope Interaction of Object QPs and Negation

5.1 Introduction

In Chapter 2 we observed that an object NP-FQ cannot take scope over a subject QP, whether it is scrambled to the left of the subject or not. This property of favoring narrow scope contrasts with that of Type 1 QPs, QPs with a prenominal quantifier, in that Type 1 QPs may take scope over a subject when it is scrambled to its left.

(1) a. *Huta-tu-no booru-o* daremo-ga ket-ta.
2-Cl-Gen ball-Acc everyone-Nom kick-Past
'Everyone kicked two balls.'
[ambiguous: ∀ > 2, 2 > ∀]
b. *Booru-o huta-tu* daremo-ga ket-ta.
ball-Acc 2-Cl everyone-Nom kick-Past
'Everyone kicked two balls.'
[unambiguous: ∀ > 2, *2 > ∀]

In contrast, NP-FQs behave on a par with Type 1 QPs with respect to the scope of an object NP-FQ and negation.

(2) a. Taroo-ga *san-nin-izyoo-no gakusei-o* home-*nakat*-ta
Taro-Nom 3-Cl-or.more-Gen student-Acc praise-Neg-Past
'Taro did not praise three or more students.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]
b. Taroo-ga *gakusei-o san-nin-izyoo* home-*nakat*-ta
Taro-Nom student-Acc 3-Cl-or.more praise-Neg-Past
[ambiguous: 3 or more > Neg, Neg > 3 or more]

However, some forms of object QPs are not allowed to take wide scope over negation. As we have already observed, there are two kinds of object, B-NPs and QPs with a prenominal FQ, that may not take wide scope over negation:

(3) Taroo-ga *gakusei-o* home-*nakat*-ta
Taro-Nom student-Acc praise-Neg-Past
'Taro did not praise students.'
[unambiguous: *∃ > Neg, Neg > ∃]

(4) Taroo-ga *san-nin-izyoo gakusei-o* home-*nakat*-ta
Taro-Nom 3-Cl-or.more student-Acc praise-Neg-Past
'Taro did not praise three or more students.'
[unambiguous: *3 or more > Neg, Neg > 3 or more]

The above observation tells us that the clause structure between TP and VP has some mechanism that allows the object QP in (2) to take wide scope but prevents the object in (3) and (4) from taking wide scope. Since the topic feature in TP does not make it possible for a scrambled object NP-FQ to take wide scope, the relevant mechanism between TP and VP must involve some feature quite distinct from the topic feature. This chapter is aimed at proposing the mechanism to account for the facts in (2-4).

5.2 Scope of Object QPs and Presuppositionality

Before proposing the relevant mechanism, I would like to point out that it is the presuppositionality of an object QP that allows it to have wide scope over negation. First, consider the semantic property of existential B-NPs .

(5) Yamada-sensei-wa *gakusei-o* home-ta
Yamada-teacher-Top student-Acc praise-Past
'Prof. Yamada praised students.'

The object B-NP *gakusei-o* can have an existential reading and thus can be paraphrased as *nan-nin-ka-no gakusei-o* 'some students.' However, while this latter QP with a prenominal quantifier may refer either to a subset of the set of students that the speaker has in mind (the presuppositional reading), or to some students that are newly introduced into the discourse (the nonpresuppositional reading), the object B-NP may only refer to some students newly introduced into the discourse (the nonpresuppositional reading).

Second, consider how the three types of QP in (6) are interpreted:

(6) a. Keisatu-wa *san-nin-izyoo-no tooboohan-o* taihosi-ta
police-Top 3-Cl-or.more-Gen fugitive-Acc arrest-Past
'The police arrested three or more fugitive criminals.'
b. Keisatu-wa *tooboohan-o san-nin-izyoo* taihosi-ta
police-Top fugitive-Acc 3-Cl-or.more arrest-Past
c. Keisatu-wa *san-nin-izyoo tooboohan-o* taihosi-ta
police-Top 3-Cl-or.more fugitive-Acc arrest-Past

While all these three types of object QP have a nonpresuppositional reading, in which they refer to fugitives that are newly introduced into the discourse, there is a difference among them in

the availability of a presuppositional reading. The object QP with a prenominal quantifier in (6a) and the object NP-FQ in (6b) may have a presuppositional reading, as we have observed in Chapter 3: they can refer to a subset of fugitives in the set of fugitives already known to the speaker and the addressee, as well as to fugitives that are newly introduced into the discourse. In contrast, the object QP with a prenominal FQ in (6c) cannot have the presuppositional reading (Ishii (1997, 1998)).

What is noteworthy here is that this difference in the availability of a presuppositional reading corresponds to the availability of wide scope over negation. As we observed in Chapter 2, an object B-NP and an object QP with a prenominal FQ may not take scope over negation:

(7) Yamada-sensei-wa *gakusei-o* home-*nakat*-ta
Yamada-teacher-Top student-Acc praise-Neg-Past
'Prof. Yamada didn't praise students.'
[unambiguous: *∃ > Neg, Neg > ∃]

(8) a. Keisatu-wa *san-nin-izyoo-no tooboohan-o* taihosi-*nakat*-ta
police-Top 3-Cl-or.more-Gen fugitive-Acc arrest-Neg-Past
'The police did not arrest three or more fugitive criminals.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]
b. Keisatu-wa *tooboohan-o san-nin-izyoo* taihosi-*nakat*-ta
police-Top fugitive-Acc 3-Cl-or.more arrest-Neg-Past
[ambiguous: 3 or more > Neg, Neg > 3 or more]
c. Keisatu-wa *san-nin-izyoo tooboohan-o* taihosi-*nakat*-ta
police-Top 3-Cl-or.more fugitive-Acc arrest-Neg-Past
[unambiguous: *3 or more > Neg, Neg > 3 or more]

Thus the above facts lead us to the generalization that only presuppositional object QPs may have wide scope over negation. Now our next task is to explain why this is so.

5.3 A Functional Projection for Presuppositional Objects

In this section I extend Shibata's (2015) analysis of object DPs in Japanese, which we reviewed in Chapter 2, and propose a functional projection above Shibata's (2015) PrtP and below vP, which attracts what I call the feature [Pres], the feature that is borne exclusively by presuppositional DPs. I call the relevant projection Pres(uppositional)P. Thus the structure above VP of a sentence in Japanese looks like the following:[1]

[1] The proposal illustrated in this section is a modified version of the one presented in Homma (2019), where the [Pres] and the [Prt] feature are assumed to appear on a single head.

(9) $[_{TP}\ DP_{SUBJ}\ [_{vP}\ \ldots\ \mathbf{[_{PresP}}\ \ldots\ [_{PrtP}\ \ldots\ [_{VP}\ DP_{OBJ}\ V]]]]]$

The head of PresP accommodates the feature [Pres], which serves as a probe and attracts the movement of the object DP with the corresponding [Pres] feature. I also assume that those DPs that have a presuppositional reading optionally bear the [Pres] feature.

The presence of a functional category that licenses presuppositionality is supported by the fact that in Dutch optional movement of the object is triggered by its presuppositionality. Consider:

(10) a. dat de polite gisteren *veel taalkundigen* opgepakt heeft
that the police yesterday many linguists arrested has
'that the police arrested many linguists yesterday'
b. dat de polite *veel taalkundigen* gisteren opgepakt heeft
that the police many linguists yesterday arrested has
(De Hoop (1996))

While the object QP *veel taalkundigen* 'many linguists' is adjacent to the verb *opgepakt* 'arrested' in (10a), the object QP occurs to the left of the adverb *gisteren* 'yesterday' in (10b). As observed in De Hoop (1996), among others, this difference in word order affects the interpretation of the object QP. The object QP in (10a) has two different readings, a presuppositional and a nonpresuppositional reading. It can refer to many in the set of linguists established in the preceding context (the presuppositional reading), while it can also have the reading where such a particular set of linguists is not assumed to exist (the nonpresuppositional reading). In contrast, the object QP in (10b) is obligatorily interpreted as presuppositional: it may only refer to a subset of the particular set of linguists. In fact, a bare plural DP, which can only have a nonpresuppositional reading, must be adjacent to the verb, as in (11):

(11) a. dat de polite gisteren *taalkundigen* opgepakt heeft
that the police yesterday linguists arrested has
'that the police arrested many linguists yesterday'
b. * dat de polite *taalkundigen* gisteren opgepakt heeft
that the police linguists yesterday arrested has
(De Hoop (1996))

This fact can be captured by positing a functional projection that probes and attracts the movement of a presuppositional object DP. It is reasonable to assume the clause structure in (12), which lacks PrtP, for Dutch since the subject and the object in Dutch do not have overt Case-particles, unlike those in Japanese that do.

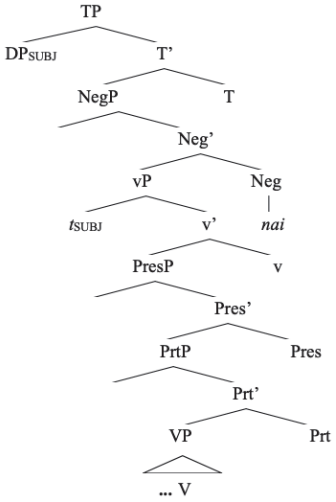
(12) $[_{TP}\ DP_{SUBJ}\ [_{vP}\ \ldots\ \mathbf{[_{PresP}}\ \ldots\ [_{VP}\ Adv\ [_{VP}\ DP_{OBJ}\ V]]]]]$

An object with a presuppositional reading may have the feature [Pres], which enters into the probe-goal relation with the corresponding [Pres] on the head Pres by moving into [Spec, PresP], crossing over the adverb. This enables the presuppositional object to move to the left of the adverb as in (10b). In contrast, a nonpresuppositional DP cannot bear the [Pres] feature and thus cannot move into [Spec, PresP]. This is why the nonpresuppositional reading is not allowed in (10b) and why a bare plural DP cannot move to the left of the adverb in (11b).

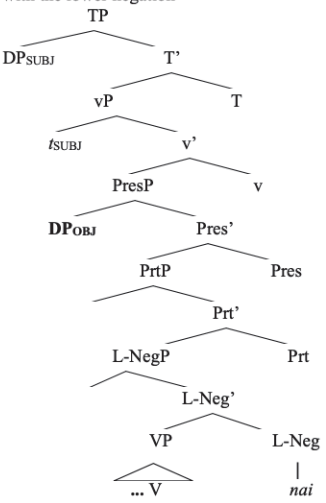
In addition to the existence of the functional projection PresP as proposed in (9), the other assumption that we adopt is that there are two distinct syntactic positions for negation in Japanese, one between the TP and the vP projection, as we assumed in Chapter 4, and the other between the vP and the VP projection. The idea that there is more than one position for negation has been entertained by some linguists (Takubo (1985), Kataoka (2006), Kishimoto (2007, 2008)), although the precise syntactic locations for negation vary among them. Here we assume that there is a lower negative projection lying immediately above VP (Homma (1998), Han, Storoshenko and Sakurai (2004), Shibata (2015)), which we represent as L(ower)-NegP, in addition to the negative projection immediately above vP that we have assumed since Chapter 4.

If we combine the above two assumptions, the structure of a negative sentence in Japanese is represented either as (13a) or (13b):

(13) a. a sentence with the higher negation



b. a sentence with the lower negation



Now let us consider how the above proposal can account for the scope facts in Japanese in (2-4). Since the Type 1 QP in (2a) and the NP-FQ in (2b) have a presuppositional reading, they can be raised into [Spec, PrtP] for Case-checking and then into [Spec, PresP] to have their [Pres] feature checked. They may also remain in [Spec, PrtP] without moving to [Spec, PresP] since the [Pres] feature can be borne optionally and that these QPs may also have a nonpresuppositional reading. These two derivations are illustrated in (14):

(14) a. [keisatu-wa [$_{PresP}$ [**3-nin-izyoo-no tooboohan-o**]$_i$ [$_{PrtP}$ t_i, [$_{L\text{-}NegP}$ [$_{VP}$ t_i V] **Neg**]]] -ta]

[Pres] checked [Prt] checked

b. [keisatu-wa [$_{PresP}$ [$_{PrtP}$ [**3-nin-izyoo-no tooboohan-o**]$_i$ [$_{L\text{-}NegP}$ [$_{VP}$ t_i V] **Neg**]]] -ta]

[Prt] checked

In Chapter 4 we proposed the principle of scope determination:

(15) Scope Principle:
QP$_1$ takes scope over QP$_2$ iff the head of the SI chain of QP$_1$ c-commands the head of the SI chain of QP$_2$.[2]

[2] For the sake of convenience, the term "QP" in (15) refers not only to quantificational DPs, but also to such scope-taking elements as negation and modal expressions.

An SI position and an SI chain are defined as follows:

(16) SI positions:
An *SI position* of X is a position where X's semantic interpretation is established by
i) a grammatical feature that is semantic in nature or
ii) a thematic role.

(17) SI chains and SI heads:
An *SI chain* of X consists of the SI positions in the set of positions of the syntactic chain of X. The head of an SI chain (the *SI head*) is the topmost SI position of the SI chain.

Now since the [Pres] feature is, precisely speaking, not a feature that establishes the interpretation of the moved object QP, let us modify the definition of (14) and propose the modified version of it in (18):

(18) SI positions (modified):
An *SI position* of X is a position where X is licensed by
i) a grammatical feature that is semantic in nature or
ii) a thematic role.

The "licensing of X by a grammatical feature that is semantic in nature" here means that the movement of X is attracted by that grammatical feature. This includes the movement of a subject and an object DP by the topic feature, as well as the movement of an object DP by the [Pres] feature. At the same time it excludes the movement into [Spec, PrtP] by the Case feature since the Case feature primarily has to do with DPs' morpho-syntactic property, not their semantic interpretation.

Thus by the definition of SI positions thus modified in (18), [Spec, PresP] is an SI position whereas [Spec, PrtP] is not. Thus for the object in [Spec, PresP] in (14a), that position is an SI position and the SI head for the object. By Scope Principle in (15) it takes wide scope over negation, since the object in [Spec, PresP] c-commands the lower negation. On the other hand, the scope position for the object in [Spec, PrtP] in (14b) is as low as its underlying position in VP since [Spec, PrtP] cannot be an SI position and thus cannot be a scope position for the object. In this case it is negation that takes wide scope since it is negation that c-commands the sole SI position of the object.

This explains why the Type 1 QP in (8a) and the NP-FQ in (8b) may take wide and narrow scope with respect to negation, since these types of QP may have a presuppositional reading and thus can be moved to [Spec, PresP].

In contrast, the bare DP in (7) and the QP with a prenominal FQ in (8c) can only move as

far as to [Spec, PrtP] and cannot reach [Spec, PresP] since they lack a presuppositional reading and thus may not bear the [Pres] feature. Thus they take scope only in their underlying position in VP. This is why these two objects cannot take wide scope over negation.

Now we have accounted for why an object NP-FQ may take wide scope over negation. In some examples, however, the object NP-FQ has difficulty in taking scope over negation. Consider:

(19) a. Hanako-wa *hon-o* *ni-satu* kaw-*anakat*-ta
Hanako-Top book-Acc 2-Cl read-Neg-Past
'Hanako did not read three books/'
[unambiguous: ??2 > Neg, Neg > 2]

b. John-ga *enpitu-o* *san-bon* kaw-*anakat*-ta
John-Nom pencil-Acc 3-Cl buy-Neg-Past
'John did not buy three pencils.'
[unambiguous: *3 > Neg, Neg > 3] ((19b) from Hasegawa (1993))

Why are these examples unambiguous? We would like to suggest that the wide scope of the object (2/3 > Neg) in (19) is grammatically possible but absent due to the oddness of the situation that this reading would depict. For the object NP-FQ to take wide scope, it is necessary for it to have a presuppositional reading, but it seems somewhat difficult to imagine a situation that the 2 > Neg reading would depict. However, imagine a situation where Hanako was asked by someone to buy all the books in the list of books, but she could not buy all of them because she did not have enough money. She managed to buy eight books in the list of ten books, but the other two books were left unpurchased. If we imagine this situation for (19a), it is possible to interpret the object NP-FQ presuppositionally and sentence (19a) sounds acceptable with the 2 > Neg reading. Similarly, sentence (19b) is also odd with the 3 > Neg reading for a pragmatic reason. It is difficult to imagine one buying three particular pencils out of a set of pencils whose existence is presupposed in the speaker's mind.

5.4 An Empirical Consequence

In addition to a successful account of the correlation between presuppositionality and wide scope of object QPs, our proposal can also account for an interesting fact first pointed out by Ishii (1997, 1998) about the form of QPs with an FQ and their (non)presuppositionality.

Ishii (1997, 1998) observe that the object QP with a post-nominal FQ in (20) is ambiguous between a presuppositional and a nonpresuppositional interpretation.

(20) John-ga isoide [urenokot-ta hon-o] san-satu kaesi-ta
John-Nom quickly left.unsold-Past book-Acc 3-Cl return-Past
'John returned three unsold books quickly.'

[presuppositional, nonpresuppositional]

(Ishii (1997, 1998))

The object *urenokot-ta hon-o san-satu* 'three unsold books' may either refer to three in the set of unsold books that the speaker has in mind (the presuppositional reading), or to three unsold books that are not included in a particular set of books (the nonpresuppositional reading). Ishii then observes that if the post-nominal FQ is separated by a constituent such as an adverbial from its host noun, the object can only have the presuppositional reading.

(21) John-ga [urenokot-ta hon-o] isoide san-satu kaesi-ta
John-Nom left.unsold-Past book-Acc quickly 3-Cl return-Past
'John returned three unsold books quickly.'
[presuppositional, *nonpresuppositional] (ibid.)

In our analysis, the structure of (20) is represented either as (22a) or (22b), depending on the presuppositionality of the object:[3]

(22) a. [John-ga [isoide [$_{PresP}$ **[urenokot-ta hon-o san-satu]**$_i$ [$_{PrtP}$ t_i' [$_{VP}$ t_i kaesi]]] -ta]
[Pres] checked [Prt] checked

b. [John-ga [isoide [$_{PresP}$ [$_{PrtP}$ **[urenokot-ta hon-o san-satu]**$_i$ [$_{VP}$ t_i kaesi]]] -ta]
[Prt] checked

If the object is presuppositional, it may move into [Spec, PresP] to have its [Pres] feature checked ((22a)), or move only as far as to [Spec, PrtP], as in (22b). If it is nonpresuppositional, it can only end up being in [Spec, PrtP], as in (22b).

On the other hand, the sentence in (21), where the host nominal and the FQ are separated, can only have the following structure:

(23) [John-ga [$_{PresP}$ **[urenokot-ta hon-o]**$_j$ [isoide [$_{PrtP}$ [t_j' **san-satu**]$_i$ [$_{VP}$ t_i kaesi]]] -ta]
[Pres] of the host licensed
[Prt] of the whole object licensed

The derivation proceeds as follows. Firstly, the whole object (the host nominal and the FQ)

[3] Here I assume that VP-modifying adverbials may attach to functional projections above VP, as well as to VP.

urenokot-ta hon-o san-satu is raised to [Spec, PrtP] to have its Case-feature (the [Prt] feature) checked. Then the host nominal is raised into [Spec, PresP] to have its [Pres] feature checked, stranding the FQ in PrtP. This means that the raised host nominal must have the [Pres] feature, which in turn means that the raised host must be presuppositional. The presuppositionality of the host nominal, a constituent without a quantifier, means that this constituent is definite and is paraphrasable as "the unsold books." Indeed, in Dutch a definite object DP behaves in a fashion parallel to presuppositional QPs in that it can move to the left of an adverb.

(24) a. dat de politie gisteren *de taalkundigen* opgepakt heeft
that the police yesterday the linguists arrested has
'since the police arrested the linguists yesterday'
b. dat de politie *de taalkundigen* gisteren opgepakt heeft
that the police the linguists yesterday arrested has

The definite object *de taalkundigen* 'the linguists' can either move to the left of the adverbial ((24b)) or stay in its original object position ((24a)).

Thus we can account for the interpretive fact in (21) that the split object can only be presuppositional since for the object to be separated from its FQ, (23) is the only possible structure, where the moved host nominal has the [Pres] feature.

5.5 Scope of Object QPs and VP-Adjuncts

The account of the scope of object QPs and negation developed in the preceding section can be extended to capture the cases of scope interaction between an object QP and a VP-adjunct QP. Consider:

(25) *The police checked the surveillance cameras equipped throughout the city to find where the fugitives had gone.*
Keisatu-ga *san-nin-izyoo-no tooboohan-o*$_i$ *subete-no kansi-kamera-de* t_i
police-Nom 3-Cl-or.more-Gen fugitive-Acc every-Gen surveillance-camera-with
kakuninsi-ta
confirm-Past
'The police found three fugitive criminals with every surveillance camera.'
[ambiguous: 3 or more > ∀, ∀ > 3 or more]

This example involves the object QP *san-nin-no tooboohan-o* having undergone "short-scrambling" from its original position to the left of the VP-adjunct *subete-no kansi-kamera-de*. As we see, this sentence is ambiguous with respect to the scope of the object QP and the VP-adjunct. It may refer to the situation where there are three or more fugitives in total and every surveyllance camera in the city captured the view of the same individuals (the "3 or more > ∀"

reading). It may also be true if each of the surveyllance cameras captured the view of a different set of three or more individuals (the "∀ > 3 or more" reading). This ambiguity is also observed with an object NP-FQ:[4]

(26) *In the same context as (25).*
Keisatu-ga *tooboohan-o san-nin-izyoo subete-no kansi-kamera-de* t_i
police-Nom fugitive-Acc 3-Cl-or.more every-Gen surveillance-camera-with
kakuninsi-ta
confirm-Past
'The police found three or more fugitive criminals with every surveillance camera.'
[ambiguous: 3 or more > ∀, ∀ > 3 or more]

In contrast, it is difficult, if possible, for an FQ-NP to take wide scope over a VP-adjunct, as in (27):

(27) *In the same context as (25)*
Keisatu-ga *san-nin-izyoo tooboohan-o subete-no kansi-kamera-de* t_i
police-Nom 3-Cl-or.more fugitive-Acc every-Gen surveillance-camera-with
kakuninsi-ta
confirm-Past
'The police found three fugitive criminals with every surveillance camera.'
[unambiguous: ??3 or more > ∀, ∀ > 3 or more]

This difference between the objects in (25-26) and that in (27) with respect to scope can be accounted for in our analysis. The structures of the examples in (25-26) is represented as follows:

---

[4] It is interesting to note in this regard that Shibata (2015) points out that an object NP-FQ in the post-subject position can bind a pronoun in a VP-adjunct as in (ib), in contrast to a pre-subject NP-FQ, which cannot bind a pronoun in the subject, as in (ia):

(i) a. *?[Kaisya-o mit-tu-izyoo]$_i$ [soko$_i$-no syain-ga] t_i hihansi-ta
company-Acc 3-Cl-or.more it-Gen employee-Nom criticize-Past
Lit. 'Three or more companies, its employee(s) criticized.'
b. Taroo-ga [kaisya-o mit-tu-izyoo]$_i$ soko$_i$-no syanai-de hihansi-ta
Taro-Nom company-Acc 3-Cl-or.more it-Gen in.building-in criticize-Past
'Taro criticized three or more companies in its building.'

As we discussed briefly in Chapter 4, Shibata shows that the pre-subject scrambling of an NP-FQ can only be a semantically vacuous movement, which is an instance of A'-movement. This is suggested by the impossibility of pronominal binding in (ia). On the other hand, he also shows that an NP-FQ may bind a pronoun in the post-subject domain ((ib)), which suggests that there is an A-position available for an object NP-FQ, which he identifies as [Spec, PrtP].

(28) a. [$_{TP}$ keisatu-ga [$_{vP}$ ... [$_{PresP}$ **Object$_i$** [$_{PrtP}$ t_i' [$_{VP}$ **subete-no kansi-kamera-de** [$_{VP}$ t_i V]]]]]

b. [$_{TP}$ keisatu-ga [$_{vP}$ ... [$_{PresP}$ [$_{PrtP}$ **Object$_i$** [$_{VP}$ **subete-no kansi-kamera-de** [$_{VP}$ t_i V]]]]]

In (28a) the object has undergone the movement into [Spec, PrtP] for Case-checking, followed by the movement into [Spec, PresP]. This structure is possible for (25) and (26) since the objects in these examples may have a presuppositional reading and thus bear the [Pres] feature. This structure yields the wide scope reading of the object since the SI head of the object [Spec, PresP] c-commands the VP-adjunct. (25) and (26) may also have the object remaining in [Spec, PrtP] as in (28b), which is the case irrespective of the presuppositionality of the object, as we have already proposed. This structure gives rise to the narrow scope reading of the object since in this case the SI head of object is identified as its original position inside VP.

In contrast to the objects in (25) and (26), the only possible position for the object FQ-NP in (27) is [Spec, PrtP], as in (28b), since an FQ-NP can only have a nonpresuppositional reading and thus may not bear the [Pres] feature.

Thus our analysis developed in this chapter can also account for the case of scope interaction between an object QP and a VP-adjunct, as well as the case of scope interaction between an object and negation.

5.6 Conclusion

In this chapter we have accounted for the scope interaction between an object QP and negation. We have proposed that the post-subject domain of the clause structure has the functional projection called PresP, to which only presuppositional objects may move to have its [Pres] feature checked. This assumption has accounted for the fact that only presuppositional object QPs, whether the QP is a Q-NP or an NP-FQ, may take wide scope over negation. This analysis has also accounted for the obligatory presuppositionality of the "split" NP-FQ.

Chapter 6
Inverse Scope in Japanese

6.1 Introduction

This chapter challenges the view that Japanese is a rigid scope language. We point out that a particular syntactic environment allows inverse scope of an object QP over a subject QP even in their basic order of Subject-Object in Japanese (Section 6.2). In order to account for this, we propose that Type 1 QPs may undergo the covert movement by the focus feature, in addition to the overt movement by the topic feature. We account for the (un)availability of inverse scope in terms of the interaction of the topic and the focus feature (Section 6.3). We then show in Section 6.4 that the QP scope paradigm in Japanese, discussed in Chapter 4, can be dealt with in terms of the topic feature and the covert movement of the focus feature. Section 6.5 points out another environment in Japanese that allows inverse scope. We also suggest in Section 6.6 that our approach can capture the variability of judgments on QP scope interaction. Section 6.7 provides a brief note on the condition that (dis)allows a presuppositional QP to occur in the particular environment discussed in Section 6.2.

6.2 Inverse Scope in Japanese

This section discusses instances of inverse scope in Japanese. By inverse scope, we mean those instances where the subject QP takes narrow scope under the object QP in the basic word order Subject-Object-V.[1] In what follows we point out that inverse scope may be obtained in the particular type of subordinate clauses that Ueyama (1998, 2007) calls *description clauses*, as opposed to *Predication clauses* including main clauses. Then we show that our analysis can correctly capture the possibility of inverse scope.

So far our analysis of QP scope in Japanese has been based on the observation that has been widely held since the works by Kuroda (1969/70) and Hoji (1985), who state that an object QP can take wide scope over a subject QP only if the former is scrambled to the left of the latter, but not in their basic word order. Thus the sentences in (1a) and (1a), in which the subject and the object are in their basic word order Subject-Object, can only have the interpretation where the subject takes wide scope over the object, while either QP can take scope over the other in (1b) and (2b) since the object QP is scrambled to the front of the subject QP:

(1) a. *Dareka-ga* *daremo-o* aisite i-ru
someone-Nom everyone-Acc love be-Pres

[1] The examples that we discuss in what follows all involve a transitive verb whose subject is generated in [Spec, vP], asymmetrically c-commanding the complement position of the verb where its object is generated. Thus we exclude those sentences where the subject is considered to be generated within VP, in a position lower than other arguments. We discuss a few such cases in 6.8 of this chapter.

[unambiguous: ∃ > ∀, *∀> ∃]

b. *Daremo-o dareka-ga* aisite i-ru
everyone-Acc someone-Nom love be-Pres
[ambiguous: ∃ > ∀, ∀> ∃]

(2) a. *San-nin-no sensei-ga subete-no gakusei-o* home-ta
3-Cl-Gen teacher-Nom every-Gen student-Acc praise-Past
'Three teachers praised every student.'
[unambiguous: 3 > ∀, *∀> 3]

b. *Subete-no gakusei-o san-nin-no sensei-ga* home-ta
every-Gen student-Acc 3-Cl-Gen teacher-Nom praise-Past
'Three teachers praised every student.'
[ambiguous: 3 > ∀, ∀ > 3]

Contrary to this observation, however, it is possible to construct examples where the subject QP can take narrow scope under the object QP in their basic order. The following examples, for instance, show that inverse scope is possible in certain kinds of subordinate clause:

(3) a. *San-nin-no sensei-ga subete-no gakusei-o* sidoosuru-no-wa
3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Gen-Top
hukanoo-da/muzukasii
impossible-is/difficult
'It is impossible/difficult for three professors to supervise every student.'
[ambiguous: 3 > ∀, ∀ > 3]

b. *The group of burglars were chased by the police, and finally*
Hutari-no keikan-ga hanbun-izyoo-no otoko-o kumihuseteiru-no-ga
2.Cl-Gen police.officer-Nom half-or.more-Gen man-Acc hold.down-Gen-Nom
mieta
could.see
'I could see two police officers holding down more than half of the men.'
[ambiguous: 2 > half or more, half or more > 2]

c. *At the venue of the summit conference,*
Hutari-no keikan-ga subete-no yoozin-o goeisure-ba mondai-wa
2.Cl-Gen police.officer-Nom every-Gen VIP-Acc guard-if problem-Top
oki-nai-hazuda
arise-Neg-should
'If two police officers guard every VIP, no problem should arise.'
[ambiguous: 2 > ∀, ∀ > 2]

These examples are all felt to be ambiguous between the relevant scope readings. In (3a), for example, the referents of the subject QP *san-nin-no sensei-ga* 'three teachers' can vary with respect to each referent of *subete-no gakusei-o* 'every student.' This is a situation described by the scope order Object > Subject. In contrast, the ambiguity of the scope readings of these two QPs disappears if we put them in a matrix clause. The examples in (4), where the two QPs appear in a matrix clause, can only be interpreted to have the Subject > Object scope reading.[2]

(4) a. *San-nin-no sensei-ga* *subete-no gakusei-o* sidoosi-ta
3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Past
'Three professors supervised every student.'
[unambiguous: 3 > ∀, *∀ > 3]

b. *The group of burglars were chased by the police, and finally*
Hutari-no keikan-ga *hanbun-izyoo-no otoko-o* kumihuse-ta
2.Cl-Gen police.officer-Nom half-or.more-Gen man-Acc hold.down-Past
'Two police officers held down half or more of the men.'
[unambiguous: 2 > half or more, *half or more > 2]

c. *At the venue of the summit conference,*
Hutari-no keikan-ga *hotondo-no yoozin-o* goeisi-ta
2.Cl-Gen police.officer-Nom most-Gen VIP-Acc guard-Past
'Two police officers guarded most of the VIPs.'
[unambiguous: 2 > most, *most > 2]

Now if the contrast in the availability of the inverse scope reading between the examples in (3) and those in (4) is a real one, how can we explain it? The answer, we propose, lies in the syntactic property of the embedded clauses in (3). The type of embedded clause involved in (3) is characterized in Ueyama (1998, 2007) as expressing *description* only, as opposed to clauses that express *Predication.* The former type of clause, which we henceforth call *description clauses*, includes the subordinate clauses embedded in such constructions exemplified in (3). The latter type of clause, which we call *Predication clauses*, is exemplified as such subordinate clauses as the complement clause of *syoomeisuru* 'to prove' and a conditional clause involving *-nara* 'if.' Ueyama's dichotomy of the two types of clause is

[2] The availability of the inverse scope reading in Japanese in the canonical word order of Subject – Object has also been pointed out by some linguists (Kitagawa (1990), Kuroda (1994), Kuno et al. (1999), Kuno and Takami (2002), Hayashishita (2004, 2013), Ueda (2004), Saito (2005)). In particular, Hayashishita (2004, 2013) point out a number of cases where the object takes inverse scope over the subject in a matrix clause. Contrary to Hayashishita's observations, however, my informants and I find it difficult, if not impossible, to obtain the inverse wide scope of the object QP over the subject in matrix clauses, while the inverse scope in the embedded clauses as illustrated in the text is found to be easier to obtain. We discuss the inverse scope in matrix clauses in Section 6.6.

based on Kuroda's (1972-73) two types of judgment. One type of judgment, which Kuroda calls *categorical judgment* or *Predication*, is expressed by a clause in which the phrase at the left edge expresses what the clause is about and constitutes the "topic" of the clause, leaving the rest of the clause as the "comment." The other type of judgment expressed by a clause, which Kuroda calls *thetic judgment* or *description*, does not have the topic-comment structure, but expresses a neutral description of the situation described by the clause.

6.3 An Account

6.3.1 Covert Focus Movement

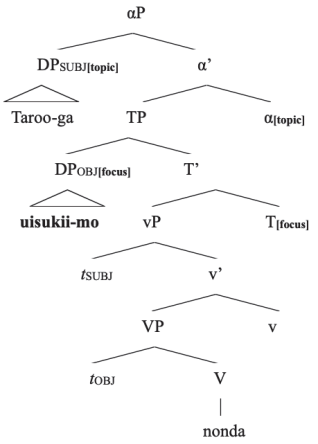
The observation that we made in the previous section suggests that in those cases where inverse scope is allowed the object QP may "move" to a position higher than the subject, creating its SI head there in such a way that it c-commands that of the subject QP. But if it is the subject QP that precedes the object in these cases, what kind of movement can that be?

We propose that in addition to the movement driven by the topic feature, QPs may undergo the covert counterpart of the movement driven by what Miyagawa (2010) calls the *focus* feature on T. Miyagawa (2010) proposes that a particular group of object DPs are string-vacuously moved to [Spec, TP] by the *focus* probe on T. As Miyagawa shows, DPs with the focus particle *mo*, such as the object *uisukii-mo*, is one such DP that undergoes this movement.

(5) Taroo-ga *uisukii-mo* non-da
Taro-Nom whisky-also drink-Past
'Taro also drank whisky.'

The structure of (5) is represented as (6):

(6)



Miyagawa provides the following examples as the evidence for the string-vacuous movement of the object.

(7) a. ? Gakusei-ga *uisukii-mo* san-nin non-da
student-Nom whisky-also 3-Cl drink-Past
'Three students also drank whisky.'
b. * Gakusei-ga *uisukii-o* san-nin non-da
student-Nom whisky-Acc 3-Cl drink-Past
'Three students drank whisky.'

As shown in (7), it is possible to separate the subject *gakusei-ga* and its FQ *san-nin* by the intervening object *uisukii-mo*. This can be accounted for, according to Miyagawa (2010), if the object *uisukii-mo* has undergone movement into [Spec, TP] triggered by the focus feature on T. In contrast, a non-focal DP such as *uisukii-o* in (7b) does not undergo the focus movement so that it cannot intervene the subject and its FQ.

We propose that QPs can optionally undergo the covert version of the movement triggered by the focus feature on T. As we did in Chapter 1, we take covert movement to be an instance of syntactic movement of constituents whereby the lower copy of the constituent is pronounced and the phonetic feature of the higher copy is deleted (Bobalijk (1995), among others), although we present covert movement as if it were a movement of the feature alone. Thus the structures of sentence (8), for example, can be represented as in (9):

(8) Taroo-ga subete-no hon-o yon-da
Taro-Nom every-Gen book-Acc read-Past

'Taro read every book.'

(9) a. [$_{TP}$ Taroo-ga$_i$ [$_{TP}$ **[focus]$_j$** [$_{vP}$ t_i [$_{PresP}$ [subete-no hon-o]$_j$ [$_{PrtP}$ t_j' [$_{VP}$ t_j yon-da]]]]]]
b. [$_{TP}$ Taroo-ga$_i$ [$_{TP}$ **[focus]$_j$** [$_{vP}$ t_i [$_{PresP}$ [$_{PrtP}$ [subete-no hon-o]$_j$ [$_{VP}$ t_j yon-da]]]]]]
c. [$_{TP}$ Taroo-ga$_i$ [$_{TP}$ [$_{vP}$ t_i [$_{PresP}$ **[subete-no hon-o]$_j$** [$_{PrtP}$ t_j' [$_{VP}$ t_j yon-da]]]]]]

The fact that the object QP in (8) has undergone the covert focus movement to TP is marked by the representation of the feature [focus] in TP. Note that if the object undergoes the movement into PresP, it may be followed by the covert focus movement: the focus feature moves from the object in PresP, as illlustrated in (9a). Since the movement into PresP is optional, as we assumed in Chapter 5, the covert focus movement can also occur from the object in PrtP. Moreover, since the covert focus movement is optional, sentence (8) may also have the structure in (9c).

We also propose that the covert focus movement may only apply to Type 1 QPs, but not to Type 2 QPs. This is reminiscent of the application of the movement by the topic feature. As we have already proposed, the movement by the topic feature into TP applies only to Type 1 QPs. Since the topic and the focus feature are both assumed to be inherited from C and lie on T (Miyagawa (2010)), it is reasonable to assume that they drive movement of the same type of DPs.

Another auxiliary proposal that we would like to make is the following constraint:

(10) A topic and a focus feature may not be in the following configuration in a single TP:
* [$_{TP}$ [focus] [[topic] [...]]]
(where [focus] and [topic] represent a feature on either an overtly-moved or covertly-moved constituent)

This means that although the topic and the focus feature lie on T and trigger movement of those constituents bearing the corresponding feature, the focus feature may not c-command the constituent bearing the topic feature if these features are on the same T. Thus for (8), where the subject has moved to TP by the topic feature, (11a) is the only way in which the focus feature may move: the focus feature may not move over the subject, as it violates the contraint in (10):

(11) a. [$_{TP}$ Taroo-ga$_i$ [$_{TP}$ **[focus]$_j$** [$_{vP}$ t_i [$_{PresP}$ [subete-no hon-o]$_j$ [$_{PrtP}$ t_j' [$_{VP}$ t_j yon-da]]]]]]
[topic] [focus]
b. * [$_{TP}$ **[focus]$_j$** [$_{TP}$ Taroo-ga$_i$ [$_{vP}$ t_i [$_{PresP}$ [subete-no hon-o]$_j$ [$_{PrtP}$ t_j' [$_{VP}$ t_j yon-da]]]]]]
[focus] [topic]

But where does this constraint come from? There are independent pieces of evidence for

the inherent hierarchical relation of the topic and the focus feature. It has been observed that a topic and a focus constituent in the CP-domain are subject to a restriction on their order. Firstly, Gungbe has the overt topic marker *yà* and the overt focus marker *wɛ́*. The constituents that these markers are attached to must be arranged in a fixed order:

(12) Gungbe
a. Ùn nywɛn dò Sɛtù yà MÀRÍ wɛ é dà.
1sg know that Setu Top Mary Foc 3sg marry
'I know that, as for Setu, he married MARY.'
b. * Ùn nywɛn dò Màrí wɛ Sɛtù yà é dà
(Aboh (2004) (cited in Haegeman (2009) and Rizzi (2014)))

As shown in (12), the constituent with the topic marker *Sɛtù yà* must precede the one with the focus marker *MÀRÍ wɛ́*. If the order of these constituents are reversed, the sentence is ungrammatical, as in (12b).

The order restriction is also found to be at work in English, as shown in (13):

(13) a. This book to ROBIN I gave.
b. * To ROBIN this book I gave.
(Culicover (1991) (cited in Haegeman (2009)))

In both examples in (13) the two constituents *this book* and *to Robin* are topicalized, where *this book* serves as the topic while *to Robin* is intended to have a focus interpretation. The order of these constituents obey the same constraint as the topic and the focus phrases in the Gungbe examples in (12): the topic (*this book*) must precede the focus (*to ROBIN*).

These facts suggest that the functional projections and the relevant features in these projections in the CP-domain that are responsible for topic and focus interpretation have an inherent hierarchical order, as illustrated in (14):

(14) [$_{\text{TopP}}$ this book$_i$ Top [$_{\text{FocP}}$ to ROBIN$_j$ Foc [$_{\text{TP}}$ I gave t_i t_j]]]
[TOPIC] **[FOCUS]**

The topic and the focus feature are assumed to originate in the CP-domain and to be inherited to T (Miyagawa (2010)). If the hierarchical order of the topic and the focus feature in the CP-domain reflects the inherent relation between these features, it is reasonable to assume that the topic and the focus feature inherited to the TP-domain must obey the same hierarchical order that they do in the CP-domain.[3]

[3] It may be argued that the same restriction governs the interpretations of the discourse topic *wa*. Kuno (1973) shows that two occurrences of constituents with *wa* are subject to a constraint on their

Having assumed the focus movement and the order constraint as above, let us turn to the accounts of the (un)availability of inverse scope observed at the outset of this chapter.

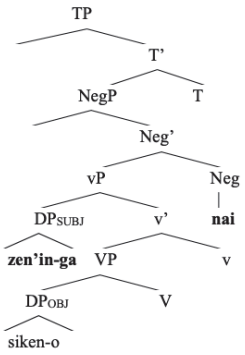
6.3.2 Syntax of Description Clauses

How are description clauses differentiated syntactically from main clauses? We propose that description clauses lack the topic feature, while Predication clauses, including main clauses, do have the topic feature. The lack of the topic feature in description clauses can be verified in the following way. Firstly, as discussed in Chapter 4, the subject's being in [Spec, TP] by the working of the topic feature is supported by the fact that the subject *zen'in* obligatorily takes scope over negation (Miyagawa (2010)):

(15) *Zen'in-ga* siken-o uke-*nakat*-ta
everyone-Nom test-Acc take-Neg-Past
'Everyone did not take the test.'
[unambiguous: ∀ > Neg, *Neg > ∀]

If description clauses lack the topic feature, the subject of a description clause is predicted to be able to take narrow scope under negation since it remains in [Spec, vP] without moving to [Spec TP]:

(16)



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interpretation:

(i) Watasi-wa tabako-wa sui-mas-u
I-Top tabacco-Top smoke-Pol-Pres
'Speaking of myself, I dó smoke.' (Kuno (1973))

Kuno points out that only the first occurrence of *wa* (*watasi-wa*) may have a thematic interpretation whereas the second *wa*-phrase only has a contrastive reading. If the thematic and the contrastive interpretation of *wa* may be regarded as a subcase of topic and focus, the restriction on the order of *wa*-phrases in (i) lends support to the hierarchical order of topic and focus.

This prediction is borne out since in description clauses the subject *zen'in* may take scope under negation:

(17) a. *Zen'in-ga* yoozin-o goeis-*inak*-ereba, mondai-ga oki-ru
everyone-Nom VIP-Acc guard-Neg-if problem-Nom arise-Pres
'If everyone does not guard a VIP, a problem will arise.'

b. *Zen'in-ga* yoozin-o goeisitei-*nai*-no-ga mie-ta
everyone-Nom VIP-Acc guard-Neg-Gen-Nom could.see-Past
'I saw everyone not guarding a VIP.'

c. *Since all our kids want to eat ice cream after lunch, I have to give all of them some ice cream. There will be no problem if everyone gets some ice cream, but ...*
Zen'in-ga aisukuriimu-o tabe-*nai*-no-wa hukanoo-da/muzukasii
everyone-Nom ice.cream-Acc eat-Neg-Gen-Nom impossible/difficult
'It is impossible/difficult for everyone not to eat some ice cream.'

In these examples, it is possible to interpret the subject *zen'in* to be under the scope of negation, while *zen'in-ga* in the subject position of matrix clauses may only take wide scope as in (15).

A second piece of evidence for the lack of the topic feature in description clauses comes from the presence of a Weak Crossover (WCO) effect in description clauses. Miyagawa (2010) characterizes [Spec, TP], the position to which a topic DP moves, as an A-position. Miyagawa supports this characterization of [Spec, TP] by pointing out the lack of an WCO effect with an object QP in this position:

(18) a. ?*Sakihodo e_i e_j yonda hito-ga futatu-izyou-no meiwaku meeru$_j$-o kesi-ta
just.now read person-Nom 2-more.than-Gen spam mail-Acc delete-Past
'The person who read them just now deleted more than two pieces of spam mail.'

b. Futatu-izyou-no meiwaku meeru$_j$-o sakihodo e_i e_j yonda hito-ga kesi-ta
2-more.than-Gen spam mail-Acc just.now read person-Nom delete-Past
Lit. 'More than two pieces of spam mail, the person who read them just now deleted.'

(Miyagawa (2010: 67-68))

Now if description clauses lack the topic feature to attract a DP to [Spec, TP], the scrambling of an object in description clauses cannot be an instance of A-movement, since the A-position [Spec, TP] is not available for the scrambled object. Therefore, it is predicted that the scrambling of an object QP in description clauses will exhibit a WCO effect. This prediction

is indeed borne out by the following examples pointed out by Ueyama (1998, 2007), in which the scrambled object QP exhibits a WCO effect:

(19) a. * Imasara dokoka huta-tu-no kaisya$_i$-ni soko$_i$-no torihikisaki-ga
at.this.late.date somewhere 2-Cl-Gen company-Dat it-Gen client.company-Nom
ayamaru-no-wa hukanoo-da
apologize-Gen-Top impossible-be
'It is impossible for two companies to be apologized by their client companies.'

b. * Mittsu-izyoo-no kaisya$_i$-ni soko$_i$-no torihikisaki-ga syazaisiteiru-no-ga
3.Cl-over-Gen company-Dat it-Gen client.company-Nom apologize-Gen-Nom
kikoeta
was.heard
'I heard more than three companies being apologized by their client companies.'

c. * Dokoka hutatu-no zidoosya-gaisya$_i$-o soko$_i$-no bengosi-ga uttae-tara,
somewhere 2.Cl-Gen car-company-Acc it-Gen lawyer-Nom sue-if
sugu sono-bengosi-tati-ni intabyuu-ni itte kudasai
quickly it-lawyer-Pl-Dat interview-to go please
'If two companies are sued by their lawyers, please go and interview the lawyers immediately.' ((a-c) from Ueyama (2007))

d.?* John-ni-sae [55%-no robotto$_i$-o [so-re$_i$-no sekkeisya]-ga
John-Dat-even 55%-Gen robot-Acc that-thing-Gen designer-Nom
kowasiteiru tokoro]-ga mieta rasii
destroying Comp-Nom could.see they.say
'They say that even John could see its designer destroying 55% of the robots.'
(Ueyama (1998))

In contrast, the WCO effect is circumvented in Predication clauses, including matrix clauses, as Ueyama points out:

(20) Predication clauses (the *-nara* conditional clause):
Dokoka hutatu-no zidoosya-gaisya$_i$-o soko$_i$-no bengosi-ga uttaeta-*no-nara*,
somewhere 2-Cl-Gen car.company-Acc it-Gen lawyer-Nom sue-Gen-if
sugu sono-bengosi-tati-ni intabyuu-ni itte kudasai
quickly it-lawyer-Pl-Dat interview-to go please
'If it is true that two companies are sued by their lawyers, please go and interview the lawyers immediately.'
(Ueyama (2007))

(21) Predication clauses (matrix clauses):

a. Dokoka hutatu-no kaisya$_i$-ni soko$_i$-no torihikisaki-ga ayamatta
somehere 2.Cl-Gen company-Dat it-Gen client.company-Nom apologized
Lit. 'Two companies, their client company apologized. (Two companies are such that their client company apologized them.)'

b. Mittsu-izyoo-no kaisya$_i$-ni soko$_i$-no torihikisaki-ga syazaisita
3.Cl-over-Gen company-Dat it-Gen client.company-Nom apologized
Lit. 'More than three companies, their client companies apologized.'

c. Dokoka hutatu-no zidoosya-gaisya$_i$-o soko$_i$-no bengosi-ga uttaeta
somewhere 2.Cl-Gen car.company-Acc it-Gen lawyer-Nom sued
Lit. 'Two companies, their lawyers sued.' (ibid.)

Thus the above consideration strongly suggests the lack of the topic feature on T in description clauses.

6.3.3 An Account: Scope is Liberal When the Clause Lacks the Topic Feature

If the narrow scope of the subject under negation and the presence of a WCO effect with the scrambling of the object QP in description clauses signal the lack of the topic feature in description clauses, this in turn means that the subject QP of a description clause remains in [Spec, vP] without being raised to [Spec, TP] by the topic feature, as opposed to the subject of a matrix clause that is raised to [Spec, TP] by the topic feature. The structures of (3a) and (4a) are represented as in (24) and (25), respectively

(22) (= (3a))
San-nin-no sensei-ga *subete-no gakusei-o* sidoosuru-no-wa
3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Gen-Top
hukanoo-da/muzukasii
impossible-is/difficult
'It is impossible/difficult for three professors to supervise every student.'
[ambiguous: 3 > ∀, ∀ > 3]

(23) (= (4a))
San-nin-no sensei-ga *subete-no gakusei-o* sidoosi-ta
3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Past
'Three professors supervised every student.'
[unambiguous: 3 > ∀, ∗∀ > 3]

(24) For (22):[4]

a. [$_{TP}$ **[focus]$_j$** [$_{vP}$ **san-nin-no sensei-ga** [$_{PresP}$ subete-no gakusei-o$_j$ sidoosuru]]]-no-wa
[focus] **[θ]** [Pres]
→ ∀ > 3

b. [$_{TP}$ [$_{vP}$ **san-nin-no sensei -ga** [$_{PresP}$ **subete-no gakusei-o** sidoosuru]]]-no-wa
[θ] **[Pres]**
→ 3 > ∀

(25) For (23):

a. * [$_{TP}$ **[focus]$_j$** [$_{TP}$ **san-nin-no sensei-ga$_i$** [$_{vP}$ t_i [$_{PresP}$ subete-no gakusei-o$_j$ sidoosi]]-ta]]
[focus] **[topic]** [θ] [Pres]

b. [$_{TP}$ **san-nin-no sensei-ga** [$_{TP}$ **[focus]$_j$** [$_{vP}$ t_i [$_{PresP}$ subete-no gakusei-o$_j$ sidoosi]]-ta]]
[topic] **[focus]** [θ] [Pres]
→ 3 > ∀

c. [$_{TP}$ **san-nin-no sensei-ga** [$_{TP}$ [$_{vP}$ t_i [$_{PresP}$ **subete-no gakusei-o** sidoosi]]-ta]]
[topic] [θ] **[Pres]**
→ 3 > ∀

Both structures in (24) are possible for sentence (22). In (24a) the object has undergone the covert focus movement to TP, over the subject in [Spec VP]. This movement is allowed since the topic feature is not involved and the movement of the focus feature does not violate the constraint in (10). The SI head of the object is the position of the focus feature while that of the subject is its underlying position in [Spec vP]. It is this derivation that yields the inverse scope of the object over the subject. (22) has another derivation in (24b), where the object QP does not undergo the focus movement. This yields the narrow scope reading of the object since its SI head [Spec, PresP] is c-commanded by that of the subject [Spec, vP].

In contrast, the covert focus movement of the object over the subject is not allowed in rigid scope sentences such as (23). This is illusterated in (25). In main clauses, the subject undergoes obligatory movement to [Spec, TP] triggered by the topic feature. Then the focus feature does not move over the subject since the subject has the topic feature, which prevents the focus feature from moving over it ((25a)). The only possible representations for (23) are

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[4] Besides the two representations in (24), (22) could have another derivation where it is the subject that undergoes the covert focus movement. If this happens, the structure of (22) is represented as follows:

(i) [$_{TP}$ **[focus]$_i$** [$_{vP}$ san-nin-no sensei-ga$_i$ [$_{PresP}$ **subete-no gakusei-o** sidoosuru]]]-no-wa
[focus] [θ] **[Pres]**

This derivation yields the wide scope of the subject over the object.

In what follows in the text, however, we do not discuss this possibility unless the availability of the wide scope of the subject is under dicussion.

thus (25b) and (25c). (25b) is the structure where the focus movement has occured but has not moved over the subject. This does not violate the constraint in (10) since the focus feature has not crossed the topic feature. (25c) is the case where the object has not undergone the focus movement. In either way, the SI head of the object is c-commanded by the SI head ([Spec, TP]) of the subject. This explains why the scope is rigid in matrix clauses.

Our analysis developed so far predicts that a Type 2 object QP cannot take wide scope over the subject in description clauses. This prediction seems to borne out. Compare the examples in (3), repeated here as (26), with those in (27):

(26) (= (3))

a. *San-nin-no sensei-ga* *subete-no gakusei-o* sidoosuru-no-wa
3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Gen-Top
hukanoo-da/muzukasii
impossible-is/difficult
'It is impossible/difficult for three professors to supervise every student.'
[ambiguous: 3 > ∀, ∀ > 3]

b. *The group of burglars were chased by the police, and finally*
Hutari-no keikan-ga *hanbun-izyoo-no otoko-o* kumihuseteiru-no-ga
2.Cl-Gen police.officer-Nom half-or.more-Gen man-Acc hold.down-Gen-Nom
mieta
could.see
'I could see two police officers holding down more than half of the men.'
[ambiguous: 2 > half or more, half or more > 2]

c. *At the venue of the summit conference,*
Hutari-no keikan-ga *subete-no* *yoozin-o* goeisure-ba mondai-wa
2.Cl-Gen police.officer-Nom every-Gen VIP-Acc guard-if problem-Top
oki-nai-hazuda
arise-Neg-should
'If two police officers guard every VIP, no problem should arise.'
[ambiguous: 2 > ∀, ∀ > 2]

(27) a. *San-nin-no sensei-ga* *gakusei-tati-o subete* sidoosuru-no-wa
3-Cl-Gen teacher-Nom student-Pl-Acc every supervise-Gen-Top
hukanoo-da/muzukasii
impossible-is/difficult
'It is impossible/difficult for three professors to supervise every student.'
[unambiguous: 3 > ∀, *∀ > 3]

b. *The group of burglars were chased by the police, and finally*
Hutari-no keikan-ga *otoko-tati-o hanbun-izyoo* kumihuseteiru-no-ga
2.Cl-Gen police.officer-Nom man-Pl-Acc half-or.more hold.down-Gen-Nom
mieta
could.see
'I could see two police officers holding down more than half of the men.'
[unambiguous: 2 > half or more, *half or more > 2]

c. *At the venue of the summit conference,*
Hutari-no keikan-ga *yoozin-o subete* goeisure-ba mondai-wa
2.Cl-Gen police.officer-Nom VIP-Acc every guard-if problem-Top
oki-nai-hazuda
arise-Neg-should
'If two police officers gurard every VIP, no problem should arise.'
[unambiguous: 2 > ∀, *∀ > 2]

To my ear, the examples in (27) sound unambiguous with respect to the relevant readings: the object QP cannot take wide scope over the subject QP in the three sentences in (27), in contrast to the object QPs in (26). If this is a fact, then it can be accounted for by our analysis. In 6.3.1 we proposed that the covert focus movement applies only to Type 1 QPs, but not to Type 2 QPs. Since the object NP-FQs in (27) are Type 2 QPs, they do not undergo the covert focus movement. Thus the highest possible SI head for these objects is [Spec, PresP], which they can reach if they have the [Pres] feature. The possible positions for (27a) are illustrated as follows:

(28) a. [$_{TP}$ [$_{vP}$ **san-nin-no sensei-ga** [$_{PresP}$ **gakusei-tati-o subete** [$_{Prt}$ t_i' [$_{VP}$ t_i sidoosuru]]]]]
[*θ*] **[Pres]**
→ 3 > ∀

b. [$_{TP}$ [$_{vP}$ **san-nin-no sensei-ga** [$_{PresP}$ [$_{Prt}$ gakusei-tati-o subete$_i$ [$_{VP}$ ***t*$_i$** sidoosuru]]]]]
[*θ*] **[*θ*]**
→ 3 > ∀

The only possible positions for the object NP-FQ are [Spec, PresP] and [Spec, PrtP]. In the former case, the object has the [Pres] feature so that its SI head is [Spec, PresP]. In the latter, the SI head is the object's original position in VP. In either case the SI head of the object is asymmetrically c-commanded by that of the subject. This explains why the object NP-FQs in (27) cannot take inverse scope over the subject, as opposed to the object QPs in (26).

6.4 Scope Interaction in the Object-Subject Order Revisited

In this chapter we have proposed that Type 1 QPs may undergo covert focus movement while Type 2 QPs may not. Before proceeding, a comment is in order as to whether the employment of covert focus movement will affect our explanation of the scope interaction in those cases where the object QP is scrambled to the left of the subject QP. Recall the following paradigm of QP-QP scope interaction between a subject and an object QP:

(29) a. *San-nin-no gakusei-ga subete-no siken-o* uke-ta
3-Cl-Gen student-Nom every-Gen test-Acc take-Past
'Three students took every exam.'
[unambiguous: 3 > ∀, *∀ > 3]

b. *Subete-no siken-o san-nin-no gakusei-ga* uke-ta
every-Gen test-Acc 3-Cl-Gen student-Nom take-Past
Lit. 'Every exam, three students took.'
[ambiguous: 3 > ∀, ∀ > 3]

In this chapter we have accounted for the nonambiguity of (29a) by appealing to the impossibility of the covert focus movement of the object QP over the subject. The structure of example (29a) is represented as follows:

(30) a. * [$_{TP}$ **[focus]$_j$** [$_{TP}$ **sannin-no gakusei-ga$_i$** [$_{vP}$ t_i [$_{PresP}$ [subete-no siken-o]$_j$ uke]]-ta]]
[focus] **[topic]** [θ] [Pres]

b. [$_{TP}$ **sannin-no gakusei-ga$_i$** [$_{TP}$ **[focus]$_j$** [$_{vP}$ t_i [$_{PresP}$ [subete-no siken-o]$_j$ uke]]-ta]]
[topic] **[focus]** [θ] [Pres]
→ 3 > ∀

c. [$_{TP}$ **sannin-no gakusei-ga$_i$** [$_{TP}$ [$_{vP}$ t_i [$_{PresP}$ **[subete-no siken-o]$_j$** uke]]-ta]]
[topic] [θ] **[Pres]**
→ 3 > ∀

The possible structures for (29b), on the other hand, are representend as follows:

(31) a. [$_{XP}$ [subete-no siken-o]$_j$ [$_{TP}$ **sannin-no gakusei-ga$_i$** [$_{TP}$ **[focus]$_j$** [$_{vP}$ t_i
[topic] **[focus]** [θ]
[$_{PresP}$ t_j uke]]-ta]]
[Pres]
→ 3 > ∀

b. [$_{XP}$ [subete-no siken-o]$_j$ [$_{TP}$ **sannin-no gakusei-ga$_i$** [$_{vP}$ t_i [$_{PresP}$ ***t*$_j$** uke]]-ta]]
[topic] [θ] **[Pres]**
→ 3 > ∀

c. [$_{TP}$ **[subete-no siken-o]$_j$** [$_{TP}$ **[focus]$_i$** [$_{vP}$ sannin-no gakusei-ga$_i$ [$_{PresP}$ t_j uke]]-ta]]
[topic] **[focus]** [*θ*] [Pres]
→ ∀ > 3

d. [$_{TP}$ **[subete-no siken-o]$_j$** [$_{vP}$ **sannin-no gakusei-ga$_i$** [$_{PresP}$ t_j uke]]-ta]]
[topic] **[*θ*]** [Pres]
→ ∀ > 3

In (31a, b), the subject with the topic feature has moved to TP, while the object has undergone a "non-topic" A'-movement in the sense we discussed in Chapter 4. Here the focus feature of the object, if it launches one, cannot move over the subject due to the order constraint on the topic and the focus feature. These representations yield the wide scope of the subject. On the other hand, the derivations in (31c, d), where the object has undergone the movement by the topic feature, yield the wide scope of the object since the surface position of the object, where its topic feature is licensed, is higher than any of the subject's SI head (the positions marked by [focus] and [*θ*]). These derivations give rise to the wide scope of the object QP.

The structure of (32), a sentence with an object NP-FQ, is represented as in (33):

(32) *Booru-o huta-tu* daremo-ga ket-ta.
ball-Acc 2-Cl everyone-Nom kick-Past
'Everyone kicked two balls.'
[unambiguous: ∀ > 2, *2 > ∀]

(33) a. [$_{XP}$ [booru-o huta-tu]$_j$ [$_{TP}$ **daremo-ga$_i$** [$_{vP}$ t_i [$_{PresP}$ ***t*$_j$'** [$_{VP}$ t_j ket]]-ta]]
[topic] [*θ*] **[Pres]** [*θ*]
→ ∀ > 2

b. [$_{XP}$ [booru-o huta-tu]$_j$ [$_{TP}$ **daremo-ga$_i$** [$_{vP}$ t_i [$_{PresP}$ [$_{VP}$ ***t*$_j$** ket]]-ta]]
[topic] [*θ*] **[*θ*]**
→ ∀ > 2

Recall from Chapter 4 that an NP-FQ, a Type 2 QP, cannot undergo the movement by the topic feature, which makes it obligatory for the subject to undergo this movement. Thus the SI head of the scrambled object NP-FQ is either [Spec, Pres], if it can have a presuppositional reading, or its underlying theta position in VP. In either way, the SI head of the subject [Spec, TP] is higher than that of the object. The NP-FQ object does not undergo the covert focus movement, either, since the focus feature is borne only by Type 1 QPs. This makes (32) unambiguous with respect to the relevant scope readings.

Turning to the scope interpretation of description clauses with the Object-Subject order, the scope ambiguity is maintained when the object is scrambled to the left of the subject, as shown in (34):[5]

(34) a. *Subete-no gakusei-o san-nin-no sensei-ga* sidoosuru-no-wa muzukasii
every-Gen student-Acc 3-Cl-Gen teacher-Nom supervise-Gen-Top difficult
'It is difficult for three professors to supervise every student.'
[ambiguous: 3 > ∀, ∀ > 3]

b. *The group of burglars were chased by the police, and finally*
Hanbun-izyoo-no otoko-o hutari-no keikan-ga kumihuseteiru-no-ga
half-or.more-Gen man-Acc 2.Cl-Gen police.officer-Nom hold.down-Gen-Nom
mieta
could.see
'I could see two police officers holding down more than half of the men.'
[ambiguous: 2 > half or more, half or more > 2]

c. *At the venue of the summit conference,*
Hotondo-no yoozin-o hutari-no keikan-ga goeisiteiru-no-ga mieta
most-Gen VIP-Acc 2.Cl-Gen police.officer-Nom guarding-Gen-Nom could.see

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[5] With respect to the scope pattern in description clauses, Ueyama (1998) makes a quite different observation from the ones made in the present section. She observes that the scope order of the subject and the object QPs is invariably Subject > Object in description clauses irrespective of their surface word order. Thus the following examples, as Ueyama (1998) observes, are both unambiguous with the Subject > Object (Dative) the only reading:

(i) a. Kono-gakusei-ni-wa *hutari-izyoo-no hito-ga* *kanarino-kazu-no seizika-ni*
this-student-Dat-Top 2-Cl-over-Gen person-Nom large-number-Gen politician-Dat
tirasi-o watasiteiru-tokoro-ga mieta rasii
flyer-Acc handing.out-place-Nom could.see seem
'It seems that this student could see more than two people handing out flyers to quite many politicians.'
[unambiguous: two or more > many, *many > two or more]

b. Kono-gakusei-ni-wa *kanarino-kazu-no seizika-ni* hutari-izyoo-no hito-ga
this-student-Dat-Top large-number-Gen politician-Dat 2.Cl-over-Gen person-Nom
tirasi-o watasiteiru-tokoro-ga mieta rasii
flyer-Acc handing.out-place-Nom could.see seem
'It seems that this student could see more than two people handing out flyers to quite many politicians.'
[unambiguous: two or more > many, *many > two or more]

However, if we closely examine these particular examples, we can find that the (dative) object QP involved in (i) may be understood exclusively as denoting that the number of politicians is quite large, but not that the proportion of the politicians in a certain set of politicians is quite large. If so, this means that the QP *kanari-no kazu-no seizika-ni* must be a Type 2 QP, a QP that is incompatible with the topic or the focus feature. Then the lack of the wide scope reading of the object (dative) QP in both of the examples in (i) may be ascribed to the absence of the topic and the focus feature of the QPs involved.

'I could see two police officers guarding most of the VIPs.'
[ambiguous: 2 > most, most > 2]

Recall that description clauses lack the topic feature so that the scrambling of the object in (34) cannot be an operation triggered by the topic feature. However, the object QP may launch the focus feature covertly. If the focus feature is launched, it may be raised over the subject as in the case of the canonical order. This derivation yields the Object > Subject scope order. In the other derivation, the object does not launch the focus feature, in which case the object takes narrow scope under the subject. The two derivations of (34a), for example, are illustrated in (35). Note that the covert movement of the focus feature needs to be from the object position: otherwise the movement of the focus feature to [Spec, TP] from the scrambled object would be an illegitimate operation of lowering:

(35) a. [$_{TP}$ subete-no gakusei-o$_j$ [$_{TP}$ **[focus]$_j$** [$_{vP}$ **san-nin-no sensei-ga**$_i$ [$_{PresP}$ t_i sidoosuru]]]
[focus] **[θ]** [Pres]
→ ∀ > 3

b. [$_{TP}$ subete-no gakusei -o$_j$ [$_{TP}$ [$_{vP}$ **san-nin-no sensei-ga$_i$** [$_{PresP}$ **t_j** sidoosuru]]]
[θ] **[Pres]**
→ 3 > ∀

Thus our account can successfully capture the scope facts of both scope orders of QPs in description clauses.

6.5 Suppression of Topic Feature by Discourse Topic *Wa*

Besides description clauses, another syntactic environment where the inverse scope is observed is the sentence involving a *discourse topic* DP (in Miyagawa's (2010) terms), a DP with the particle *wa*. Consider the following examples:[6]

(36) a. Nihon-de-wa *hutari-no keikan-ga* *subete-no yoozin-o* goeisu-ru
Japan-in-Top 2.Cl-Gen police.officer-Nom every-Gen VIP-Acc guard-Pres
'In Japan, two police officers guard every VIP.'
[ambiguous: 2 > ∀, ∀ > 2]

b. Kono-daigaku-wa *san-nin-no sensei-ga* *subete-no gakusei-o* sidoosu-ru
this-college-Top 3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Pres
'At this college, three professors supervise every student.'
[ambiguous: 3 > ∀, ∀ > 3]

[6] I appreciate Yoshihito Dobashi (personal communication) for bringing this effect of the topic *wa* to my attention.

These examples are felt to be ambiguous between the indicated readings, as opposed to the following sentences without a *wa*-marked phrase, which can only have the wide scope reading of the subject QP, as we have observed:

(37) a. *Hutari-no keikan-ga* *subete-no* *yoozin-o* goeisi-ta
2.Cl-Gen police.officer-Nom every-Gen VIP-Acc guard-Past
'Two police officers guarded every VIP.'
[unambiguous: 2 > ∀, *∀ > 2]

b. *San-nin-no sensei-ga* *subete-no gakusei-o* sidoosi-ta
3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Past
'Three professors supervised every student.'
[unambiguous: 3 > ∀, *∀ > 3]

The difference in the interpretations between (36) and (37) can be ascribed to the presence/absence of the topic feature on T. As the following examples in (38) show, the subject QP to the right of a discourse topic *wa*-phrase may take narrow scope under negation:

(38) a. Sono-samitto-de-wa *zen'in-ga* yoozin-o goeis-*inakat*-ta
that-summit-at-Top everyone-Nom VIP-Acc guard-Neg-Past
'At that summit, everyone didn't guard a VIP.'
[ambiguous: Neg > ∀, ∀ > Neg]

b. Sono-daigaku-wa *zen'in-ga* gakusei-o sidoosi-*nai*
that-college-Top everyone-Nom student-Acc supervise-Neg-Pres
'At that college everyone doesn't supervise a student.'
[ambiguous: Neg > ∀, ∀ > Neg]

The availability of the Neg > ∀ reading with examples in (38) tells us that the subject QP *zen'in* may remain in [Spec, vP], which in turn means that the topic feature may be suppressed in the presence of a discourse topic *wa* phrase and the subject is not necessarily moved into [Spec, TP] by the topic feature. Since the subject QP may lack the topic feature, it is possible for the focus feature of the object QP to move over the subject to [Spec, TP]. Therefore, the following representations are both available for the examples in (36):

(39) a. XP-wa [$_{TP}$ **[focus]$_j$** [$_{vP}$ **QP-ga** [$_{PresP}$ QP-o$_j$ V]
[focus] **[*θ*]** [Pres]
→ QP-*o* > QP-*ga*

b. XP-wa [$_{TP}$ [$_{vP}$ **QP-ga** [$_{PresP}$ **QP-o** V]
[*θ*] **[Pres]**

→ QP-*ga* > QP-*o*

Thus the availability of the inverse scope reading in the presence of a discourse topic *wa*-phrase can be successfully captured.

6.6 Inverse Scope in Matrix Clauses

6.6.1 Sentences with a Type 2 QP Subject

In Chapter 4 we showed that a Type 2 QP may not bear the topic feature and thus cannot move into [Spec, TP]. This means that the canonical order Subject-Object with a Type 2 QP subject would lead to ungrammaticality since in the canonical order the subject must be raised to [Spec, TP] by the topic feature, as we saw in Chapter 4. However, examples with an NP-FQ subject in the order Subject-Object such as (40) have often been cited as grammatical sentences in the past literature.

(40) *Gakusei-ga san-nin* sake-o non-da
student-Nom 3-Cl liquor-Acc drink-Past
'Three students drank sake.'

If our analysis is on the right track, this fact means that the requirement that the subject be the topic of the clause in the canonical order Subject-Object is cancelled in (40) for some reason or other. If this is the case, then it is predicted that (41) may have an inverse scope reading for the same reason that inverse scope is allowed in description clauses. (41) allows the derivation in (42a), as well as the one in (42b):

(41) *Gakusei-ga san-nin subete-no siken-o* uke-ta
student-Nom 3-Cl every-Gen test-Acc take-Past
'Three students took every test.'

(42) a. [$_{TP}$ **[focus]$_j$** [$_{vP}$ **gakusei-ga san-nin** [$_{PresP}$ subete-no siken-o$_j$ uketa]]]]
[focus] **[θ]** [Pres]
b. [$_{TP}$ [$_{vP}$ **gakusei-ga san-nin** [$_{PresP}$ **subete-no siken-o$_j$** uketa]]]]
[θ] **[Pres]**

The subject NP-FQ is incompatible with the topic feature and thus remains in [Spec, vP], which is its SI head. The object may undergo the covert focus movement over the subject since nothing prevents the focus feature from moving over the subject. Hence inverse scope is predicted to be possible for (41).

This prediction is indeed borne out. Ueda (2004, 2013) observe that a subject NP-FQ may take narrow scope under an object QP, in contrast to a subject QP with a prenominal

quantifier. Her examples are in (43):

(43) a. *3-nin-no sensei-ga dono gakusei-mo* sidoosiiteiru
3-Cl-Gen teacher-Nom every student supervise
'Three teachers supervise every student.'
[unambiguous: 3 > every, *every > 3]
b. *Sensei-ga 3-nin dono gakusei-mo* sidoositeiru
teacher-Nom 3-Cl every student supervise
[ambiguous: 3 > every, every > 3] (Ueda (2013: 186))

Thus if Ueda's observation is correct, then these examples support our analysis.

So far I have treated the sentences with an NP-FQ subject in (40) and (41) as cases where the requirement on the subject's topichood is cancelled for some reason. It is interesting to note here that there are speakers of Japanese for whom this requirement is not relaxed. For these speakers, sentences with a Type 2 QP subject are judged to be low in acceptability. Firstly, some speakers find sentences with an NP-FQ in the subject position as in (44a) to be degraded in acceptability, as opposed to (44b) which is perfectly acceptable.[7]

(44) a. *Gakusei-ga san-nin* sake-o non-da
student-Nom 3-Cl liquor-Acc drink-Past
'Three students drank sake.'
b. *San-nin-no/Subete-no gakusei-ga* sake-o non-da
3-Cl-Gen/every-Gen student-Nom liquor-Acc drink-Past
'Three students/Every student drank sake.'

Secondly, sentences corresponding to (44a) are even more degraded in the Akita dialect, a dialect spoken in northern Japan, as observed in Terada (1990). Terada points out that the subject position of an agentive predicate in the Akita dialect does not allow an NP-FQ, as in (45), whereas the object position may accommodate one ((46)):

(45) a. * *Warasi-ga san-nin* nego-o tzikameda
child-Nom 3-Cl cat-Acc caught
'Three children caught cats.'
b. * *Onago-ga hutari* tagoyagi-o kutta
woman-Nom 2.Cl octopus.ball-Acc ate

[7] This tendency in judgment of the NP-FQ subject has been pointed out by Nobuhiro Kaga and Koichi Takezawa (personal communication). For me, a sentence such as (44a) is judged as only marginally acceptable. The existence of this type of speakers is also reported in Terada (1990), as we will see shortly.

'Two women ate octopus balls.' (Terada (1990: 35))

(46) a. Gagidaisyoo-ga *warasi-o san-nin* tadaida
child.boss-Nom child-Acc 3-Cl hit
'The boss of the kids hit three children.'
b. Sono gaikokuzin-ga *tagoyagi-o ninju* kutta
that foreigner-Nom octopus.ball-Acc 20(-Cl) ate
'That foreigner ate twenty octopus balls.' (ibid.)

The fact that an NP-FQ subject is not very acceptable or totally unacceptable can be accounted for by the following constraints that we proposed in Chapter 4:

(47) The Type 2 QP cannot have the topic feature.

(48) The topic feature on T must be realized overtly.

In (44a) and (45), the subject is an NP-FQ, a Type 2 QP, and therefore cannot have the topic feature. However, in order for a sentence to have the word order Subject-Object, the subject needs to be raised into [Spec, TP] in order to observe the constraint in (48). Therefore, sentence (44a) is degraded for some speakers and those in (45) are ungrammatical in the Akita dialect because they violate either (47) or (48).

6.6.2 On the Variability of Judgment on Quantifier Scope

So far we have observed that the scope of QPs in Japanese is "not so rigid" as has been observed in the literature, by pointing out the availability of inverse scope in description clauses, sentences with a discourse topic phrase, and sentences with a Type 2 QP subject.

The rigidity of scope in the order Subject – Object has also been called into question by some linguists. Among these linguists, Hayashishita (2013) points out a number of examples where the object QP takes inverse scope over the subject QP in a matrix clause without a discourse topic *wa*-phrase. One of his examples to this effect is the following:

(49) *San-nin-no sinsain-ga subete-no abusutorakuto-o* sadokusi-ta
3-Cl-Gen reviewer-Nom every-Gen abstract-Acc review-Past
'Three reviewers read every abstract.'
(Hayashishita (2013: 34))

Hayashishita reports that inverse scope is detected by some speakers in this example, although some other speakers do not share this judgment (Hayashishita (2013: 34)).

The presence of speakers who judge (49) to be ambiguous seems to pose a problem to

our analysis developed so far. A sentence such as (49) is predicted to be unambiguous since the Type 1 QP subject must obligatorily bear the topic feature and this makes it impossible for the focus feature of the object QP to be raised over the subject QP.

However, our approach to the "rigid" scope of QPs in the order Subject-Object also opens up the possibility of accounting for the existence of speakers who judge (49) to be ambiguous. Suppose that in (49) the clause has the option of lacking the topic feature for some reason, as in the case of a Type 2 QP subject. If T in this clause lacks the topic probe, it is possible for both the subject QP *san-nin-no sadokuin-ga* and the object QP *subete-no abusutorakuto-o* to lack the topic feature. In particular, since the subject may lack the topic feature and remain in [Spec, vP], the focus feature of the object, if it has one, may be covertly raised over the subject QP. This is shown in (50):

(50) [$_{TP}$ **[focus]$_j$** [$_{vP}$ **san-nin-no sinsain-ga** [$_{PresP}$ subete-no abusutorakuto-o$_j$ sadokusita]
[focus] **[*θ*]** [Pres]
→ ∀ > 3

Thus the presence of the inverse scope in (49) is correctly captured. The other reading Subj > Obj is yielded by the other derivation in which the focus feature movement does not occur:

(51) [$_{TP}$ [$_{vP}$ **san-nin-no sinsain-ga** [$_{VP}$ **subete-no abusutorakuto-o$_j$** sadokusita]
[*θ*] **[Pres]**
→ 3 > ∀

To sum up, for those speakers who allow inverse scope in the canonical order even in a main clause without a discourse topic *wa*-phrase, the main clause may be structured as if it is a description clause or a clause with a discourse topic *wa*-phrase. For the other group of speakers who do not allow inverse scope in the above sense the main clause is required to have a constituent bearing the topic feature. This structural difference captures the variability of judgments on quantifier scope among speakers, in the same manner as it accounts for the variability of judgments on quantifier scope in different types of clauses. If this analysis is on the right track, then the next question will be why there is this difference among speakers. However, I leave this question outside the scope of the present work for future research.

6.7 A Note on the Occurrence of Presuppositional QPs in Description Clauses[8]

In this chapter we have observed that inverse scope is allowed in description clauses in Japanese. However, Ueyama (1998) makes a quite different observation from ours that the scope order of the subject and the object QPs is invariably Subject > Object in description clauses irrespective of their surface word order. Thus the following examples, as Ueyama

[8] The contents of this section is a revised version of the material presented in Homma (2018).

(1998) observes, are both unambiguous with the Subj > Obj (Dative) the only reading:[9]

(52) a. Kono-gakusei-ni-wa *hutari-izyoo-no hito-ga* *kanarino-kazu-no seizika-ni*
this-student-Dat-Top 2.Cl-over-Gen person-Nom large-number-Gen politician-Dat
tirasi-o watasiteiru-tokoro-ga mieta rasii
flyer-Acc handing.out-place-Nom could.see seem
'It seems that this student could see more than two people handing out flyers to quite many politicians.'
[unambiguous: two or more > many, *many > two or more]

b. Kono-gakusei-ni-wa *kanarino-kazu-no seizika-ni* *hutari-izyoo-no hito-ga*
this-student-Dat-Top large-number-Gen politician-Dat 2.Cl-over-Gen person-Nom
tirasi-o watasiteiru-tokoro-ga mieta rasii
flyer-Acc handing.out-place-Nom could.see seem
'It seems that this student could see more than two people handing out flyers to quite many politicians.'
[unambiguous: two or more > many, *many > two or more] (Ueyama (1998))

I agree with Ueyama's observation that these sentences are both unambiguous with respect to the scope relation of the subject and the dative object. If the embedded clause of (52a) and (52b) occur as a main clause, as in (53), the QPs exhibit the usual pattern of scope: the subject obligatorily takes wide scope in the order Subject > (Dative) Object while the subject and the object each can take wide scope over the other in the order Dative Object > Subject:

(53) a. *Hutari-izyoo-no hito-ga* *kanarino-kazu-no seizika-ni* tirasi-o watasi-ta
2.Cl-over-Gen person-Nom large-number-Gen politician-Dat flyer-Acc hand-Past
'More than two people handed out flyers to quite many politicians.'
[unambiguous: two or more > many, *many > two or more]

---

[9] The unambiguity of scope in description clauses is also observed in Hayashishita (1999), who notes the following example:

(i) #John to Bill sorezore-ni ippon-no ya-ga itutu-no mato-ni sasatteiru-no-ga mie-ta
John and Bill each-Dat 1.Cl-Gen arrow-Nom 5.Cl-Gen target-Dat pierce-Gen-Nom seen-Past
'John and Bill each saw one arrow piercing five targets.' (Hayashishita (1999))
[unambiguous: 1 > 5, *5 > 1]

This particular example, Hayashishita notes, is pragmatically anomalous in that it can only describe the situation where there is a single arrow that is stuck into five different targets, a situation physically inconsistent with the real world. A situation where the five targets each have a different set of one arrow stuck into them would be described by the intended inverse scope reading, which is unavailable for (i).

b. *Kanarino-kazu-no seizika-ni hutari-izyoo-no hito-ga* tirasi-o watasi-ta
large-number-Gen politician-Dat 2.Cl-over-Gen person-Nom flyer-Acc hand-Past
'Lit. To quite many politicians more than two people handed out flyers.'
[ambiguous: two or more > many, many > two or more]

The unavailability of inverse scope in (52a) is problematic to our generalization that an object QP may take inverse scope in description clauses. What is more, it is somewhat surprising that (52b) disallows the wide scope of the fronted dative object, unlike (53b), which does allow wide scope of the fronted dative object. What is it then that disallows wide scope of the dative object in (52)?

The answer to this question seems to lie in the semantic property of QPs in description clauses and in the relevance of that semantic property to scope taking. Firstly, Ueyama (2007) points out that description clauses do not accommodate a quantifier that involves presupposition:[10]

(54) a. * *Kahansuu-no kaisya-ga* soko-no torihikisaki-ni syazaisite-iru-no-ga
majority-Gen company-Nom it-Gen client-Dat apologize-be-Gen-Nom
kikoe-ta
be.heard-Past
'I could hear a majority of the companies apologizing to their clients.'

b. * *Kahansuu-no kaisya-ga* soko-no torihikisaki-ni syazaisite-iru-no-o
a.majority-Gen company-Nom it-Gen client-Dat apologize-be-Gen-Acc
mikake-ta
see-Past
'I could see a majority of the companies apologizing to their clients.'

The QP *kahansuu-no kaisya-ga* 'a majority of the companies' is presuppositional in the sense that it presupposes the existence of a set of companies out of which it picks more than half of the members.

Secondly, as we have observed, wide scope cannot be taken by a nonpresuppositional QP. Consider:

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[10] Ueyama (2007) also notes that description clauses do not allow focus particles such as *dake* 'only' and *sae* 'even':

(i) a. **Zitensya-de-dake* iku-no-wa hukanoo-da
bicycle-by-only go-Gen-Top impossible-be
'It is impossible to go only by bicycle.'

b. **Huzisan-no tyoozyoo-ni-sae* denpatoo-o tateru-no-wa hukanoo-da
Mt..Fuji-Gen top-Dat-even radio.tower.Acc build-Gen-Top impossible-be
'It is impossible to build a radio tower even on the top of Mt. Fuji.'

(55) a. *Huta-tu-no booru-o* daremo-ga ket-ta.
2-Cl-Gen ball-Acc everyone-Nom kick-Past
'Everyone kicked two balls.'
[ambiguous: ∀ > 2, 2 > ∀]

b. *Booru-o huta-tu* daremo-ga ket-ta.
ball-Acc 2-Cl everyone-Nom kick-Past
'Everyone kicked two balls.'
[unambiguous: ∀ > 2, *2 > ∀]

A QP with a floated quantifier such as *booru-o huta-tu* in (55b) may only have a nonpresuppositional reading, while a QP with a prenominal quantifier (*huta-tu-no booru-o* in (55a)) may have either a presuppositional or a nonpresuppositional reading. The QP in (55b) may only refer to two balls newly introduced in the discourse, but not to two of the set of balls that is presupposed to exist prior to utterance. We have argued that nonpresuppositional QPs are Type 2 QPs, which lack the topic feature and thus cannot take wide scope in the pre-subject position.

Now observe (52) again, repeated here as (56):

(56) a. Kono-gakusei-ni-wa *hutari-izyoo-no hito-ga kanarino-kazu-no seizika-ni*
this-student-Dat-Top 2-Cl-over-Gen person-Nom large-number-Gen politician-Dat
tirasi-o watasiteiru-tokoro-ga mieta rasii
flyer-Acc handing.out-place-Nom could.see seem
'It seems that this student could see more than two people handing out flyers to quite many politicians.'
[unambiguous: two or more > many, *many > two or more]

b. Kono-gakusei-ni-wa *kanarino-kazu-no seizika-ni hutari-izyoo-no hito-ga*
this-student-Dat-Top large-number-Gen politician-Dat 2.Cl-over-Gen person-Nom
tirasi-o watasiteiru-tokoro-ga mieta rasii
flyer-Acc handing.out-place-Nom could.see seem
'It seems that this student could see more than two people handing out flyers to quite many politicians.'
[unambiguous: two or more > many, *many > two or more] (Ueyama (1998))

The semantic restriction that Ueyama (2007) notes for QPs in description clauses disallows the presuppositional reading of the QP *kanarino-kazu-no seizika-ni*. Indeed, I find that this QP strongly favors the nonpresuppositional reading, in contrast to the same QP in a main clause in (53b), which does seem to have a presuppositional reading. If so, then we may ascribe the unavailability of wide scope for this QP in (52) (= (56)) to the unavailability of a

presuppositional interpretation for QPs in description clauses. Furthermore, if the QP in (52) has only a nonpresuppositional reading, then it in turns means that this QP is unambiguously a Type 2 QP. Therefore, we can say that the dative object QP in (52) cannot take wide scope because it is a Type 2 QP.

Now if presuppositional QPs are disallowed in description clauses, as Ueyama (2007) notes, then why is it that the examples in (3), repeated here as (57), are acceptable in the first place, as they all involve a presuppositional QP in the object position?

(57) a. *San-nin-no sensei-ga subete-no gakusei-o* sidoosuru-no-wa
3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Gen-Top
hukanoo-da/muzukasii
impossible-is/difficult
'It is impossible/difficult for three professors to supervise every student.'
[ambiguous: 3 > ∀, ∀ > 3]

b. *The group of burglars were chased by the police, and finally*
Hutari-no keikan-ga hanbun-izyoo-no otoko-o kumihuseteiru-no-ga
2.Cl-Gen police.officer-Nom half-or.more-Gen man-Acc hold.down-Gen-Nom
mieta
could.see
'I could see two police officers holding down more than half of the men.'
[ambiguous: 2 > half or more, half or more > 2]

c. *At the venue of the summit conference,*
Hutari-no keikan-ga subete-no yoozin-o goeisure-ba mondai-wa
2.Cl-Gen police.officer-Nom every-Gen VIP-Acc guard-if problem-Top
oki-nai-hazuda
arise-Neg-should
'If two police officers guard every VIP, no problem should arise.'
[ambiguous: 2 > ∀, ∀ > 2]

I conjecture that the possibility of a presuppositional QP in these instances has to do with the informational status of the superset implied by the QP. Recall that the QP *kahansuu-no kaisya* cannot occur in a description clause.

(58) (= (54a))
**Kahansuu-no kaisya-ga* soko-no torihikisaki-ni syazaisite-iru-no-ga
a.majority-Gen company-Nom it-Gen client-Dat apologize-be-Gen-Nom
kikoe-ta
be.heard-Past
'I could hear a majority of the companies apologizing to their clients.'

A description clause denotes a single event, without the topic-comment structure (Ueyama (2007)). A presuppositional QP is one which presupposes the existence of a superset prior to the utterance. In other words, a presuppositional QP involves a piece of old information. We can say that this is the source of unavailability of a presuppositional QP in a description clause since a piece of old information comes from a preceding discourse and does not constitute part of the single event that a description clause is intended to denote.[11]

If this is so, then what if the superset implied by a presuppositional QP is not a genuine piece of old information but a part of the single event denoted by a description clause? Then we can circumvent the semantic restriction on presuppositional QPs in description clauses. Consider (57b) again:

(59) (= (57b))
The group of burglars were chased by the police, and finally
Hutari-no keikan-ga *hanbun-izyoo-no otoko-o* kumihuseteiru-no-ga
2.Cl-Gen police.officer-Nom half-or.more-Gen man-Acc hold.down-Gen-Nom
mieta
could.see
'I could see two police officers holding down more than half of the men.'
[ambiguous: 2 > half or more, half or more > 2]

This particular example sounds acceptable although it involves the presuppositional QP *hanbun-izyoo-no otoko-o*. On a closer inspection, I find it to be acceptable if the scene that the speaker witnessed involved the superset of men. In other words, this sentence sounds natural if the speaker saw a set of ten men in the scene and also saw seven of them each held down by two police officers, in which case the superset of ten men implied by the QP constitutes part of the single event denoted by the description clause (the embedded clause of the perception verb *mieru*).

At this point, I do not see how the superset implied by the QPs in (57a) and (57c) could constitute part of the single event denoted the description clauses containing them. Nonetheless, if the strategy discussed in the preceding paragraph to circumvent the semantic restriction noted by Ueyama (2007) is at work in (59), the same strategy should work for the presuppositional QPs in (57a) and (57c) as well.

[11] Ueyama (2007) does not explicitly provide a detailed account of the ban on presuppositional QPs in description clauses, but only hints at it by stating that "in the case of quantified expressions that involve presuppositionality, a clause containing them is not simply a description of a single event (translation by S. H.) (Ueyama (2007: 124))." The account developed in the present paragraph is based on my understanding of Ueyama's statement.

6.8 Other Cases of Inverse Scope in Japanese[12]

In the present chapter we have dealt with the cases of inverse scope in Japanese. What we have referred to as "inverse scope" is the scope taken by the object over the subject in their surface order Subject-Object. Furthermore, we have limited our discussion of inverse scope to those cases where the surface order Subject-Object corresponds their underlying order. The typical cases to which this applies to are those involving agentive transitive verbs. Agentive transitive verbs such as *keru* 'kick' and *goeisuru* 'guard' are assumed to take their agentive subject in [Spec, vP] and their object in the complement position of the verb (Chomsky (1995), cf. Kratzer (1993)). Thus if the subject and the object of such a verb appear in the order Subject-Object, they maintain their underlying order.

The cases of rigid scope that have often been pointed out, such as (60) below, typically involve agentive verbs. Thus when we say that the subject QP obligatorily takes wide scope over the object QP in the order Subject-Object, we are dealing with a case where the subject QP is configurationally higher than the object QP in the underlying structure as well.

(60) *San-nin-no sensei-ga* *subete-no gakusei-o* sidoosi-ta
3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Past
'Three professors supervised every student.'
[unambiguous: 3 > ∀, ∗∀ > 3]

What we have argued for in this chapter is that even with agentive verbs it is possible for the object QP to take wide scope over the subject QP in their surface order Subject-Object as in (61), as opposed to the widely-held observation that the scope of the subject and the object QP is rigidly Subject > Object in such a case.

(61) *San-nin-no sensei-ga* *subete-no gakusei-o* sidoosuru-no-wa
3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Gen-Top
hukanoo-da/muzukasii
impossible-is/difficult
'It is impossible/difficult for three professors to supervise every student.'
[ambiguous: 3 > ∀, ∀ > 3]

On the other hand, things are different with non-agentive verbs. There are verbs where the subject is underlyingly lower than the surface object. In sentences involving such verbs, the subject and the object QP do not exhibit scope rigidity. We would like to point out two such cases below.

One case that involves the underlying order Object-Subject is the construction involving

[12] The contents of this section is a revised version of the material presented in Homma (2018).

an object-experiencer psychological verb such as *yorokobaseru* 'please' and *kurusimeru* 'annoy,' as exemplified in (62):

(62) *Beru-no oto-ga sono kodomo-o* yorokob-ase-ta
bell-Gen sound-Nom that child-Acc please-Past
'The sound of a bell pleased the child.' (Matsuoka (2001))

This type of verb maps the subject and the object in the following way when the subject is interpreted as the Target of Emotion (Endo and Zushi (1993), Pesetsky (1995) and Matsuoka (2001)):

(63) [DP-ga$_i$ [$_{VP}$ DP-o [t_i yorokob-ase-ta]]]

That is, when the subject is interpreted as the Target of Emotion, it is an internal argument and is generated in the position lower than the other argument (Experiencer), which appears as the object. The order Subject-Object obtains as a result of the movement of the surface subject (the Target of Emotion argument) over the object (the Experiencer argument).

The subject and the object QP of this type of verb allow inverse scope in the order Subject-Object (Matsuoka (2001), Homma (2004)).

(64) a. *Huta-tu-no beru-no oto-ga san-nin-no kodomo-o* yorokob-ase-ta
two-Cl-Gen bell-Gen sound-Nom three-Cl-Gen child-Acc please-Past
'Two sounds of a bell pleased three children.' (Matsuoka (2001))
[ambiguous: 2 > 3, 3 > 2]

b. *Dareka-ga subete-no hito-o* kurusimete iru
someone-Nom every-Gen person-Acc annoy is
'Someone annoys every person.'
[ambiguous: ∃ > ∀, ∀ > ∃]

In both these examples, it is possible to understand the object QP as taking wide scope over the subject. (64a), for example, may be taken to describe the situation where each of the three children was pleased by a different set of two bell sounds, as well as the situation in which two sounds are such that they pleased three children (, whereas other bell sounds are such that they pleased only one or two children).

A second case of the Subject-Object order obtained via the movement of the subject over the object is sentences involving a motion verb accompanied by a path-denoting object, as exemplified in (65):

(65) a. *San-nin-no heitai-ga subete-no hasi-o* watat-ta
three-Cl-Gen soldier-Nom every-Gen bridge-Acc cross-Past
'Three soldiers crossed every bridge.'
[ambiguous: 3 > ∀, ∀ > 3]

b. *Hyaku-nin-izyoo-no zyookyaku-ga subete-no sekyuritiichekku-o* tuukasi-ta
hundred-Cl-or.more-Gen passenger-Nom every-Gen security.check-Acc pass-Past
'More than a hundred passengers passed every security check.'
[ambiguous: 100 or more > ∀, ∀ > 100 or more]

These examples are understood to be interpreted in either scope order. (65a), for example, may be taken to refer to three soldiers who crossed every bridge (Subject > Object), or to mean that for each of the set of bridges in question, it was crossed by a different set of three soldiers (Object > Subject).

Miyagawa (1989) shows that such motion verbs with a path-denoting object are indeed unaccusative verbs whose subject is the 'true' object, as illustrated in (66):

(66) [$_{TP}$ DP$_i$-ga [$_{VP}$ DP-o [t_i wataru]]]

Miyagawa defends this analysis by pointing out the fact that a floating quantifier to the right of the path object can be associated with the subject:

(67) *Heitai-ga* sono hasi-o *san-nin* watat-ta
soldiers-Nom that bridge-Acc three-Cl cross-Past
'Three soldiers crossed that bridge.'

If so, then we can ascribe the ambiguity of the examples in (65) with respect to scope to the two QPs' underlying configurational relation: the subject QP is underlyingly lower than the object QP, as depicted in (68):

(68) [$_{TP}$ san-nin-no heitai$_i$-ga [$_{VP}$ subete-no hasi-o [t_i watar-]] ta]

Now if the ambiguity observed in (64) and (65) is a real one, in contrast to the nonambiguity observed with such sentences with an agentive transitive verb as (60), then the question is how we can account for the ambiguity in (64) and (65) along the lines presented so far in this work. One thing that is common to (64) and (65) is that the underlying position of the subject is lower than that of the object. Besides this relation between the subject and the object, another characteristic common to these constructions is that the subject and the object are both internal arguments. In Chapter 4 (Section 4.5) we suggested that the movement to [Spec, TP] by the topic feature need not occur if the clause lacks an external argument.

(69) The movement to [Spec, TP] by the topic feature is obligatory unless the clause lacks an external argument.

We also proposed in Chapter 4 that DPs may undergo the non-topic movement to TP-domain, a movement without the probe by the topic feature. Furthermore, in Chapter 5 we proposed the movement of the object to [Spec, PresP] by the feature [Pres(uppositionality)]. If we assume these, then one conceivable analysis of the ambiguity of (64) and (65) will be the following. The underlying position of the subject and the object of these cases are represented as follows:

(70) $[_{TP}$ $[_{VP}$ DP-o [DP-ga V]]]

Since the subject may either move to [Spec, TP] by the topic feature or undergo the non-topic movement to TP-domain, the following two representations are both possible for the order Subject-Object:[13]

(71) a. $[_{TP}$ DP-ga $[_{PresP}$ DP_j-o $[_{VP}$ t_j [t_i V]]]]
[topic] **[Pres]** [θ] [θ]
→ DP-ga > DP-o
b. $[_{XP}$ DP_i-ga $[_{TP}$ $[_{PresP}$ DP-o $[_{VP}$ t_j [t_i V]]]]]
[Pres] [θ] **[θ]**
→ DP-o > DP-ga

If the subject is moved to [Spec, TP] by the topic feature while the object is moved to [Spec, PresP], then [Spec, TP] and [Spec, PresP] will be the SI head for the subject and the object, respectively. This will yield the scope order Subject > Object. On the other hand, if the subject undergoes the non-topic movement to the TP-domain and the object moves to [Spec, PresP], then the SI head of the subject is as low as its original position in VP. This yields the scope order Object > Subject.

If the analysis along these lines is on the right track, then our approach to QP scope can also deal with another case of inverse scope in Japanese, as well as the pattern that we have discussed in this chapter.

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[13] These two derivations do not exhaust the possible derivations for the Subject-Object order in (64) and (65). The object may also remain in [Spec, PrtP], in which case the scope position for the object is its underlying position in VP. However, the two derivations shown in (71) should suffice to account for the two scope interpretations in (64) and (65).

6.9 Summary of Chapter 6

In this chapter, we have seen that the introduction of the covert focus feature movement in our system enhances the empirical coverage of data. The covert focus feature allows us to capture the availability of inverse scope in a particular set of clause types. We have observed that inverse scope is available in what we have called description clauses and clauses with the discourse topic *wa*-phrase. The inverse scope is made possible in these types of clause since the subject QP does not have the topic feature, thus allowing the focus feature of the object QP to be raised covertly over the subject QP. We have also suggested that this process may also be at work in the main clause for some speakers, which provides these speakers with the possibility of inverse scope even in main clauses. Finally we have suggested an account of still another case of inverse scope observed in the constructions involving object-experienver psychological verbs and motion verbs with a path-denoting object.

Chapter 7
More on Movement by the Topic/Focus Feature

7.1 Introduction

In this chapter we justify our proposal of the movement of Type 1 QPs by the topic/focus feature on semantic and syntactic grounds. After a brief discussion on the difference between the topic and the focus feature, we consider in Section 7.2 the semantic properties of Type 1 QPs and their compatibility to the semantics of topic and focus. Then in Section 7.3 we provide some empirical support of our analysis by discussing the locality of the scope of Type 1 QPs and that of Type 2 QPs.

7.2 A Difference Between the Topic and the Focus Movement

In Section 6.3 we identified the proposed covert movement as the movement of the focus feature of a QP, but not that of the topic feature. In this section let us clarify why this is so. Recall that in Chapter 4 we provided the following piece of evidence that the clause-initial DP serves as the topic of the clause:

(1) (= (5) of Chapter 4)
A: Taroo-wa dare-o aisiteiru-no
Taro-Top who-Acc love-Q
'Who does Taro love?'
B: i) Hanako-desu. ??Taroo-ga Hanako-o aisitei-mas-u
Hanako-is Taro-Nom Hanako-Acc love-Pol-Pres
'Hanako. Taro loves Hanako.'
ii) Hanako-desu. Hanako-o Taroo-ga aisitei-mas-u
Hanako-is Hanako-Acc Taro-Nom love-Pol-Pres
Lit. 'Hanako. Hanako, Taro loves.'

(2) (= (6) of Chapter 4)
A: Dare-ga Hanako-o aisiteiru-no
who-Nom Hanako-Acc love-Q
'Who loves Hanako?'
B: i) Taroo-desu. Taroo-ga Hanako-o aisitei-mas-u
Taro-is Taro-Nom Hanako-Acc love-Pol-Pres
'Taro. Taro loves Hanako.'
ii) Taroo-desu. ??Hanako-o Taroo-ga aisitei-mas-u
Taro-is Hanako-Acc Taro-Nom love-Pol-Pres
Lit. 'Taro. Hanako, Taro loves.'

While these examples suggest the topicality of the clause-initial DP, they also show that a DP must not remain in its original position in order to serve as the topic of the clause. In terms of our analysis, this fact means that the topic feature must trigger overt movement of DPs, not the covert counterpart of them. If the topic feature were to trigger covert movement, we should predict that the second sentence in (1Bi) would be as acceptable as that in (1Bii) since a DP in a non-initial position of a clause would be able to serve as the topic by virtue of the covertly moved topic feature. That the second sentence in (1Bi) has a low acceptability tells us that the topic feature must trigger overt movement.

In contrast to a topic phrase, a focused phrase does not need to be in [Spec, TP] overtly. The following example can be easily understood to mean that Taro invited Hanako, but not Miyuki, to the dinner party:

(3) Mie-ga kinoo yuusyokukai-ni *Hanako-o* sasot-ta-no-da-ga,
Mie-Top yesterday dinner-party-Dat Hanako-Acc invite-Past-Gen-Cop-though
Miyuki-wa sasow-anakat-ta
Miyuki-Cont invite-Neg-Past
'Mie invited Hanako to the dinner party, but she did not invite Miyuki to it.'

The DP *Hanako-o* serves as the focus of the sentence by remaining in its original position of the sentence. If the focus feature always triggered the overt movement of a focused phrase, the DP *Hanako-o* would have to appear in the sentence-initial position, or to the left of the VP adverb *kinoo* in (53), by moving into [Spec, TP]. The fact that it does not need to can be captured by assuming that the movement of the focus feature does not necessarily accompany the overt movement of the focused phrase.

Thus we have a good reason to assume that the relevant covert movement is the movement of the focus feature, but not the topic feature.

7.3 Semantic Compatibility of Type 1 QPs with the Topic and the Focus Feature

Thus far we have proposed that the topic and the focus feature may be borne by Type 1 QPs but not by Type 2 QPs. Type 1 QPs are those QPs with a quantifier in [Spec, DP]. Thus it is the presence of a quantifier in [Spec, DP] that enables a QP to bear the topic or the focus feature.[1] This does not mean that the semantic property of Type 1 QPs is irrelevant to the semantic nature of the topic and the focus feature. Rather, the semantics of Type 1 QPs are amenable to that of these features, as the following considerations suggest.

[1] Note that non-quantificational DPs may also bear the topic feature if they are definite. In the case of definite DPs, we may say that a demonstrative in [Spec, DP] or the feature on D allows these DPs to have the topic feature. See our discussion in 4.3.

7.3.1 The Topic Feature and Type 1 QPs

Recall our analysis in Chapter 3 in which we showed that the presence of a quantifier in [Spec, DP] of a QP gives rise to the presuppositional interpretation of the QP. The presuppositional reading of a QP is one in which the QP refers to a subset of a set of entities referred to by the head noun. Under the presuppositional reading of the QP *san-nin-no gakusei-ga/o* 'three students,' for example, it refers to three students in the set of students that are mentioned in the previous discourse. Thus a presuppositional QP may be said to be "anaphoric" in the sense that it refers to information in the previous discourse. The topic feature of a DP (including that of a QP) provides the DP with a topic interpretation whereby the DP refers to what the sentence is about (Miyagawa (2010: 70, 74)) while the rest of the sentence represents the "comment" about the topic. We may say that a topic DP is anaphoric in the sense that it refers back to a piece of information that has been mentioned previously, as we have already seen in Section 3.1:

(4) A: Taroo-wa dare-o aisiteiru-no
Taro-Top who-Acc love-Q
'Who does Taro love?'
B: i) Hanako-desu. ??Taroo-ga Hanako-o aisitei-mas-u
Hanako-is Taro-Nom Hanako-Acc love-Pol-Pres
'Hanako. Taro loves Hanako.'
ii) Hanako-desu. Hanako-o Taroo-ga aisitei-mas-u
Hanako-is Hanako-Acc Taro-Nom love-Pol-Pres
Lit. 'Hanako. Hanako, Taro loves.'

(5) A: Dare-ga Hanako-o aisiteiru-no
who-Nom Hanako-Acc love-Q
'Who loves Hanako?'
B: i) Taroo-desu. Taroo-ga Hanako-o aisitei-mas-u
Taro-is Taro-Nom Hanako-Acc love-Pol-Pres
'Taro. Taro loves Hanako.'
ii) Taroo-desu. ??Hanako-o Taroo-ga aisitei-mas-u
Taro-is Hanako-Acc Taro-Nom love-Pol-Pres
Lit. 'Taro. Hanako, Taro loves.'

In (4Bii) and (5Bi), the topic phrase, namely the scrambled object in (4Bii) and the subject in (5Bi), is anaphoric in the sense that it refers back to the information denoted by the DP in the preceding fragment answer. Because of this similarity of the semantics of the Type 1 QP to that of the topic DPs in (4) and (5), we have a good reason to maintain that the topic feature is compatible with Type 1 QPs.

7.3.2 The Focus Feature and Type 1 QPs

As for the compatibility of the focus feature and Type 1 QPs, the following consideration of the semantics of Type 1 QPs provides us a good reason for our claim that they are compatible. Rooth (1985, 1992, 1996) characterize the focus phrase as one that evokes a set of alternative propositions. For example, sentence (6a), with a focus on the object *coffee*, evokes a set of alternative propositions (e.g. propositions such as *Ede wants tea.* and *Ede wants water.*) in the form of (6b), where the variable *x* could be assigned a value other than the referent of *coffee*.

(6) a. Ede wants [coffee]$_F$.
b. Ede wants *x*.

In other words, the referent of the focus DP *coffee* in (6a) is understood to be put in contrast with other referents such as tea and water in the set of objects that is established in the discourse where (6a) is uttered.

This semantic property of "contrastiveness" of focus phrases is shared by Type 1 QPs. Recall that the Type 1 QP is interpreted as presuppositional in the sense that it refers to a subset of a set of entities from the preceding discourse. For instance, the QP *san-nin-no gakusei-ga* 'three students' in (7), under its presuppositional reading (as a Type 1 QP), refers to three students belonging to the group of students mentioned previously.

(7) *San-nin-no gakusei-ga* ki-ta
3-Cl-Gen student-Nom come-Past
'Three students came.'

In asserting (7), the QP *san-nin-no gakusei-ga* is put in contrast with the other students of the same group of students, evoking a set of alternative propositions in the form of (8), in the sense that (7) implies that the other students in the same group did not come.

(8) *x* came.

Thus we can say that Type 1 QPs are another kind of focus phrase since Type 1 QPs share the semantic property of contrastiveness with focus phrases in the sense described above.

A question arises with QPs with a universal quantifier such as *subete-no* 'every.' This is because the QP such as the subject QP in (9), for example, refers to all the members of the set of students and thus its referents are apparently not put in contrast with any members belonging to the same set of students.

(9) Subete-no gakusei-ga ki-ta
every-Gen student-Nom come-Past
'Every student came.'

This problem, however, can be circumvented by saying that universal QPs are indeed put in contrast with a set of objects but that the relevant set in contrast is an empty set. For instance, the referents of the QP *subete-no gakusei-ga* is put in contrast with a set of students although this set does not contain any students.

The treatment of Type 1 QPs as a subcase of focused constituents can also be justified on empirical grounds by consideration of their phonological property. Focused constituents characteristically have a phonological prominence in the sense that they bear a focal stress. Thus the focused object DP *coffee* in (6a) is phonologically prominent in that it carries a phonological stress on it. As for QPs, it has been pointed out in the literature (Postal (1966), Milsark (1974, 1977), among others) that the English quantifiers *some* and *many* are stressed when the QP containing one of them have a presuppositional reading, while they are not stressed under the QP's non-presuppositional reading. Thus the subject of an individual-level predicate allows only the stressed *some* since it requires its subject to have a presuppositional reading ((10)). In contrast, only the unstressed form of *some* is allowed in the post-copular position of the *there*-construction since a DP in this position is required to be non-presuppositional ((11)).

(10) {SOME/*Sm} linguistics are tall.

(11) There are {*SOME/sm} salesmen in the bedroom.

These facts accord with our analysis of Type 1 QPs as focused phrases. A Type 1 QP has a presuppositional reading, in which the referents of the QP are put in contrast with other objects in the way parallel to the referents of focused phrases. Therefore, we have a good reason to believe that Type 1 QPs are focused phrases and thus are compatible with the focus feature.

Before closing this section, it should be stressed that it is not the mere fact that a QP is presuppositional that makes the QP compatible with the topic feature. In this section we have shown that the semantics of Type 1 QPs is compatible with the topic and the focus feature. On the other hand, we have also shown that Type 2 QPs may have a presuppositional interpretation, as well as a nonpresuppositional one. What is important here is that the presuppositionality of a QP alone does not ensure that the QP bears the topic or the focus feature. Rather, it is the presence of a quantifier in [Spec, DP] that enables the QP to have one of these features. Thus, even if a Type 2 QP has a presuppositional interpretation, it cannot have the topic/focus feature since it does not have a quantifier in its [Spec, DP].

7.3.3 A Brief Note on Contrastive Topic *Wa*

In the preceding section we have characterized Type 1 QPs as focus phrases based on their contrastive meaning in the sense that the referents of Type 1 QPs are put in contrast to the other objects in the same set of objects:

(12) *Hotondo-no gakusei-ga* kaet-ta
most-Gen student-Nom return-Past
'Most of the students went home.'

In (12), for example, the referents of *hotondo-no gakusei-ga* are in contrast to the other members who did not go home.

Note that the meaning of contrastiveness of Type 1 QPs should not be identified with the contrastive meaning associated with the *contrastive topic* marker *wa*, as exemplified below:

(13) *Hotondo-no gakusei-wa* kaet-ta
most-Gen student-Cont return-Past
'Most of the students went home.'

Indeed, while any quantifier in [Spec, DP] may yield a presuppositional, hence contrastive reading for the QP, the contrastive *wa* cannot be attached to just any QP, as discussed in Kaga (1991) and Hirose and Kaga (1997):[2]

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[2] The examples in Kaga (1991) and Hirose and Kaga (1997) involve the contrastive *wa* attached to floated quantifiers:

(i) a. * Mondai-o *zenbu-wa* toi-ta
problem-Acc all-Cont solve-Past
'I solved all the problems.'
b. Mondai-o *daibubun-wa* toi-ta
problem-Acc most-Cont solve-Past
'I solved most of the problems.'
c. * Mondai-o *takusan-wa* toi-ta
problem-Acc many-Cont solve-Past
'I solved many problems.'
d. Mondai-o *ikutuka-wa* toi-ta
problem-Acc some-Cont solve-Past
'I solved many problems.'

Since comparison needs to be made between the contrastive *wa* and the Case-particle in the text, I have provided examples with the contrastive *wa* attached to a QP with a prenominal quantifier. This does not affect the point made in Kaga (1991) and Hirose and Kaga (1997) since we obtain in (14) the same pattern of acceptability as (i).

(14) a. * Subete-no mondai-*wa* toi-ta
every-Gen problem-Cont solve-Past
'I solved all the problems.'
b. Hotondo-no mondai-*wa* toi-ta
most-Gen problem-Cont solve-Past
'I solved most of the problems.'
c. * Takusan-no mondai-*wa* toi-ta
many-Gen problem-Cont solve-Past
'I solved many problems.'
d. Ikutuka-no mondai-*wa* toi-ta
some-Gen problem-Cont solve-Past
'I solved some problems.'

Replacing the contrastive *wa* with a Case-particle makes the sentences all acceptable:

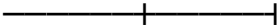
(15) a. Subete-no mondai-*o* toi-ta
every-Gen problem-Acc solve-Past
'I solved all the problems.'
b. Hotondo-no mondai-*o* toi-ta
most-Gen problem-Acc solve-Past
'I solved most of the problems.'
c. Takusan-no mondai-*o* toi-ta
many-Gen problem-Acc solve-Past
'I solved many problems.'
d. Ikutuka-no mondai-*o* toi-ta
some-Gen problem-Acc solve-Past
'I solved some problems.'

While I maintain that Type 1 QPs are contrastive in the sense of our analysis in the preceding sections, I adopt the analysis of the contrastive *wa* on QPs developed in Kaga (1991) and Hirose and Kaga (1997), in which the use of the contrastive *wa* on a QP puts the value of the QP on the quantifier scale in contrast to another value on the same quantifier scale. Therefore, the contrastiveness of the contrastive *wa* is distinct from that of Type 1 QPs. Type 1 QPs are contrastive in the sense that it is the referents of a QP, not its value on a quantifier scale, that are put in contrast to other referents.

Kaga (1991) and Hirose and Kaga (1997) propose that quantifiers form an *inherent contrastive pair* (henceforth, an IC pair) with each other on the quantifier scale. The quantifier scale is divided into two kinds, the *Cardinal Scale* and the *Set Scale*. Cardinal quantifiers such

as *ikutuka* and *ooku* form an IC pair on the Cardinal Scale. On the other hand, it is on the Set Scale that the strong quantifiers *hotondo* and *subete* form an IC pair separately from the cardinal quantifiers, since this group of quantifiers are inherently presuppositional, not simply denoting a particular amount on the cardinal scale.[3]

(16) a. The Set Scale



most *all* (English)
daibubun/hotondo *zenbu/subete* (Japanese)
an IC pair

b. The Cardinal Scale

some *many* (English)
ikutuka *takusan/ooku* (Japanese)
an IC pair (Kaga (1991: 14))

When the contrastive *wa* is attached to a DP containing a quantifier, the quantifier is put in contrast to the other member of the IC pair. Furthermore, in affirmative sentences, a quantifier must be put in contrast to the other quantifier with an upper value. This accounts for the difference in acceptability between (14a) and (14b). In (14a), the use of the contrastive *wa* is contrasted with the universal quantifier, the quantifier with an upper value, and implies the denial of the upper value on the IC pair, as shown in (17):

(17) a. Hotondo-no mondai-*wa* toi-ta-ga, subete-*wa* tok-anakat-ta
most-Gen problem-Cont solve-Past-though all-Cont solve-Neg-Past
'I solved most of the problems, but I didn't solve all of them.'
b. Ikutuka-no mondai-*wa* toi-ta-ga, takusan-*wa* tok-anakat-ta
most-Gen problem-Cont solve-Past-though many-Cont solve-Neg-Past
'I solved some problems, but I didn't solve many.'

The ungrammaticality of (14a) and (14c), where *wa* is attached to QPs with *subete-no* and *ooku-no*, respectively, follows from this analysis. In (17a), *subete-no mondai-wa* should be contrasted with an upper value on the Set Scale. However, since the universal quantifier *subete-no* denotes the value at the upper end, there is no upper value to be contrasted with the value denoted by the universal quantifier. Likewise, (14c) is ungrammatical since there is no upper value to be contrasted with *ooku-no* in the Cardinal Scale.

Thus the contrastive meaning of QPs with contrastive *wa* is of a quite different nature:

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[3] The original chart for the scales does not contain the quantifiers *hotondo*, *subete*, and *ooku*. However, this does not mean that the quantifiers not listed in the original chart do not form an IC pair with another quantifier. See Kaga (1991) and Hirose and Kaga (1997) for discussion.

Wa denotes contrastiveness in the domain of the quantifier scale. On the other hand, the contrastiveness associated to Type 1 QPs is in the domain of the referents of QPs.

7.4 On Locality of QP Scope

7.4.1 Long-Distance Scrambling and Lack of Long-Distance Scope

In the preceding chapters we have proposed that the topic and the focus feature play a crucial role in determining QP scope. If a QP is scrambled by the topic feature, the scope of the QP is determined where its topic feature is licensed, namely [Spec, TP]. In addition, if a QP undergoes covert movement triggered by the focus feature, it takes scope where its focus feature is licensed. On the other hand, if scrambling of a QP is not driven by the topic feature, its scope is determined in a position lower than [Spec, TP] and therefore it can only take narrow scope.

As we discussed in Chapter 4, this enabled us to account for the obligatory narrow scope of Type 2 QPs. Since Type 2 QPs do not have the topic/focus feature, they may only undergo the movement not driven by these features and thus may only have their scope determined in a lower position.

Our proposal also leads us to a prediction that if a QP undergoes a type of movement not involving the topic/focus feature, the QP may only take narrow scope whether the QP is of Type 1 or Type 2. This is the case with long-distance scrambling, the scrambling of a constituent out of a finite clause. In the previous literature on scrambling, it has been suggested that long-distance scrambling can only be a case of A'-movement, while clause-internal scrambling can be either A- or A'-movement (Saito (1992)). Saito (1992) points out the following piece of evidence for this distinction. Firstly, in clause-internal scrambling a scrambled object DP can bind an anaphor in the subject. This tells us that clause-internal scrambling can be an instance of A-movement:

(18) a. ?*Otagai$_i$-no sensei-ga karera$_i$-o hihansi-ta (koto)
each.other-Gen teacher-Nom they-Acc criticize-Past (fact)
'Each other$_i$'s teachers criticized them$_i$.'

b. ? Karera$_i$-o otagai$_i$-no sensei-ga t_i hihansi-ta (koto)
they-Acc each.other-Gen teacher-Nom criticize-Past (fact)
'Them$_i$, each other$_i$'s teachers criticized.' (Saito (1992: 74-75))

In contrast, a long-scrambled object DP cannot bind an anaphor in the matrix clause, as Saito points out:

(19) a. * Otagai$_i$-no sensei-ga [$_{CP}$ Hanako-ga karera$_i$-o hihansita to] itta (koto)
each.other-Gen teacher-Nom Hanako-Nom they-Acc criticized Comp said fact
'Each other$_i$'s teachers said that Hanako criticized them$_i$.'

b. * Karera$_i$-o otagai$_i$-no sensei-ga [$_{CP}$ Hanako-ga t_i hihansita to] itta (koto)
they-Acc each.other-Gen teacher-Nom Hanako-Nom criticized Comp said fact
'Each other$_i$'s teachers said that Hanako criticized them$_i$.'
(Saito (1992: 75-76))

Unlike (18b), the anaphor in the matrix subject cannot have the scrambled *karera-o* as its antecedent. This means that long-distance scrambling can only be a case of A'-movement, as Saito (1992) argues.

In Chapter 4, we identified two types of scrambling, one into [Spec, TP] triggered by the topic feature and one into a higher position not triggered by the topic feature. Miyagawa (2001) shows that long-distance scrambling is not a movement into [Spec, TP] by pointing out the following example:

(20) Sono-syukudai-o$_i$ zen'in-ga [sensei-ga t_i dasu to] omowa-nakat-ta[4]
that-homework-Acc everyone-Nom teacher-Nom assign Comp think-Neg-Past
Lit. 'That homework, everyone did not think that the teacher would assign.'
[unambiguous: *Neg > ∀, ∀ > Neg]
(Miyagawa (2001: 302) (slightly modified))

In the framework of Miyagawa (2010), this means that long-distance scrambling is not driven by the topic feature of the matrix clause. If it were, the long-scrambled object in (20) should allow the subject *zen'in* to take narrow scope under negation, which is not the case with (20).

Thus since long-distance scrambling is not triggered by the topic feature on the matrix T, we predict that a long-scrambled QP may not take wide scope over the matrix subject QP. This is indeed borne out by the examples provided by Tada (1990) in (21) and an additional set of examples in (22):

(21) a. *Dareka-ga* [John-ga *daremo-o* aisite i-ru to] omotte i-ru
someone-Nom John-Nom everyone-Acc love be-Pres Comp think be-Pres
'Someone thinks that John loves everyone.'
[unambiguous: ∃ > ∀, *∀ > ∃]
b. *Daremo-o*$_i$ *dareka-ga* [John-ga t_i aisite i-ru to] omotte i-ru
everyone-Acc someone-Nom John-Nom love be-Pres Comp think be-Pres

[4] I have slightly revised Miyagawa's (2001) original example by adding the demonstrative *sono* to the scrambled object. Miyagawa's (2001) original example involved a bare DP *syukudai-o* as the scrambled object, but bare DPs have been found to be resistant to the topic/focus feature, as we discussed in Chapter 4, unless we force a definite interpretation on them. The use of the demonstrative *sono-* 'that' makes the object DP unambiguously interpreted as definite and thus helps to detect the relevant reading without being influenced by the indefinite reading of the object.

Lit. 'Everyone, someone thinks that John loves.'
[unambiguous: ∃ > ∀, *∀ > ∃] (Tada (1990) (cited in Nemoto (1993))

(22) a. *Dareka-ga* [Yamada-sensei-ga *subete-no gakusei-ni* suisenzyoo-o
someone-Nom Yamada-teacher-Nom every-Gen student-Dat recommendation-Acc
kai-ta to] omotte i-ru
write-Past Comp think be-Pres
'Someone believes that Prof. Yamada wrote a recommendation letter to every student.'
[unambiguous: ∃ > ∀, *∀ > ∃]

b. *Subete-no gakusei-ni*$_i$ *dareka-ga* [Yamada-sensei-ga t_i suisenzyoo-o
every-Gen student-Dat someone-Nom Yamada-teacher-Nom recommendation-Acc
kai-ta to] omotte i-ru
write-Past Comp think be-Pres
[unambiguous: ∃ > ∀, *∀ > ∃]

Unlike the cases of clause-internal scrambling that we have discussed, a QP scrambled out of a finite complement clause may not take scope over the matrix subject QP. This is so since in our analysis the long-scrambled QP is not triggered by the topic feature on the matrix T. The structure of (22b), for example, is presented as follows:

(23) [$_{TP}$ subete-no gakusei-ni$_i$ [$_{TP}$ **dareka-ga** [$_{vP}$ .. [$_{CP}$ [*t'*$_i$ [$_{TP}$ Yamada-sensei-ga [$_{PresP}$ ***t*$_i$** ... V]]]
[topic] **[Pres] or [*θ*]**
SI head SI head
for *dareka-ga* for *subete-no gakusei-ni*
→ ∃ > ∀

The scrambled position to the left of the matrix subject is not the SI head of the long-scrambled QP *subete-no gakusei-ni* since it is not a position where it is licensed as the topic. Its SI head is thus identified as [Spec, PresP] or its original position in the complement clause. On the other hand, it is the matrix subject *dareka-ga* that has its topic feature licensed. Since the SI head of *dareka-ga* c-commands that of the scrambled *subete-no gakusei-ni*, the former QP necessarily takes wide scope over the latter.

7.4.2 Scrambling out of a Non-finite Clause and QP Scope

Parallelism between QP scope and the availability of A-scrambling has also been pointed out by Nemoto (1993), who points out that scrambling out of a control clause is an instance of A-movement and that scrambling of a QP out of a control clause allows the QP to

take wide scope. Consider the following examples:[5]

(24) a. * Otagai$_i$-no sensei-ga [*PRO* karera$_i$-o hihansi-yoo to] omotte i-ru
each.other-Gen teacher-Nom they-Acc criticize-Mod Comp think be-Pres
Lit. 'Each other's teachers are thinking of criticizing them.'

b. Karera$_i$-o otagai$_i$-no sensei-ga [*PRO* t_i hihansi-yoo to] omotte i-ru
they-Acc each.other-Gen teacher-Nom criticize-Mod Comp think be-Pres
Lit. 'Them, each other's teachers are thinking of criticizing.'

(25) a. * Otagai$_i$-no sensei-ga [*PRO* karera$_i$-o hihansi-] tagatte i-ru
each.other-Gen teacher-Nom they-Acc criticize want be-Pres
Lit. 'Each other's teachers are thinking of criticizing them.'

b. Karera$_i$-o otagai$_i$-no sensei-ga [*PRO* t_i hihansi-] tagatte i-ru
they-Acc each.other-Gen teacher-Nom criticize want be-Pres
Lit. 'Them, each other's teachers are thinking of criticizing.'

Unlike the cases of long-distance scrambling that we considered above, scrambling of a DP out of a control clause allows the DP to bind an anaphor in the matrix clause. This shows that scrambling out of a control clause is an instance of A-movement.

Furthermore, Nemoto (1993) points out that scrambling of a QP out of a control clause allows the QP to take scope. Consider:[6]

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[5] The examples that Nemoto (1993) observes involves object-control, as opposed to our subject-control sentences in the text:

(i) a. * Joe-ga otagai$_i$-no yuujin-ni [*PRO* [Michael to Janet]$_i$-o hihansuru yoo(ni)]
Joe-Nom each.other-Gen friend-Dat Michael and Janet-Acc criticize
tanonda (koto)
asked fact
'Joe asked each other's friends to criticize Michael and Janet.'

b. [Michael to Janet]$_i$-o Joe-ga otagai$_i$-no yuujin-ni [*PRO* t_i hihansuru
Michael and Janet-Acc Joe-Nom each.other-Gen friend-Dat criticize
yoo(ni)] tanonda (koto)
asked fact
'Joe asked each other's friends to criticize Michael and Janet.'
(Nemoto (1993: 44))

Nemoto (1993) observes that the binding of the anaphor *otagai* is possible in (ib) and hence concludes that scrambling out of a control clause is A-movement. However, I do not find her example in (ib) to be as acceptable as the instance of anaphor binding in simple sentences. Instead of the object-control construction which Nemoto discusses, I find her point to be proved by the subject control construction. Therefore, I only discuss the subject-control construction in what follows in the text.

[6] As with the examples of anaphor-binding, the examples of QP scope that Nemoto (1993) points out involve object-control:

(26) a. *Subete-no siken-o*$_i$ *san-nin-no gakusei-ga* [t_i uke-] tagat-ta
every-Gen test-Acc 3-Cl-Gen student-Nom take-want-Past
Lit. 'Every test, three students wanted to take.'
[ambiguous: 3 > ∀, ∀ > 3]

b. *Subete-no siken-o*$_i$ *san-nin-no gakusei-ga* [t_i uke-yoo to] omotte i-ru
every-Gen test-Acc 3-Cl-Gen student-Nom take-Mod Comp think be-Pres
Lit. 'Every test, three students are thinking of taking.'
[ambiguous: 3 > ∀, ∀ > 3]

In contrast to the scrambling out of a finite clause, the scrambling out of a control clause in (26) allows the scrambled QP to take wide scope.

In our terms, this correlation between the A-scrambling and the availability of the matrix scope of a scrambled QP can be explained as follows. The fact that the scrambled DP can bind an anaphor in (24) and (25) suggests that the scrambled DP has moved to [Spec, TP] in the matrix clause. This is confirmed by the availability of the partial negation reading in the following examples:

(27) a. *Zen'in-ga* [*PRO* sono siken-o uke-yoo to] omow-*anakat*-ta
everyone-Nom that test-Acc take-Mod Comp think-Neg-Past
'Everyone did not think of taking that test.'
[unambiguous: *Neg > ∀, ∀ > Neg]

b. Sono siken-o$_i$ *zen'in-ga* [t_i uke-yoo to] omow-*anakat*-ta
that test-Acc everyone-Nom take-Mod Comp think-Neg-Past
Lit. 'That test, every student did not think of taking.'
[ambiguous: Neg > ∀, ∀ > Neg]

As we see in (27b), the scrambling of the object DP *sono siken-o* to the left of the matrix subject *zen'in-ga* allows the subject to take narrow scope under negation. This tells us that the scrambling out of a control clause is triggered by the topic feature on the matrix T. If so, the structures of sentence (26b), for example, is represented as follows:

(i) *Daremo-o*$_i$ *dareka-ga* Michael-ni [*PRO* t_i naguru-yoo-ni] meiziteoita
everyone-Acc someone-Nom Michael-Dat hit has.commanded
Lit. 'Everyone, someone has commanded Michael to hit.'
[ambiguous: ∃ > ∀, ∀ > ∃ (the judgment by Nemoto)]
(Nemoto (1993: 52))

To my ear, however, it does not seem that the scrambled universal QP can really take wide scope over the matrix subject in this particular example. Nonetheless, Nemoto's point can be made more clearly with our examples in (26), which are to me much clearer cases of scope ambiguity than Nemoto's.

(28) a. [$_{TP}$ **subete-no siken-o$_i$** [$_{vP}$ **san-nin-no gakusei-ga** [*PRO* t_i uke-yoo to] omotte
[topic] **[θ]**
SI head for SI head for
subete-no siken-o *san-nin-no gakusei-ga*
i-ru]]]
→ ∀ > 3

b. [$_{TP}$ subete-no siken-o$_i$ [$_{TP}$ **san-nin-no gakusei-ga** [*PRO* **t_i** uke-yoo to] omotte i-ru]]]
[topic] **[Pres] or [θ]**
SI head for SI head for
san-nin-no gakusei-ga *subete-no siken-o*
→ 3 > ∀

As represented in (28), what happens with the scrambling out of a control clause is just the same as in simple sentences. In the derivation in (28a), where the object QP is scrambled by the topic feature on the matrix T, the SI head for the scrambled object QP is identified as the matrix [Spec, TP], whereas the SI head of the matrix subject is [Spec, vP], the position where the subject's thematic interpretation is determined. This derivation yields the wide scope of the scrambled object (the ∀ > 3 reading). In the other derivation in (28b), it is the matrix subject that has moved by the topic feature of T, an option also available in simple sentences. In this derivation, the configurational relation between the two SI heads is reversed. The SI head of the subject QP is the matrix [Spec, TP], whereas that of the scrambled object is [Spec, PresP] or its original position within the non-finite complement clause. This derivation gives wide scope to the matrix subject. Hence the ambiguity of the examples in (26) is correctly accounted for.

If the wide scope of the scrambled object QP in (26) is made possible by the working of the topic feature on the matrix T, it is predicted that a Type 2 object QP may not take wide scope in the same environment. This prediction is borne out:

(29) a. *Hutatu-no siken-o$_i$* *subete-no gakusei-ga* [t_i uke-] tagat-ta
2.Cl-Gen test-Acc every-Gen student-Nom take-want-Past
Lit. 'Two tests, every student wanted to take.'
[ambiguous: 2 > ∀, ∀ > 3]

b. *Hutatu-no siken-o$_i$* *subete-no gakusei-ga* [t_i uke-yoo to] omotte i-ru
2.Cl-Gen test-Acc every-Gen student-Nom take-Mod Comp think be-Pres
Lit. 'Two tests, every student is thinking of taking.'
[ambiguous: 2 > ∀, ∀ > 2]

(30) a. *Siken-o hutatu$_i$ subete-no* *gakusei-ga* [t_i uke-] tagat-ta
test-Acc 2.Cl every-Gen student-Nom take-want-Past
Lit. 'Two tests, every student wanted to take.'

[ambiguous: *2 > ∀, ∀ > 2]

b. *Siken-o hutatu*$_i$ *subete-no gakusei-ga* [t_i uke-yoo to] omotte i-ru
test-Acc 2.Cl every-Gen student-Nom take-Mod Comp think be-Pres
Lit. 'Two tests, every student is thinking of taking.'
[ambiguous: ∗2 > ∀, ∀ > 2]

In (29), where the object Type 1 QP has been scrambled out of the non-finite clause into the matrix, either the scrambled QP or the matrix subject QP may take wide scope over the other. (29b), for example, may describe the situation where each of the students has a different set of two tests in mind that (s)he is thinking of taking (the ∀ > 2 reading), or the one where the students all have the same set of two tests in mind (the 2 > ∀ reading). In contrast, the sentences in (30) lack the wide scope reading of the scrambled object: each of the students must have a different set of two tests in mind.

At this point it is worth asking why it is that long-distance scrambling cannot be triggered by the topic feature of the matrix clause, while middle-distance scrambling can. We suggest that this restriction on scrambling is assimilated to the case known as super-raising, as in:

(31) *John$_i$ seems that it is told t_i [that Mary has disappeared]

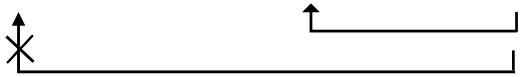
In (31), the movement of the DP *John* to the matrix subject position has illegally skipped the subject position in the complement clause occupied by *it*. Since this movement has skipped the "closer" subject position, it violates a requirement on the minimality of movement posed, for example, by Minimality Condition (Rizzi (1990)) or the Minimal Link Condition (Chomsky (1995)).

The restriction on scrambling that we have discussed so far can be captured in a similar way. For complex sentences involving a finite complement clause, suppose that both the matrix clause and the complement clause have the topic feature on their T. Then for a DP with the corresponding topic feature in the complement clause, the closer T having the topic feature is the T of the complement clause. If that DP were to move to the matrix [Spec, TP], it would illegally have to skip the closer [Spec, TP] in the complement clause.

(32) [$_{TP}$ ____ [**T$_{[topic]}$** [$_{VP}$ [$_{CP}$ [$_{TP}$ ____ [**T$_{[topic]}$** [$_{vP}$ [$_{VP}$ **DP**

a.

b.



Therefore, long-distance scrambling of a DP cannot move the DP to the matrix [Spec, TP], but to the position where the checking of the topic feature does not occur.

What about [Spec, TP] in a non-finite complement clause? If the above lines of analysis is correct, then the availability of topic-triggered movement into [Spec, TP] in the cases of "medium-distance" scrambling tells us that the T in non-finite clauses is "deficient" in the sense that it lacks the topic feature that would attract a corresponding topic phrase into [Spec, TP]. In other words, a constituent skips the embedded [Spec, TP] position into the matrix [Spec, TP] where its topic feature is licensed.[7]

7.4.3 Middle-Distance QP Scope and Negation

If our analysis developed up to the present chapter is on the right track, we predict that the covert focus movement obeys the same minimality requirement as the movement by the topic feature, since the covert movement of the focus feature of a QP has been defined as the movement triggered by the corresponding focus feature on T, on a par with the movement by the topic feature on T. More precisely, the covert focus movement is predicted to occur out of a non-finite complement clause, but not out of a finite clause. Moreover, our analysis also predicts that the covert focus movement may extract a Type 1 QP, but not a Type 2 QP, out of a non-finite clause, so that only Type 1 QPs may take scope out of a non-finite complement clause. This is indeed supported by the following observations concerning the scope of an object QP and negation.

Firstly, recall that an object QP may take wide scope over negation in a single clause.

(33) Keisatu-wa *san-nin-izyoo-no tooboohan-o* taihosi-*nakat*-ta
police-Top 3-Cl-or.more-Gen fugitive-Acc arrest-Neg-Past
'The police did not arrest three or more fugitive criminals.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]

In contrast, an object QP in a finite complement clause may not take scope over the matrix negation:

(34) Taroo-wa [keisatu-ga *san-nin-izyoo-no tooboohan-o* taihosuru-to] omow-*anakat*-ta
Taro-Top police-Top 3-Cl-or.more-Gen fugitive-Acc arrest-Comp think-Neg-Past
'Taro did not think that the police would arrest three or more fugitive criminals.'
[unambiguous: *3 or more > Neg, Neg > 3 or more]

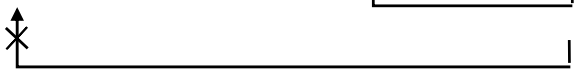
Unlike (33), it is impossible for the embedded object QP *san-nin-no tooboohan-o* in (34) to take scope over negation in the matrix clause. This fact is accounted for by our analysis. Since

[7] We leave open the possibility that the topic/focus feature may optionally appear on T in the non-finite complement clause. In Chapter 8 we assume that the focus feature may appear on T in the infinitival clause in English.

this QP is of Type 1, it may move to the local [Spec, PresP] and may also undergo the covert focus movement to [Spec, TP] in the complement clause. However, this embedded QP may not be covertly raised over the embedded TP to the matrix TP by the focus feature since it obeys the same minimality requirement as the topic-triggered movement:

(35) [$_{TP}$ ____ [**T$_{[focus]}$** [$_{NegP}$ **Neg** [$_{vP}$ [$_{VP}$ [$_{CP}$ [$_{TP}$ ____ [**T$_{[focus]}$** [$_{vP}$ [$_{PresP}$ **QP** V]]]]]]]]]

a.

b. 

Now we predict that the deficiency of the non-finite T allows the covert movement of the focus feature of a QP to skip the non-finite T to the matrix T, which enables the object QP in a non-finite complement clause to take scope over the matrix negation. Consider the following examples:

(36) a. Keisatu-ga *san-nin-izyoo-no tooboohan-o* taihosi-yoo to omow-*anakat*-ta
police-Nom 3-Cl-or.more-Gen fugitive-Acc arrest-Mod Comp think-Neg-Past
'The police did not think of arresting three or more fugitive criminals.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]

b. Taroo-ga *san-nin-izyoo-no gakusei-o* home-yoo to omow-*anakat*-ta
Taro-Nom 3-Cl-or.more-Gen student-Acc praise-Mod Comp think-Neg-Past
'Taro did not think of praising three or more students.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]

As opposed to example (34), where the embedded QP cannot take scope over the matrix negation, it is possible for the QP *san-nin-izyoo-no tooboohan/gakusei-o* to take wide scope over the matrix negation in (36). The derivations of (36a), for example, are represented as follows:

(37) a. [$_{TP}$ Taroo-ga [**[focus]$_i$** [$_{NegP}$ **Neg** [$_{vP}$ [*PRO* [san-nin-izyoo-no tooboohan-o]$_i$
[focus] **Neg** [Pres] or [θ]
SI head for
san-nin-izyoono tooboohan-o
taihosi-yoo to] omow]]]]
→ 3 or more > Neg

b. [$_{TP}$ Taroo-ga [$_{NegP}$ **Neg** [$_{vP}$ [*PRO* **[san-nin-izyoo-no tooboohan-o]** taihosi-yoo to]
Neg **[Pres] or [θ]**
SI head for
san-nin-izyoono tooboohan-o
omow]]]

→ Neg > 3 or more

In the derivation in (37a), the object QP in the non-finite clause has undergone the covert focus movement, following the movement into [Spec, PresP]. The covert focus movement may also occur from [Spec, PrtP], the position for Case-checking, as the movement into [Spec, PresP] is optional. In this case, it is the object QP that takes wide scope, since the focus feature moves into the matrix TP over the matrix negation. In the other derivation in (37b), where the covert focus movement does not occur, the object QP stays in the embedded [Spec, PresP] or in [Spec, PrtP]. In this case it is the matrix negation that takes wide scope, since the [Spec, PresP] in the non-finite complement clause is lower than the matrix negation. Thus our account of QP scope in terms of the covert focus movement can successfully account for the fact that an object QP in a non-finite clause may take a middle-distance scope, while an object QP in a finite complement clause may not take a long-distance scope.[8]

Our analysis developed so far also predicts that a Type 2 QP object in a non-finite complement clause may not take wide scope over matrix negation, since a Type 2 QP may not undergo the covert focus movement and may only move up to [Spec, PresP] in the complement clause. This prediction is indeed borne out:

(38) a. Keisatu-ga *tooboohan-o san-nin-izyoo* taihosi-yoo to omow-*anakat*-ta
police-Nom fugitive-Acc 3-Cl-or.more arrest-Mod Comp think-Neg-Past
'The police did not think of arresting three or more fugitive criminals.'
[unambiguous: *3 or more > Neg, Neg > 3 or more]

b. Taroo-ga *gakusei-o san-nin-izyoo* home-yoo to omow-*anakat*-ta
Taro-Nom student-Acc 3-Cl-or.more praise-Mod Comp think-Neg-Past
'Taro did not think of praising three or more students.'
[unambiguous: *3 or more > Neg, Neg > 3 or more]

In (38) the object NP-FQs (Type 2 QPs) may not take wide scope over the matrix negation, in contrast to the Type 1 object QPs in (36). The derivation of (38a), for example, is illustrated as follows:

(39) [$_{TP}$ Taroo-ga [$_{NegP}$ **Neg** [$_{vP}$ [*PRO* **[tooboohan-o san-nin-izyoo]** taihosi-yoo to]
Neg **[Pres] or [*θ*]**
SI head for
tooboohan-o san-nin-izyoo
omow]]]
→ Neg > 3 or more

[8] What we call the matrix negation here refers either of the two negations, the lower and the higher negation, which we assumed in Chapter 5. Whichever negation appears in the matrix clause in (38), the covert focus movement to the matrix TP crosses over the matrix negation.

Recall that the movement to [Spec, PresP] may apply to Type 2 QPs, as well as to Type 1 QPs. However, Type 2 QPs may not undergo the covert focus movement. This makes the object QP *tooboohan-o san-nin-izyoo* stay in [Spec, PresP] or in [Spec, PrtP], but does not allow it to move further up. Thus the SI head of the NP-FQs in (38) must be within the non-finite complement clause. This explains the obligatory narrow scope under the matrix negation of the Type 2 object QP in (38).

7.5 Summary of Chapter 7

In this chapter we have justified our analysis developed until Chapter 6 on two grounds. We have considered the semantics of Type 1 QPs and its amenability to the semantics of topic and focus.

Then we have also supported our analysis by pointing out the parallelism between the locality of movement to [Spec, TP] and that of QP scope: where movement by the topic feature is possible, wide scope is possible. Thus our approach to QP scope can account for the reason why long-distance scrambling cannot lead to long-distance scope. Long-distance scrambling is not driven by the topic feature and this is why long-distance scope is impossible with long-distance scrambling. Although the lack of long-distance scope with long-distance scrambling could also be accounted for simply by appealing to the distinction between A- and A'-scrambling, our approach has an advantage over that account since ours can also give a principled account of the lack of long-distance scope by assimilating scrambling to the case of super-raising.

We have also justified our account of QP scope in terms of the covert focus movement: since the focus movement is another case of the movement triggered by the feature on T, the QP scope determined by the covert focus movement obeys the same locality restriction as the movement by the feature on T. This approach has successfully accounted for the (un)availability of wide scope of a QP over negation out of different types of complement clause.

Chapter 8
Accounting for Quantifier Scope in English

8.1 Introduction

In this chapter we extend our analysis of QP scope in Japanese to English cases. The first goal of this chapter is to account for the difference in the QP scope interaction in simple sentences between English and Japanese by appealing to the difference of the syntactic feature that drives the movement of the subject, coupled with the proposal that the covert movement of the focus feature occurs in English (Section 8.2), as well as in Japanese. We also attempt to capture the parallelism between the locality of scrambling and that of QP scope (Section 8.3), the scope of Type 2 QPs (Section 8.4), QP scope interaction in the raising construction (Section 8.5), and the scope of a topicalized QP (Section 8.6). We also suggest, following Hornstein (1995), that the pair-list reading of WH-questions is not the result of a particular scope relation of a WH-phrase and a QP, and thus is not a true case of scope interaction (Section 8.7). Then we discuss QPs with *all* in Section 8.8 and suggest that they are best analyzed as Type 2 QPs, unlike QPs with a universal quantifier such as *every* and *each*, which belong to Type 1. Lastly we briefly discuss the free-choice *any* in English, a still another universal quantifier, and note how it is different from the Type 1 universal quantifiers *every* and *each* (Section 8.9).

8.2 QP Scope Interaction in English

It has been widely observed in the past literature (May (1977), among others) that a simple sentence containing two QPs in English has two different scope interpretations. This is in contrast to Japanese, in which a corresponding sentence does not have this ambiguity except for the cases which we have observed in the preceding chapters. Thus, while the Japanese sentence with the canonical order Subject – Object in (1) does not readily yield the two interpretations, the English sentence in (2) does.

(1) *Dareka-ga* *daremo-o* seme-ta
someone-Nom everyone-Acc blame-Past
[unambiguous: ∃ > ∀, *∀ > ∃]

(2) *Some boy* kissed *every girl*.
[ambiguous: ∃ > ∀, ∀ > ∃]

Thus the first question that we must answer is why English and Japanese exhibit this difference. In particular, we need to answer the question of why inverse scope is readily available in English while scope interpretation in Japanese is constrained in the way that we

have observed in the preceding chapters.

Firstly, we assume with Miyagawa (2010) that the movement of the subject DP to [Spec, TP] in English is dictated by the Φ-feature on T, which serves as the probe targeting a DP having the corresponding feature. This difference in the choice of the feature on T, as Miyagawa proposes, is what differentiates agreement languages such as English and discourse configurational languages such as Japanese.

Secondly, we assume that the Φ-feature is not an SI feature (See Chapter 4). This is so since while the topic and the focus feature have to do with semantic interpretation of DPs, the Φ-feature is a bundle of features such as number, person and gender, which contribute to the determination of the formal, morphosyntactic property of DPs and Vs. Thus, the difference in the scope interpretation between the Japanese example in (1) and the English example in (2), we propose, is ascribed to the difference of the feature that drives movement to [Spec, TP].

Thirdly, we assume that the covert focus movement occurs in English as well as in Japanese. The focus feature, we assume, is inherited from the CP-domain onto T and serves as a probe targeting a constituent bearing the corresponding focus feature. In addition, we also assume that the focus feature may be borne by Type 1 QPs, but not by Type 2 QPs, just as we did for Japanese QPs in the preceding chapters.

With the above set of assumptions in mind, let us consider how our analysis accounts for the widely-observed ambiguity of the English example in (2). The derivations of (2) are represented as in (3):[1, 2]

(3) a. (Only *some boy* has the focus feature.)

[TP **some boy**$_i$ [vP t_i [VP kissed **every girl**$_j$]]]
[focus] [θ] **[θ]**
SI head for SI head for
some boy *every girl*
→ *some boy* > *every girl*

[1] QPs involving weak quantifiers *some* and *many* may be regarded as ambiguous between being Type 1 and Type 2 QPs. In what follows QPs with *some/many* are treated as Type 1 QPs wherever the possibility of their wide scope is discussed, unless their Type 2 readings are discussed (Section 8.4).

[2] Alternatively one could assume a derivation where the object undergoes movement into PresP, in which case the object takes scope in [Spec, PresP]. However, I leave open the possibility of the object's moving to [Spec, PresP] in English for future research and do not assume PresP in the structure of English sentences in what follows. Even if this movement occurs in English, it will not affect our analysis in the text since [Spec, PresP] is configurationally lower than the lowest position of the subject in [Spec, vP] so that the SI head of an object QP is necessarily lower than that of the subject regardless of the object's being in [Spec, PresP] or in its original position in VP.

b. (Only *every girl* has the focus feature.)
[$_{TP}$ **[focus]$_j$** [some boy$_i$ [$_{vP}$ **t_i** [$_{VP}$ kissed every girl$_j$]]]]
[focus] **[θ]** [θ]
SI head for SI head for
every girl *some boy*
→ *every girl* > *some boy*

c. (Both *some boy* and *every girl* have the focus feature.)
[$_{TP}$ **some boy$_i$** [**[focus]$_j$** [$_{vP}$ t_i [$_{VP}$ kissed every girl$_j$]]]]
[focus] **[focus]** [θ] [θ]
SI head for SI head for
some boy *every girl*
→ *some boy* > *every girl*

d. (Both *some boy* and *every girl* have the focus feature.)
*[$_{TP}$ **[focus]$_j$** [**some boy$_i$** [$_{vP}$ t_i [$_{VP}$ kissed every girl$_j$]]]]
[focus] **[focus]** [θ] [θ]
SI head for SI head for
every girl *some boy*

e. (Neither has the focus feature.)
[$_{TP}$ some boy$_i$ [$_{vP}$ **t_i** [$_{VP}$ kissed **every girl$_j$**]]]
[θ] **[θ]**
SI head for SI head for
some boy *every girl*
→ *some boy* > *every girl*

If the subject QP *some boy* has the focus feature while the object *every girl* does not, the sentence has the structure represented in (3a). Here the subject QP has already moved into [Spec, TP] by the Φ-feature. The focus feature of the subject does not have to move further since it has already established the required relation in [Spec, TP] with the focus feature on T. The SI head for the subject QP then is [Spec, TP] since it is the topmost position among *some boy*'s SI positions. The SI head for *every girl* is the object position in VP, where its thematic role is determined. Since the SI head of *some boy* c-commands that of *every girl*, this structure gives rise to the reading where *some boy* takes wide scope over *every girl*. In (3b) the object *every girl* has the focus feature while the subject *some boy* does not. In this case, the focus feature of *every girl* moves to [Spec, TP]. Then the SI head of *every girl* in (3b) is [Spec, TP], the position that it covertly moves to. The SI head of the subject, on the other hand, is [Spec, vP] since the subject lacks the focus feature and the only SI position is the position where its thematic role is determined. Thus since the SI head of *every girl*, namely [Spec, TP], c-commands that of *some boy*, this representation gives rise to the wide scope of *every girl*.

If both the subject and the object QP have the focus feature, the derivation proceeds as in (3c), but not as in (3d). (3d) is ruled out by the following minimality constraint, which we propose as a version of the Minimality Condition in Rizzi (1990).

(4) A α feature cannot be raised over another α feature.[3, 4]
α = topic or focus

This constraint essentially dictates that a feature cannot move over another occurrence of the same feature. Thus if there are two occurrences of the focus feature in a structure, one may not move over the other, which makes the two maintain their original configurational relation. (3c) obeys (4) since the focus feature of the object does not move over that of the subject. On the other hand, (3d) violates (4) since the focus feature of the object is raised over that of the subject. The legitimate structure in (3c) yields the scope order Subject > Object since the SI head of the subject c-commands that of the object. Finally, if neither QP has the focus feature as in (3e), the subject is given wide scope since its SI head [Spec, vP] c-commands that of the object.

In sum, the ambiguity of the sentence in (2) is correctly accounted for since each of the readings is yielded by at least one of the derivations of the sentence. The wide scope of the subject is possible since the derivations in (2a), (2c) and (2e) are available. The inverse scope (Object > Subject) is also possible since the derivation in (2b) is available.[5] Note that the Φ-feature is not subject to the minimality constraint in (4). It seems reasonable to assume this since the Φ-feature is not an SI feature, as we have assumed, a feature of a quite distinct nature from the topic/focus feature.

The important point is that the movement of the focus feature of the object across the subject QP as in (3b) is possible for the English example in (2), as opposed to the Japanese example in (1), in which the movement of the focus feature of the object QP across the subject QP is blocked by the topic feature of the subject:[6]

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[3] The idea that the covert movement is constrained by some version of the Minimality Condition (Rizzi (1990)) is also pursued in Saito (2005), who proposes that QR, which he takes to be the covert movement of the [q](uantifier) feature, is subject to the minimality constraint in (i):

(i) QR does not raise a q-feature across another q-feature. (Saito (2005))

[4] The constraint in (4) allows the movement of a feature over a different feature. Thus the topic and the focus feature are each allowed to move over an occurrence of the other. However, the resulting configurational order [focus] > [topic] in the same TP is disallowed by the order constraint, as we proposed in Chapter 5.

[5] For example (2), it does not make a difference in predictions whether we assume the minimality constraint in (4). The relevance of (4) will be discussed in shortly.

[6] See Chapter 6.

(5) [[$_{TP}$ **3-nin-no gakusei-ga$_i$** [$_{T'}$ [$_{vP}$ t_i [$_{VP}$ **subete-no siken-o$_j$** uketa]]]]
[topic] [θ] **[focus]** [θ]

Thus the difference between English and Japanese with respect to the scope interaction of the subject and the object QP is ascribed to the difference in the trigger of the movement of the subject into [Spec, TP]. In Japanese, the subject QP has the topic feature which makes the subject raised into [Spec, TP], whereas in English it is the Φ-feature that raises the subject to [Spec, TP]. Recall that in some particular types of clause the inverse scope of the object QP over the subject is possible in Japanese, as we discussed in Chapter 6. The QP scope in English is assimilated to that in these particular types of clause in Japanese: inverse scope of the subject and the object QP is possible where the subject does not have the topic feature.

The proposed minimality constraint in (4) leads us to the following prediction: if the subject QP somehow needs to have its scope determined in [Spec, TP], then the object QP may not take wide scope over the subject. This is because the subject QP in this case has the focus feature and the minimality constraint blocks the movement of another focus feature over the subject. This prediction is borne out:

(6) a. *Some student or other* answered *many of the questions on the exam*.
[ambiguous: *some* > *many*, *many* > *some*]
b. *Some student or other* didn't answer *many of the questions on the exam*.
[unambiguous: *some* > *many*, **many* > *some*]
(Johnson (2000: 195))

(6a) is ambiguous between the relevant readings: either the subject or the object QP may take wide scope over the other. In contrast, its negative counterpart in (6b) is not ambiguous: it may only have the wide scope reading of the subject QP. The unambiguity of (6b) is accounted for in the following way. The derivations for (6b), both possible and impossible ones, are given in (7):[7]

[7] We assume that QPs in the form of the partitive construction Quantifier-*of-the*-N to be instances of Type 1 QPs. Indeed, the quantifier of the partitive construction cannot be preceded by the definite article *the*, on a par with Type 1 QPs involving a strong quantifier (Jackendoff (1977), Giusti (1991)):

(i) a. *the many of the men
b. *the three of the trees (Jackendoff (1977))

(7) a. [$_{TP}$ **some student$_i$** [$_{Neg}$ didn't [$_{vP}$ t_i [$_{VP}$ answer **many of the questions**]]]]
[focus] Neg **[θ]**
SI head for SI head for
some student *many of the questions*
→ scope: *some* > *many*

b. [$_{TP}$ **some student$_i$** [**[focus]$_j$** [$_{Neg}$ didn't [$_{vP}$ t_i [$_{VP}$ answer many of the
[focus] **[focus]** Neg [θ]
SI head for SI head for
some student or other *many of the questions*
questions$_j$]]]]]
→ scope: *some* > *many*

c. * [$_{TP}$ **[focus]$_j$** [**some student$_i$** [$_{Neg}$ didn't [$_{vP}$ t_i [$_{VP}$ answer many of the
[focus] **[focus]** Neg [θ]
SI head for SI head for
many of the questions *some student or other*
questions$_j$]]]]]
→ a violation of the minimality constraint

d.* [$_{TP}$ **[focus]$_j$** [some student$_i$ [$_{Neg}$ didn't [$_{vP}$ ***t$_i$*** [$_{VP}$ answer many of the questions$_j$]]]]]
[focus] Neg **[θ]** [θ]
SI head for SI head for
many of the questions *some student or other*
→ a violation of the scope condition on *some*

The only possible derivations for (6b) are (7a) and (7b), both of which yield the *some* > *many* reading. In (7a) the subject QP *some student or other* has its focus feature licensed in [Spec, TP] while the object QP, not undergoing the covert focus movement, has its scope determined in its underlying position. This yields the *some* > *many* reading. (7b) is another structure where the subject QP has the focus feature, which is licensed in [Spec, TP]. Even if the covert focus feature movement occurs from the object, it may not be raised over the subject as in (7c), since the subject also has the focus feature. In order for the focus feature of the object QP to move over the subject QP, the subject QP must lack the focus feature and have its SI head identified as [Spec, vP]. If the QP *some student or other* were to take scope in [Spec, vP], as in (7d), its scope would be narrower than negation. But then it would violate the condition that positive polarity items must not take scope under negation. Since *some* is a positive polarity item, it cannot take scope under negation, as we see in:

(8) I have *not* met *some students*.
[unambiguous: *Neg > ∃, ∃ > Neg]

Thus (7d) is ruled out for this condition on positive polarity items: since the subject QP must have the focus feature in order to be assigned wide scope over negation, it necessarily blocks the movement of the focus feature of the object QP. Thus (6b) is correctly predicted to be unambiguous.

(6a), in contrast, may have a derivation that yields the *many* > *some* reading. This is because the subject may lack the focus feature and have its scope determined in [Spec, vP], allowing the focus feature to be raised over the subject. Thus (9c) is a possible derivation for (6a), along with the derivations in (9a) and (9b) where the subject QP has its SI head identified as [Spec, TP].

(9) a. [$_{TP}$ **some student$_i$** [$_{vP}$ t_i [$_{VP}$ answered **many of the questions**]]]
[focus] **[θ]**
SI head for SI head for
some student or other *many of the questions*
→ scope: *some* > *many*

b. [$_{TP}$ **some student$_i$** [**[focus]$_j$** [$_{vP}$ t_i [$_{VP}$ answered many of the questions]]]]
[focus] **[focus]** [θ]
SI head for SI head for
some student or other *many of the questions*
→ scope: *some* > *many*

c. [$_{TP}$ **[focus]$_j$** [some student$_i$ [$_{vP}$ ***t*$_i$** [$_{VP}$ answered many of the questions]]]]
[focus] **[θ]** [θ]
SI head for SI head for
many of the questions *some student or other*
→ scope: *many* > *some*

Thus the examples in (6) provide a piece of supporting evidence for our analysis based on the covert focus movement and the minimality constraint in (4).

8.3 Locality of QP Scope and Scrambling

So far we have proposed that the covert focus movement plays a crucial role in determining QP scope in English. As we discussed in Chapter 7, the focus feature movement has essentially the same syntactic property as the movement by the topic feature in Japanese in that both of them are instances of movement to [Spec, TP] driven by the corresponding feature on T. Thus we expect that the covert focus movement in English will also obey the same locality constraint as the overt movement of the topic feature in Japanese, namely A-scrambling.

As we reviewed in Chapter 7, Japanese has two kinds of scrambling: A-scrambling and A'-scrambling. Furthermore, A-scrambling is subject to a locality constraint: it may take place clause-internally and out of a non-finite complement, but not out of a finite clause. This is shown by the (im)possibility of a scrambled DP's binding an anaphor:

(10) (= (18b) of Chapter 7)
?Karera$_i$-o otagai$_i$-no sensei-ga t_i hihansi-ta (koto)
they-Acc each.other-Gen teacher-Nom criticize-Past (fact)
'Them$_i$, each other$_i$'s teachers criticized.' (Saito (1992: 74-75))

(11) (= (24b) of Chapter 7)
Karera$_i$-o otagai$_i$-no sensei-ga [*PRO* t_i hihansi-yoo to] omotte i-ru
they-Acc each.other-Gen teacher-Nom criticize-Mod Comp think be-Pres
Lit. 'Them, each other's teachers are thinking of criticizing.'

(12) (= (19b) of Chapter 7)
*Karera$_i$-o otagai$_i$-no sensei-ga [$_{CP}$ Hanako-ga t_i hihansita to] itta (koto)
they-Acc each.other-Gen teacher-Nom Hanako-Nom criticized Comp said fact
'Each other$_i$'s teachers said that Hanako criticized them$_i$.' (Saito (1992: 75-76))

(10) is an example of scrambling occurring clause-internally while in (11) scrambling takes place out of a non-finite clause. Since both instances of scrambling allow anaphor-binding, the instances of scrambling in (10) and (11) are cases of A-movement. On the other hand, scrambling out of a finite complement clause does not allow anaphor-binding, as shown in (12), which suggests that the scrambling in (12) is a case of A'-movement.

In addition, A-scrambling is an instance of movement to [Spec, TP], whereas A'-scrambling is not. This is shown by the following set of facts:

(13) (= (31) of Chapter 4)
Sono-siken-o *zen'in-ga* uke-*nakat-ta*
that-test-Acc everyone-Nom take-Neg-Past
Lit. 'The test, everyone did not take.'
[ambiguous: ∀ > Neg, Neg > ∀]

(14) (= (27b) of Chapter 7)
Sono siken-o$_i$ *zen'in-ga* [t_i uke-yoo to] omow-*anakat*-ta
that test-Acc everyone-Nom take-Mod Comp think-Neg-Past
Lit. 'Every test, three students are thinking of taking.'

[ambiguous: Neg > ∀, ∀ > Neg]

(15) (= (20) of Chapter 7)
Sono-syukudai-o$_i$ zen'in-ga [sensei-ga t_i dasu to] omow-*anakat*-ta
that-homework-Acc everyone-Nom teacher-Nom assign Comp think-Neg-Past
Lit. 'That homework, everyone did not think that the teacher would assign.'
[unambiguous: *Neg > ∀, ∀ > Neg]

As we discussed in Chapter 4, the movement of the object to [Spec, TP] is signaled by the availability of the narrow scope reading of the subject QP under negation (Neg > ∀). The availability of this reading in (13) and (14) suggests that movement to [Spec, TP] is possible for clause-internal scrambling ((13)) and for scrambling out of a non-finite clause ((14)), whereas the impossibility of this reading in (15) suggests that scrambling out of a finite clause is not an instance of movement to [Spec, TP].

Moreover, we showed in Chapter 7 that the covert focus movement is also subject to the same locality constraint as A-scrambling. This is shown by the relative scope of an object QP with respect to negation in Japanese:

(16) (= (33) of Chapter 7))
Keisatu-wa *san-nin-izyoo-no tooboohan-o* taihosi-*nakat*-ta
police-Top 3-Cl-or.more-Gen fugitive-Acc arrest-Neg-Past
'The police did not arrest three or more fugitive criminals.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]

(17) (= (36) of Chapter 7)
a. Keisatu-ga *san-nin-izyoo-no tooboohan-o* taihosi-yoo to omow-*anakat*-ta
police-Nom 3-Cl-or.more-Gen fugitive-Acc arrest-Mod Comp think-Neg-Past
'The police did not think of arresting three or more fugitive criminals.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]
b. Taroo-ga *san-nin-izyoo-no gakusei-o* home-yoo to omow-*anakat*-ta
Taro-Nom 3-Cl-or.more-Gen student-Acc praise-Mod Comp think-Neg-Past
'Taro did not think of praising three or more students.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]

(18) (= (34) of Chapter 7)
Taroo-wa [keisatu-ga *san-nin-izyoo-no tooboohan-o* taihosuru-to] omow-*anakat*-ta
Taro-Top police-Top 3-Cl-or.more-Gen fugitive-Acc arrest-Comp think-Neg-Past
'Taro did not think that the police would arrest three or more fugitive criminals.'

[unambiguous: *3 or more > Neg, Neg > 3 or more]

The object QPs in (16) and (17) may take wide scope over negation whereas the object QP in the finite complement clause in (18) cannot do so.

If QP scope in English is determined by the focus feature movement, and if the focus feature movement obeys the same locality constraint as the movement of the topic feature, namely A-scrambling, it is expected that inverse scope of QPs in English exhibits the same locality effect as A-scrambling in Japanese. This expectation is borne out. Firstly, as A-scrambling is possible clause-internally, so is inverse scope in English:

(19) *Some boy* kissed *every girl*.
[ambiguous: ∃ > ∀, ∀ > ∃]

Secondly, just as A-scrambling is possible out of a non-finite clause in Japanese, a QP in a non-finite complement clause in English may take wide scope over a matrix QP:[8]

(20) a. *A different student* wanted to read *every book*.
[ambiguous: ∃ > ∀, ∀ > ∃] (Johnson (2000: 199))
b. *At least one American tourist* expects/hopes to visit *every European country* this year.
[ambiguous: ∃ > ∀, ∀ > ∃] (Kennedy (1997), Johnson (2000:199))

In contrast, inverse scope out of a finite clause is impossible in English, just as scrambling out of a finite clause can only be A'-movement. In (21) the QP *every girl* in the finite complement clause may not take scope over the matrix subject QP *someone*:

(21) *Someone* believes that John kissed *every girl*.
[unambiguous: ∃ > ∀, *∀ > ∃]

The structures of these examples are represented in (22-24). (We only refer to the structures where the subject QP does not bear the focus feature since in our account inverse scope is possible only when the subject does not bear the focus feature.)

[8] It does not seem to be the case that *all* non-finite complement clauses allows a QP that they contain to take wide scope across their clause boundary. Hornstein (1995) observes that it is the English counterpart of "restructuring verbs" in the sense of Rizzi (1982) that allows an embedded QP to take matrix scope, while Johnson (2000) claims that a wider range of verb complement clauses allows the matrix scope of an embedded QP.

(22) For (19):

[$_{TP}$ **[focus]$_j$** [some boy$_i$ [$_{vP}$ ***t*$_i$** [$_{VP}$ kissed every girl$_j$]]]]
[focus] **[*θ*]** [*θ*]
SI head for SI head for
every girl *some boy*

(23) For (20):

[$_{TP}$ **[focus]$_j$** [one American tourist$_i$ [$_{vP}$ ***t*$_i$** [$_{VP}$ hopes [*PRO* to visit every European
[focus] **[*θ*]** [*θ*]
SI head for SI head for
every European country *one American tourist*
country$_j$]]]]]

(24) For (21):

a. *[$_{TP}$ **[focus]$_j$** [someone$_i$ [$_{vP}$ ***t*$_i$** [$_{VP}$ believes [$_{CP}$ that [$_{TP}$ John [$_{VP}$ kissed every girl$_j$]]]]]]]
[focus] **[*θ*]** [*θ*]
SI head for SI head for
every girl *some boy*

b. [$_{TP}$ someone$_i$ [$_{vP}$ ***t*$_i$** [$_{VP}$ believes [$_{CP}$ that [$_{TP}$ **[focus]$_j$** [John [$_{VP}$ kissed every girl$_j$]]]]]]]
[*θ*] **[focus]** [*θ*]
SI head for SI head for
someone *every girl*

In (22) and (23) the movement of the focus feature over the subject QP is allowed since the focus movement occurs clause-internally in (22) and out of a non-finite clause in (23). In contrast, (24a) is ruled out since the focus movement occurs across a finite complement clause, an environment where A-scrambling is not allowed. The focus movement does occur in (21), but only clause-internally as shown in (24b). But then the object QP takes only narrow scope with respect to the matrix subject QP. Thus the absence of the wide scope for the object QP over the matrix subject in (21) is correctly captured.

The idea that QP scope in English is assimilated to scrambling has its predecessor in Johnson (2000), who points out the parallelism between the locality of QP scope in English and that of scrambling in Dutch. As Johnson points out, QP scope is constrained in the way that scrambling is constrained in Dutch. Firstly, a QP in a finite complement clause is unable to take wide scope over a QP in a matrix clause in English, as in (25). Correspondingly, scrambling out of a finite complement clause is impossible in Dutch, as in (26):

(25) *A different student* said that I had read *every book*.

[unambiguous: ∃ > ∀, *∀ > ∃] (Johnson (2000: 198))

(26) *... dat Jan *boken*$_i$ heeft besloten [dat er t_i gelezen heeft]
that Jan books has decided that he read has
'... that Jan has decided that he as read books.' (Johnson (2000: 200))

Secondly, a QP in a non-finite clause may take scope over a matrix QP, as in (27). Correspondingly, a DP may scramble out of a non-finite clause in Dutch ((28)):

(27) *A different student* wanted to read *every book*.
[ambiguous: ∃ > ∀, ∀ > ∃] (Johnson (2000: 199))

(28) ... dat Jan *Marie*$_i$ heeft geprobeerd [t_i te kussen].
that Jan Marie has tried to kiss
'... that Jan has tried to kiss Marie.' (Johnson (2000: 200))

Thus these facts tell us that a QP may take inverse scope in English where scrambling is possible in Dutch.

Scrambling in Dutch has been regarded as an instance of A-movement (De Hoop (1996)). If Johnson's (2000) idea is tied to this view on Dutch scrambling, it amounts to the same generalization as ours: English QPs may take wide scope where A-scrambling is possible in languages that have scrambling. Our analysis of English QP scope has taken one more step and asked why QP scope in English and A-scrambling exhibit the parallelism that we have observed. Our answer to this question is that these two phenomena are governed by essentially the same kind of movement: the movement of the topic/focus feature attracted by the corresponding feature on T. Thus we can capture the locality effect of these two phenomena in a principled way.

8.4 Scope of Nonpresuppositional QPs in English

This section shows that our account of QP scope in terms of the (non)availability of the focus feature movement can be extended to an account of the difference in scope-taking property between presuppositional and nonpresuppositional QPs in English. Consider again the example pointed out by Diesing (1992), which we discussed in Chapter 2:

(29) *Every cellist* played *some variations*.
[ambiguous: ∃ > ∀, ∀ > ∃] (Diesing (1992: 65))

Diesing observes that (29) is ambiguous in three ways. The first reading is represented by

∀ > ∃, where the object QP *some variations* is interpreted as a presuppositional QP. Thus the referents of *some variations* differ from individual to individual in the set of people referred to by *everyone*, but these referents of *some variations* are chosen from the same set of variations from the preceding discourse. The second reading, also represented as ∀ > ∃, is the reading where *some variations* is nonpresuppositional. In this case the referents of *some variations* are newly introduced into the discourse. The third reading is represented by the inverse scope order ∃ > ∀. As Diesing suggests, this inverse scope reading is possible under the presuppositional reading of *some variations*.

In Chapters 2 and 3, we suggested an alternative account to Diesing's (1992) whereby only those QPs with a quantifier in [Spec, DP] (Type 1 QPs) can undergo QR to take wide scope. The QP *every cellist* undergoes QR since the quantifier *every* necessarily occupies [Spec, DP]. On the other hand, the QP *some variations* has the weak quantifier *some*. As we discussed in Chapter 3, weak quantifiers may occupy either [Spec, DP] or [Spec, NP]. Thus QR may also apply to the QP *some variations* since it is possible for the quantifier *some* to be in [Spec, DP]. Then how can we account for Diesing's observation about the narrow scope of nonpresuppositional QPs in our terms?

Recall from Chapter 3 that the presuppositional reading can be obtained by the presence of a quantifier in [Spec, DP]. The presuppositional reading of a QP could be obtained also when [Spec, DP] lacks a quantifier, if presuppositionality comes from another source. In other words, when a QP is presuppositional, the QP can be a Type 1 QP although it could also be of Type 2. On the other hand, a nonpresuppositional reading only arises from the lack of a quantifier in [Spec, DP]. In other words, when a QP is nonpresuppositional, the QP can only be a Type 2 QP.

Now in the analysis that we have developed so far, the fact in (29) may be explained in the following way. We have proposed that only Type 1 QPs, but not Type 2 QPs, are compatible with the focus feature. The QP *every cellist* is a Type 1 QP, as we have just seen above. For the QP *some variations*, there are two possibilities. When it is presuppositional, it can be of Type 1. In other words, it is possible for *some variation* to undergo the covert focus movement when it is presuppositional. When *some variations* is nonpresuppositional, on the other hand, it can only be a Type 2 QP and thus cannot undergo the covert focus movement. If so, (29) may have the following representations:

(30) a. [$_{TP}$ **every cellist$_i$** **[[focus]$_j$** [$_{vP}$ t_i [$_{VP}$ played some variations$_j$]]]]
[focus] **[focus]** [θ] [θ]
SI head SI head
for *every cellist* for *some variations*
→ ∀ > ∃

b. * [$_{TP}$ **[focus]$_j$** [**every cellist$_i$** [$_{vP}$ t_i [$_{VP}$ played some variations$_j$]]]]
[focus] **[focus]** [θ] [θ]
SI head SI head
for *some variations* for *every cellist*

c. [$_{TP}$ **every cellist$_i$** [$_{vP}$ t_i [$_{VP}$ played **some variations$_j$**]]]
[focus] [θ] **[θ]**
SI head SI head
for *every cellist* for *some variations*
→ ∀ > ∃

d. [$_{TP}$ **[focus]$_j$** [every cellist$_i$ [$_{vP}$ ***t*$_i$** [$_{VP}$ played some variations$_j$]]]]
[focus] **[θ]**
SI head SI head
for *some variations* for *every cellist*
→ ∃ > ∀

e. [$_{TP}$ every cellist$_i$ [$_{vP}$ ***t*$_i$** [$_{VP}$ played **some variations$_j$**]]]
[θ] **[θ]**
SI head SI head
for *every cellist* for *some variations*
→ ∀ > ∃

If the object QP *some variations* is presuppositional, all the derivations except for (30b) are possible since it is possible for this QP to be a Type 1 QP in this case. In (30a) and (30b) both the subject *every cellist* and the object *some variations* have the focus feature licensed in [Spec, TP], but only (30a) is a possible derivation since the movement of the object's focus feature over that of the subject in (30b) violates the minimality constraint. (30c) is another possible derivation when the object is presuppositional. This is a derivation where the Type 1 object chooses not to undergo the covert focus movement. This representation yields the *every* > *some* reading. In (30d), the subject QP does not have the focus feature and its scope is determined in [Spec, vP], in which case the focus feature of the object may be raised over the subject since the subject does not have the focus feature. This structure yields the inverse scope *some* > *every*. In (30e), neither QP launches the focus feature. In this case their original positions are their scope positions.

When the object is nonpresuppositional, on the other hand, the object must be a Type 2 QP and thus does not undergo the covert focus movement so that the possible structures are only (30c) and (30e), where the scope of the object is obligatorily determined in its original position.

The narrow scope property of B-NPs in English, another kind of Type 2 QP, is accounted for along the same lines. Consider:

(31) a. *Everyone* read *some books about giraffes*.
[ambiguous: ∃ > ∀, ∀ > ∃]
b. *Everyone* read *books about giraffes*.
[unambiguous: *∃ > ∀, ∀ > ∃] (Carlson (1977: 20))

The ambiguity of example (31a) is accounted for in the same way as (29). Since *some books on giraffes* can be a Type 1 QP, as well as being a Type 2 QP, (31a) can have the same set of derivations as (29). In contrast, example (31b) may only have the representations in (32):

(32) a. [TP **everyone$_i$** [vP t_i [VP read **books on giraffes$_j$**]]]
[focus] [θ] **[θ]**
SI head SI head
for *everyone* for *books on giraffes*
→ ∀ > ∃
b. [TP everyone$_i$ [vP **t_i** [VP read **books on giraffes$_j$**]]]
[θ] **[θ]**
SI head SI head
for *everyone* for *books on giraffes*
→ ∀ > ∃

Since the object DP *books on giraffes* is necessarily a Type 2 QP and thus is unable to undergo the covert focus movement, its scope must be determined at its underlying position.

Likewise, the inability of B-NPs to take wide scope over an intensional verb is ascribed to the unavailability of the focus feature for B-NPs:

(33) a. Miles wants to meet *some policemen*.
[ambiguous: ∃ > *want*, *want* > ∃]
b. Miles wants to meet *policemen*.
[unambiguous: *∃ > *want*, *want* > ∃] (Carlson (1977: 16))

For (33a), both (34a) and (34b) are possible derivations:

(34) a. [TP **[focus]$_i$** [Miles [vP **wants** [*PRO* to meet some policemen$_i$]]]]
[focus] [θ]
b. [TP Miles [vP **wants** [*PRO* to meet **some policemen$_i$**]]]
[θ]

Since the QP *some policemen* involves the quantifier *some*, it can be a Type 1 QP and hence can bear the focus feature. If it bears the focus feature, the sentence has the structure in (34a). This structure yields the wide scope of the QP over the matrix intensional verb *want*. If the QP does not have the focus feature, its scope is determined in its original position as in (34b), which gives rise to the narrow scope reading of the object QP. In contrast, sentence (33b) may only have the structure corresponding to (34b), where the only SI head of the object B-NP is its original position in the embedded VP, since the B-NP *policemen* may not bear the focus feature so that it cannot move covertly to the matrix TP. Since *policemen* must have its scope determined in its original position, it can only have narrow scope under the intensional verb.

8.5 Quantifier Scope in the Raising Construction

8.5.1 The Ambiguity of the Subject QP

It has been observed in the literature that the subject QP of a raising predicate such as *seem* and *be likely* may take either wide or narrow scope with respect to the raising predicate (May (1977, 1985) among others).

(35) a. *Everyone* seems to like Cecil's playing.
b. *Some politician* is likely to address John's constituency.
[ambiguous: QP > *seem/ likely*, *seem/ likely* > QP]
(May (1977: 188))

Sentence (35b), for example, may be interpreted in either of the following ways. On the reading where *some politician* takes matrix scope over *likely*, the sentence is taken to assert the existence of a politician. On the other reading, which is represented by *likely* > *some* and is paraphrased as *It is likely that some politician will address John's constituency*, the speaker is understood not to assert the existence of a politician who will address John's constituency, but merely to assert the probability of there being a politician who will do so.

Our analysis of QP scope accounts for this ambiguity in the following manner. If *some politician* in (35a) is a Type 1 QP, there are three possibilities, which are represented as follows:

(36) a. [$_{TP}$ **some politician$_i$** [is **likely** [$_{TP}$ to [$_{vP}$ t_i [$_{VP}$ address John's constituency]]]]]
[focus] [θ]
SI head
for *some politician*

b. [$_{TP}$ some politician$_i$ [is **likely** [$_{TP}$ **[focus]$_i$** to [$_{vP}$ t_i [$_{VP}$ address John's constituency]]]]]
[focus] [θ]
SI head
for *some politician*

c. [$_{TP}$ some politician$_i$ [is **likely** [$_{TP}$ to [$_{vP}$ **t_i** [$_{VP}$ address John's constituency]]]]]
[θ]
SI head
for *some politician*

If the subject QP *some politician* has the focus feature, one derivation is one where its SI head is identified as [Spec, TP] in the matrix clause, as in (36a). This gives the QP a wide scope over *likely*. Another derivation for the same QP with the focus feature is given in (36b). In this structure the focus feature is licensed in the embedded [Spec, TP] instead of the matrix [Spec, TP] and the QP is raised further to the matrix [Spec, TP] by the Φ-feature on the matrix T. This derivation gives the QP narrow scope under *likely*. Still another derivation for (35b) with the Type 1 *some politician* is given in (36c), where *some politician* does not bear the focus feature. Here the SI head for *some politician* is identified as the embedded [Spec, vP] since it is the position where the thematic interpretation of *some politician* is determined. This derivation yields the narrow scope of *some politician*.

Furthermore, if *some politician* is a Type 2 QP, the sentence may only have the structure in (36c), since the SI head for a Type 2 QP can only be identified as its original position, the position where its thematic interpretation is determined.

The analysis along these lines is supported by the fact that a QP that is obligatorily of Type 2 such as an existential B-NP may only have narrow scope under the raising predicate. Indeed, as Carlson (1977) observes, the existential B-NP *drunks* in (37a) can only take narrow scope under *likely*:

(37) a. *Drunks* are likely to win the lottery.
[unambiguous: *∃ > *likely, likely* > ∃] (Carlson (1977))

b. [$_{TP}$ drunks [are **likely** [$_{TP}$ to [$_{vP}$ **t_i** win the lottery]]]]
[θ]
SI head
for *drunks*
→ *likely* > ∃

The B-NP in (37a) is a Type 2 QP and thus can only have the embedded [Spec, vP] as its SI head, as illustrated in (37b). Thus it can only have narrow scope under *likely*.

8.5.2 QP Scope Interaction in the Raising Construction

It has been observed in the literature (May (1977, 1985) among others) that the raising construction containing two QPs allows three scope readings:

(38) *Someone politician* is likely to address *every rally* in John's district.
(May (1977: 201))

The three readings are summed up in the following list:

(39) a. *some politician*$_{\text{matrix scope}}$ > *every rally*
b. *some politician*$_{\text{embedded scope}}$ > *every rally*
c. *every rally* > *some politician*$_{\text{embedded scope}}$

If the subject QP *some politician* takes scope over the matrix predicate *likely*, it takes wide scope over the embedded object QP *every rally*. If the subject QP takes scope under *likely*, it can either take wide or narrow scope with respect to *every rally*. The reading that is absent in (38) is the one where *some politician* takes matrix scope and at the same time takes narrow scope under the object QP *every rally*.

We may account for this three-way ambiguity and the lack of the fourth reading in the following manner. The derivations for (38), both possible and impossible ones, are represented as follows:

(40) a. (Only *some politician* has the focus feature.)
[$_{TP}$ **some politician$_i$** [is likely [to [$_{vP}$ t_i [$_{VP}$ address **every rally$_j$**]]]]]
[focus] [θ] **[θ]**
SI head for SI head for
some politician *every rally*
→ ∃ > ∀

b. (Only *every rally* has the focus feature.)
[$_{TP}$ **[focus]$_j$** [some politician$_i$ [is likely [to [$_{vP}$ **t_i** [$_{VP}$ address every rally$_j$]]]]]]
[focus] **[θ]** [θ]
SI head for SI head for
every rally *some politician*
→ ∀ > ∃

c. (Only *every rally* has the focus feature.)
[TP some politician$_i$ [is likely [TP **[focus]$_j$** [to [vP **t_i** [VP address every rally$_j$]]]]]]
[focus] **[θ]** [θ]
SI head for SI head for
every rally *some politician*
→ ∀ > ∃

d. (Both *some politician* and *every rally* have the focus feature.)
[TP **some politician$_i$** [VP likely [TP **[focus]$_j$** to [vP t_i [VP address every rally$_j$]]]]]
[focus] **[focus]** [θ] [θ]
SI head for SI head for
some politician *every rally*
→ ∃ > ∀

e. (Both *some politician* and *every rally* have the focus feature.)
[TP **some politician$_i$** [**[focus]$_j$** [VP likely [TP to [vP t_i [VP address every rally$_j$]]]]]]
[focus] **[focus]** [θ] [θ]
SI head for SI head for
some politician *every rally*
→ ∃ > ∀

f. (Both *some politician* and *every rally* have the focus feature.)
* [TP **[focus]$_j$** [**some politician$_i$** [VP likely [TP to [vP t_i [VP address every rally$_j$]]]]]]
[focus] **[focus]** [θ] [θ]
SI head for SI head for
every rally *some politician*

g. (Neither has the focus feature.)
[TP some politician$_i$ [is likely [to [vP **t_i** [VP address **every rally$_j$**]]]]]
[θ] **[θ]**
SI head for SI head for
some politician *every rally*
→ ∃ > ∀

If the focus feature is borne only by the matrix subject *some politician*, the sentence has the structure in (40a). The subject QP takes scope in the matrix [Spec, TP] while the embedded object *every rally* takes scope where it is located. This gives the subject QP wide scope over the embedded QP. If the focus feature is borne only by the embedded object QP, the sentence has either the representation in (40b) or the one in (40c). Since the subject QP does not bear the focus feature, the focus feature of the object may be raised over the SI head of the subject QP, namely the [Spec, vP] position in the embedded clause. The difference between (40b) and (40c) has to do with the landing site of the moved focus feature. In (40b) it is moved to the

matrix [Spec, TP], while it is moved to the [Spec, TP] of the embedded clause. Either of these derivations gives wide scope to the embedded object QP. If both QPs in (38) have the focus feature, the focus feature of the object QP may not move beyond that of the matrix subject QP because of the minimality constraint. Thus (40d) and (40e) are allowed while (40f) is not, since the focus feature has moved over that of the subject in (40f). Finally, if neither QP bears the focus feature, the structure is represented as (40g), which gives rise to the wide scope of the matrix subject. To sum up, the impossibility of (40f) accounts for the fact that (38) lacks the reading where *some politician* takes matrix scope and at the same time takes narrow scope under *every rally*.

The above account of QP scope in the raising construction leads us to expect that if the matrix subject is forced to take scope in the matrix clause, the object QP in the embedded clause may not take wide scope over the matrix subject. This is so because in our account the subject QP takes matrix scope by virtue of having the focus feature, which blocks the covert movement of the focus feature of the object QP over it. This prediction is borne out:

(41) a. *Someone* seemed to be reviewing *every report*.
[ambiguous: ∃ > ∀, ∀ > ∃]
b. *Someone*$_i$ seemed to his$_i$ boss to be reviewing *every report*.
[unambiguous: ∃ > ∀, *∀ > ∃]
c. *Someone*$_i$ seemed to himself$_i$ to be reviewing *every report*.
[unambiguous: ∃ > ∀, *∀ > ∃] (Hornstein (1995: 160))

While the matrix subject *someone* may take narrow scope under the object QP *every report* in (41a), the same QP is not allowed to take narrow scope under *every report* in (41b) and (41c). The crucial point about (41b) and (41c) is the fact that the presence of a pronoun (*his* in (41b) and *himself* in (41c)) bound by the QP *someone* forces the QP to take matrix scope. This is so since the bound variable pronoun in these examples is in the matrix clause and the QP *someone* is forced to take matrix scope in order to serve as the antecedent. This means in our terms that the QP *someone* in (41b) and (41c) needs to bear the focus feature since in our account having the focus feature is necessary for the subject QP to take matrix scope in the raising construction. But then the subject QP, having the focus feature, blocks the movement of the focus feature of another QP over it. This is the reason why (41b) and (41c) allow only the wide scope of the subject QP over the embedded object.

8.6 Scope of Topicalized QPs

In Chapter 4 we noted that topicalization makes the topicalized QP obligatorily take wide scope:

(42) a. *All of us* have read *many of these books* with great enthusiasm.
[ambiguous: *all* > *many*, *many* > *all*]
b. *Many of these books*, *all of us* have read with great enthusiasm.
[unambiguous: * *all* > *many*, *many* > *all*] (Kuno (1991))

(43) a. *Many people* come to New York *every summer*.
[ambiguous: *many* > *every*, *every* > *many*]
b. *Every summer*, *many people* come to New York.
[unambiguous: **many* > *every*, *every* > *many*] (Kuno and Takami (2002))

How can we extend our analysis to cover this case?

The topicalization in English affects the semantic interpretation of a DP undergoing this movement. As observed in Gundel (1974), a topicalized DP is either interpreted as a "topic" ((44a)) or a "focus" ((44b)):

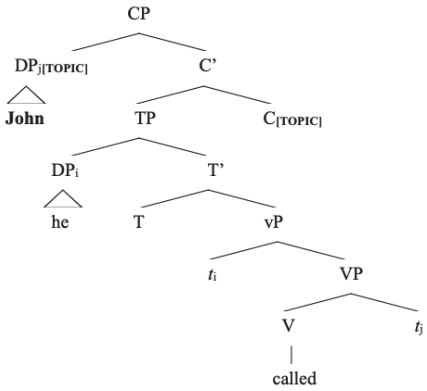
(44) a. **John** he CALLED.
(as a response to the question "What about John?")
b. **JOHN** he called.
(as a response to the question "Who did he call?")

Thus, it is reasonable to assume that the syntactic feature that drives the topicalization of a DP (henceforth, the TOPIC feature) is a "semantic" one, in the way that the topic and the focus feature are.[9] If so, we may say that the TOPIC feature counts as a determinant of QP scope since it has to do with semantic interpretation of a DP bearing it. If we assume that the relevant feature attracting a topicalized DP appears on C, the structure of a sentence involving topicalization in English is represented as follows:

[9] I use the notation "TOPIC" to refer to the grammatical feature for topicalization in English in order to distinguish it from the topic feature. It is interesting to note, however, that topicalized DPs in English are subject to a constraint similar to that for the topic DP in Japanese. Recall that Type 2 QPs cannot have the topic feature in Japanese. As for topicalization, it is difficult to topicalize indefinite DPs:

(i) a. ??*Two books*, John read last night.
b. ??*Many books*, John has read. (Kuno and Takami (2002: 101))

(45)



Then the structure for (42b), for example, is represented as follows:

(46) [$_{CP}$ **many of these books** [$_{TP}$ **all of us** [have [$_{vP}$ t_j [read t_i with great enthusiasm]]]]]
[TOPIC]
SI head for
many of the books

The scope of the topicalized QP *many of the books* is obligatorily determined in [Spec, CP] since it is the position where its TOPIC feature is licensed. Since this position is necessarily higher than the subject, it obligatorily takes wide scope. Thus our account can successfully account for the difference in QP scope between (42a) and (43a) on one hand and their topicalized counterparts in (42b) and (43b) on the other.

8.7 On WH-QP "Scope Interaction"

In the preceding section we have proposed that the topicalized QP must have its scope determined in [Spec, CP], the position where it receives its interpretation as a topic, but not in the original position, where its thematic interpretation is determined. This is so since the SI head for a topicalized QP is necessarily [Spec, CP], which c-commands any other SI head within TP. The account of the scope of a topicalized QP along these lines leads us to expect that if a QP moves into the CP-domain and has its SI head determined in the CP-domain, the QP necessarily takes wide scope over any QP under TP, since a position in the CP-domain c-commands any position under TP.

This expectation, however, is not necessarily borne out. Consider the following examples involving a WH-phrase and a QP:

(47) a. *Who* bought *everything* for Max?
[unambiguous: *who* > *every*, **every* > *who*]
b. *What* did *everyone* buy for Max?
[ambiguous: *who* > *every*, *every* > *who*] (May (1985: 38-39))

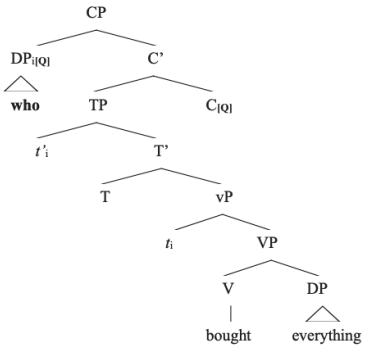
It has been observed in the literature (May (1985), Aoun and Li (1993), Hornstein (1995) among others) that example (47b) is ambiguous. On the interpretation represented by the scope order *what* > *every*, the speaker asks the addressee to identify a single object such that everyone bought it for Max. On the other interpretation, represented by *every* > *what* and known as a *pair-list* reading, (47b) is understood as a "distributed" question in which the speaker asks of each individual for the identity of the object that (s)he bought for Max. Thus (48a) will be an appropriate answer to the former reading of (47b), while (48b) to the latter reading of (47b) (May (1985: 38)):

(48) a. Everyone bought Max a Bosendorfer piano.
b. May bought Max a tie, Sally a sweater, and Harry a piano.

In contrast, the question in (47a) has only the reading where the speaker asks for the identity of the single object that everyone bought for Max (the *who* > *every* reading).

If the readings of the interrogative sentences in (47) are to be captured in terms of scope relation between a WH-phrase and a QP, the nonambiguity of (47a) is expected in our analysis. Suppose that a WH-phrase is moved to [Spec, CP] triggered by the grammatical feature responsible for the interrogative meaning of the WH-phrase and the sentence containing it. Then the sentence (47a) is represented as (49), where the relevant grammatical feature is marked as [Q]:

(49)



Furthermore, if the covert movement of the focus feature of *everything* occurs, the sentence has the structure in (50a). If not, it is represented as (50b):

(50) a. [CP **who**$_i$ [TP **[focus]**$_j$ [*t'*$_i$ [vP t_j [VP bought everything for Max]]]]]
[Q] **[focus]** [θ] [θ]
SI head for SI head for
who *everything*

b. [CP **who**$_i$ [TP [*t'*$_i$ [vP t_j [VP bought **everything** for Max]]]]]
[Q] [θ] **[θ]**
SI head for SI head for
who *everything*

Whichever derivation in (50) is chosen, the SI head of *who* c-commands that of *everything*. Even if the focus feature of *everything* moves, it may move only as far as to [Spec, TP], which is c-commanded by the SI head of *who*.

However, the ambiguity of (47b) would not be expected by our analysis. (47b) has the following derivations:

(51) a. [CP **what**$_i$ did [TP **everyone**$_j$ [vP t_j [VP buy t_i for Max]]]]
[Q] **[focus]** [θ] [θ]
SI head for SI head for
what *everyone*

b. [CP **what**$_i$ did [TP everyone$_j$ [vP ***t*$_j$** [VP buy t_i for Max]]]]
[Q] **[θ]** [θ]
SI head for SI head for
what *everyone*

Irrespective of these derivational options for (47b), an account of (47b) in terms of scope relation would wrongly predict that the sentence has only the wide scope of *what*, since the SI head, namely [Spec, CP], c-commands whichever SI head *everyone* has.

To solve this problem, we follow the analysis of the WH-QP interaction in Chierchia (1991) and Hornstein (1995), who propose that the source of pair-list readings is not the wide scope of a universal QP over a WH-phrase, but the binding of an implicit pronoun in the WH-phrase by the distributive QP. This idea is based on the observation that an interrogative sentence such as (47b) may be answered in one of the two ways below:

(52) Q: Who does everyone love?
A: a. Mary.

b. His mother.

The answer in (52a), called an *individual answer*, corresponds to the one (48a), which provides the identity of the single thing that everyone bought. On the other hand, the answer in (52b), known as a *functional answer*, is the source of the pair-list answer to (52) since, as Chierchia notes, the functional interpretation is a necessary condition for the pair-list reading. Based on this observation, Chierchia (1991) and Hornstein (1995) propose that the functional interpretation of a sentence containing a WH-phrase and a QP arises from the following structure where the QP binds an implicit pronoun contained in the copy of the moved WH-phrase:

(53) [$_{CP}$ who$_i$ [$_{TP}$ everyone$_j$ [$_{VP}$ love [*pro*$_j$ t_i]]]]

Thus in order for a functional reading to be obtained, a QP and *pro* must meet the condition for coindexing them. Since a QP may be an antecedent of a pronoun only if it c-commands the pronoun, a functional reading obtains only if a QP is in a position c-commanding *pro*. In other words, the unavailability of a functional (pair-list) reading is reduced to the *weak crossover* (WCO) effect, as exemplified in (54):

(54) a. Everyone$_i$ loves his$_i$ mother.
b. * His$_i$ mother loves everyone$_i$.

In sum, a WH-phrase consists of a constituent serving as an interrogative phrase and an implicit pronoun. If this implicit pronoun is bound by a QP such as *everyone*, the sentence yields a functional interpretation.[10]

If we assume this analysis of the functional interpretation of WH-questions, the examples in (47) have the following representations:

(55) a. For (47a):
* [$_{CP}$ who$_i$ [$_{TP}$ *t'*$_i$ [$_{vP}$ [***pro***$_j$ t_i] [$_{VP}$ bought **everything**$_j$ for Max]]]]
b. For (47b):

[10] For the individual reading, Hornstein (1995) proposes that it arises as a result of the deletion of the whole copy of the object at LF, while on the functional reading what is deleted at LF is the copy of the moved WH. Thus the LF structure for the individual reading does not involve the implicit pronoun. We may also implement this idea by saying that the DP structure of a WH-phrase in the case of the individual reading does not contain an implicit pronoun at all as a result of the deletion of the whole copy of the WH-phrase, while the representation for the functional (pair-list) reading, the one that involves an implicit pronoun, results from the deletion of only part of the WH-phrase, leaving the implicit pronoun intact. We assume the latter in what follows.

[$_{CP}$ what$_i$ did [$_{TP}$ **everyone$_j$** [$_{vP}$ ***t*$_j$** [$_{VP}$ buy [***pro*$_j$** t_i] for Max]]]]

In (55b), the implicit pronoun *pro* is c-commanded by *everyone* (or more precisely, its trace t_j) so that *pro* may be bound by *everyone*. This makes it possible for (47b) to have a functional, pair-list reading. On the other hand, the implicit pronoun is not bound by *everything* in (55a) since the latter does not c-command the former. Therefore, (47a) is not interpreted as having a functional interpretation.

As Hornstein (1995) shows, a piece of supporting evidence for this analysis of WH-QP interaction comes from the following examples:[11]

(56) a. *Who* do you think *everyone* invited?
[individual, pair-list]
b. *Who* do you think invited *everyone*?
[individual, *pair-list] (Hornstein (1995: 115))

These examples exhibit the same contrast as (47) with respect to the availability of the pair-list reading. The WH-phrase *who* in (56a) has moved from the object position in the complement clause, while the WH-phrase originates in the subject position in (56b). As we see, the pair-list answer is possible in (56a), but not in (56b). The structures for (56a) and (56b) are represented as follows:

(57) a. For (56a):
[$_{CP}$ who$_i$ do [$_{TP}$ you [$_{VP}$ think [$_{CP}$ [$_{TP}$ **everyone$_j$** [$_{vP}$ ***t*$_j$** [$_{VP}$ invited [***pro*$_j$** t_i]]]]]]]]
b. For (56b):
*[$_{CP}$ who$_i$ do [$_{TP}$ you [$_{VP}$ think [$_{CP}$ [$_{TP}$ [***pro*$_j$** t_i] [$_{vP}$ t_i [$_{VP}$ invited **everyone$_j$**]]]]]]]

The structure in (57a) meets the requirement for the binding of *pro* by *everyone* since the latter, or the trace of it, c-commands the former. This yields the pair-list reading of (56a). On the other hand, (57b) is a configuration of WCO since the object *everyone* does not c-command *pro* in the subject. This accounts for the lack of the pair-list reading in (56b).

In contrast, an account of the availability of a pair-list reading in (56a) in terms of scope relation would face a difficulty, as Hornstein (1995) points out. Under a scope account of (56a), one would have to say that *everyone* in the finite complement clause takes scope over *who* in the matrix clause. However, a QP in such an environment cannot take wide scope over the matrix clause, as we have see from the unambiguity of (58):

[11] See also May (1985).

(58) *Someone* thinks that *everyone* saw you at the rally.
[unambiguous: ∃ > ∀, ∗∀ > ∃] (Hornstein (1995: 62))

Thus this constitutes a piece of supporting evidence for the analysis of WH-QP interaction in terms of WCO.

8.8 A Note on *All*

So far we have identified two types of QP, characterizing Type 1 QPs as those QPs with a quantifier in [Spec, DP] and Type 2 QPs as those that do not have a quantifier in [Spec, DP]. In addition, Type 1 QPs have also been characterized as having a presuppositional interpretation. These considerations may lead us to expect a QP with the quantifier *all* in the prenominal position to behave on a par with Type 1 QPs, since *all* is one of the universal quantifiers in English. However, this expectation is not borne out. First, observe the following paradigm:

(59) *All the men* lifted up a table. (Szabolsci (2010))

(60) A journalist reported *all the events*. (ibid.)

Szabolsci (2010) observes that while (59) allows the reading where the referent of the object *a table* varies with the referents of *all the men*, (60) does not readily have such a distributive reading where each of the events involves a different reporter. This means in our terms that while the subject QP *all the men* can have wide scope over the object *a table* in (59), the QP *all the events* in (60) cannot take scope over the subject *a journalist*. If this is so, the generalization is that a QP with *all* in the object position may not have inverse wide scope over a subject QP.[12]

If the inverse wide scope reading of the object QPs is yielded by the covert focus feature movement, then a possible analysis of the narrow scope property of *all* in (60) is to assume that, unlike QPs with *every* or *each*, QPs with *all* do not belong to the group of Type 1 QPs, but to that of Type 2 QPs, which do not undergo the focus movement. In fact, there are two characteristic properties of *all* which distinguish it from *every* and *each*.

First, *all* is different from *every* and *each* in that it does not range over a set of entities denoted by the head noun but simply denotes the whole part of the denotation of the head noun. This is confirmed by the fact that when *all* cooccurs with a grammatically singular head noun, the DP containing it denotes the whole part of the referent of the DP, not all the

[12] A similar observation on the restricted availability of distributive reading of *all* is made in Beghelli and Stowell (1997).

members of the set of referents of the head noun:

(61) a. I haven't read *all the book*.
b. I spent *all the day* cooking. (Huddleston and Pullum (2003))

The DP *all the book* in (61a), for example, refers to the whole part of one single book, but not to every member of a set of books. The examples in (61) can be paraphrased as:

(62) a. I haven't read *the whole book*.
b. I spent *the whole day* cooking. (ibid.)

This property of *all* is not shared by *every* and *each*. The combination of *every*/*each* + a singular noun necessarily yields the reading where the universal quantifier ranges over a set of referents denoted by the head noun and picks out the maximum number of the referents of that noun. Thus the italicized QPs in (63) pick out all the referents from the set consisting of books and days, but lacks the reading where the noun phrase refers to the whole part of a single book/day.

(63) a. I haven't read *every book*.
b. I spend *every day* cooking.

The relevant property of *all* is also shown by the fact that *all*, but not *every* or *each*, may be combined with an uncountable noun to refer to the whole part of the referent of the noun:

(64) a. I drank *all the whisky*.
b. You will need *all your patience*. (Huddleston and Pullum (2003))

Again this property is not shared by *every* or *each*. The combination of *every*/*each* + an uncountable noun results in ungrammaticality:

(65) a. *every/*each money
b. *every/*each sand

The second property of *all* that distinguishes it from the quantifiers *every* and *each* is the fact that *all* itself does not presuppose a set of referents of the accompanying noun, which *every* and *each* do presuppose. It has been pointed out in the past literature that while the combination of *all* and a definite determiner such as *the*, *these*/*those* or a possessive personal pronoun (*my*, *your*, etc.) refers to the whole set of referents, the combination of *all* + a bare

noun does not. Thus, while *all the children* in (66a) refers to the whole set of children who are presupposed in the previous discourse, *all children* in (66b) does not have this reading but has a generic reference.[13]

(66) a. *All the children* wanted to go to the zoo.
b. *All children* like going to the zoo. (Declerck (1991))

This difference between *all the* + N and *all* + N is also shown by the following examples, as pointed out by Matthewson (1998, 2001). Suppose that the speaker is talking about, and hence presupposing the existence of, a particular set group of linguists. In this situation, use of *all* without a definite determiner as in (67b) is not appropriate.

(67) a. I admire *all linguists.*
b. ! I talked to *all linguists*.
c. I talked to *all the linguists*. (Matthewson (1998, 2001))

The use of *all* + a bare noun is possible in cases where the speaker intends to refer generically to linguists in general, as in (67a), not to a particular set of linguists that are presupposed to exist in the preceding discourse. This fact tells us that *all* lacks the relevant property of presupposing a particular set. The presuppositional interpretation in (66a) and (67c) can be ascribed to the use of the definite article *the*. If so, the function of *all* is limited to that of expressing the whole part of the entities denoted by the noun.

The third difference between *all* on one hand and *every* and *each* on the other is the fact that *all* does not occur in [Spec, DP], the position that *every* and *each* are supposed to occupy. This is suggested by the following facts:

(68) a. * every the boy
b. * each the boy
c. all the boys

(69) a. * every the company's worker
b. * each the company's worker
c. all the company's workers ((69c) from *COCA*)

While *every* and *each* may not precede the definite article *the* or a possessive DP, as in (68a,

[13] This property is pointed out in Quirk et al. (1985), Declerck (1991), Matthewson (2001), Huddleston and Pullum (2003), and Borer (2005).

b) and (69a, b), *all* may precede either of them, as shown in (68c) and (69c). If the impossibility of cooccurrence of *every/each* and the definite article or a possessive DP signals that *every/each* occupies [Spec, DP], the facts in (68c) and (69c) tell us that *all* is not in [Spec, DP], but is in an outer position in DP structure.

Thus from these considerations of the semantic and the syntactic properties of *all*, we can say that a QP containing *all* is not a Type 1 QP while QPs with *every* and *each* are, and that QPs with *all* can be best regarded as belonging to Type 2. If we suppose that a QP with *all* is of Type 2, we can account for the obligatory narrow scope of the object QP in (60). The object involves *all* so that it cannot undergo the covert focus movement. The structure of (60), for example, can be represented as the following:

(70) [TP **a journalist**$_i$ [vP t_i [VP reported **all the events**]]]
[focus] [θ] **[θ]**
→ *a journalist* > *all the events*

Irrespective of whether the subject has the focus feature or not, the object must take scope in its original position so that it can only take narrow scope.

The sentence with *all* in the subject is represented as follows:

(71) a. [TP **[focus]$_j$** [all the men$_i$ [vP **t_i** [VP lifted up a table$_j$]]]]
[focus] **[θ]** [θ]
b. [TP all the men$_i$ [vP **t_i** [VP lifted up **a table$_j$**]]]]
[θ] **[θ]**

(71a) is the structure where the focus feature of the object QP has moved over the subject. This derivation yields the inverse scope order Object > Subject. In (71b) the object does not launch the focus feature. This structure gives rise to the wide scope of *all the men*.

8.9 A Brief Note on Free-Choice *Any*

Here a comment is in order on still another kind of universal quantifier, which is called the free-choice *any*. The free-choice *any* is known to lack the existential presupposition associated with the universal quantifiers *each* and *every*. Thus while *every unicorn* in (72a) presupposes the existence of a set of unicorns, *any unicorn* in (72b) does not require the existence of such a set (McCawley (1981), Vendler (1967)):

(72) a. *Every unicorn* will eat this food.
b. *Any unicorn* will eat this food.

Another aspect in which the free-choice *any* differs from the strong quantifiers *every* and *each* is that the free-choice *any* tends to take wide scope:

(73) a. *Every cat* does*n't* like catnip.
b. *Each dog* does*n't* have a collar.
c. *Any dog* does*n't* have one tail.

While the examples in (73a) and (73b) may have a Neg > ∀ reading, the sentence in (73c) may not have this reading.

These properties of the free-choice *any* tell us that the free-choice *any* should be treated separately from Type 1 and Type 2 QPs. See Homma (1990) for an analysis of the semantic and the scopal property of the free-choice *any*.

8.10 Summary of Chapter 8

In this chapter we have extended the idea developed in the preceding chapters to QP scope in English and proposed that the feature that drives movement to [Spec, TP] plays a crucial role in determining QP scope in English. The relevant feature is the focus feature, which triggers covert movement of a QP bearing the focus feature. This approach makes it possible to account for the locality of QP scope (Section 8.3), the difference in the scope property between Type 1 and Type 2 QPs (Section 8.4), the scope interaction of QPs in the raising construction (Section 8.5) and the obligatory wide scope of the topicalized QP in English (Section 8.6). Moreover, we have claimed, following the approach in Hornstein (1995), that the availability of pair-list readings in WH-questions is not a scope phenomenon, but must be reduced to the availability of establishing a binding relation between a QP and an implicit pronoun in a WH-phrase (Section 8.7). Lastly we have discussed the quantifier *all* and the free-choice *any* in English. Although *all* and the free-choice *any* are regarded as universal quantifiers, they are best characterized as constituting separate classes of quantifiers from the universal quantifiers *every* and *each*, which form Type 1 QPs (Sections 8.8 and 8.9).

Chapter 9
On Caseless *Zen*-QPs

9.1 Introduction

In this chapter we discuss the QPs *zen'in* and *zenbu* (henceforth, *zen*-QPs). We are particularly interested in the scope and the syntactic property that *zen*-QPs exhibit when they appear without a Case-particle, as in (1), as opposed to when appearing with a Case-particle as in (2):

(1) a. Taroo-wa *zen'in* seme-ta
Taro-Top everyone blame-Past
'Taro blamed everyone.'
b. Taroo-wa Hanako-ni *zenbu* okut-ta
Taro-Top Hanako-Dat everything send-Past
'Taro sent everything to Hanako.'

(2) a. Taroo-wa *zen'in-o* seme-ta
Taro-Top everyone-Acc blame-Past
'Taro blamed everyone.'
b. Taroo-wa Hanako-ni *zenbu-o* okut-ta
Taro-Top Hanako-Dat everything-Acc send-Past
'Taro sent everything to Hanako.'

We show that the occurrences of *zen*-QPs without a Case-particle (henceforth, Caseless *zen*-QPs) constitute the third type of QP: QPs that may only undergo the topic-triggered scrambling, but not the non-topic scrambling (A'-scrambling). As we observe below, Caseless *zen*-QPs may only take wide scope when scrambled to the pre-subject position. This property of Caseless *zen*-QPs strengthens our proposal in Chapter 4 that the topic feature on T determines the scope of a scrambled QP.

9.2 Possible Analyses of Caseless *Zen*-QPs

Before presenting our analysis, let us examine two possible analyses of Caseless *zen*-QPs and point out their problems.

9.2.1 Caseless *Zen*-QPs are Not Floating Quantifiers

The first possible analysis of Caseless *zen*-QPs is to regard them as instances of FQs whose host DP is missing. In this analysis the examples in (3) would be derived by the omission of the host DP that would be associated with *zen'in* and *zenbu*, as in:

(3) a. Taroo-wa ~~gakusei-o~~ *zen'in* seme-ta
Taro-Top student-Acc everyone blame-Past
'Taro blamed every student.'
b. Taroo-wa Hanako-ni ~~nimotu-o~~ *zenbu* okut-ta
Taro-Top Hanako-Dat package-Acc everything send-Past
'Taro sent every package to Hanako.'

However, there is a piece of evidence suggesting that the instances of *zen*-QPs in (3) cannot be regarded as instances of FQs. Compare (4) and (5):

(4) a. *Gakusei-o zen'in* hutari-no sensei-ga sidoosi-ta
student-Acc everyone 2.Cl-Gen teacher-Nom supervise-Past
Lit. 'Every student, two teachers supervised.'
[unambiguous: *∀ > 2, 2 > ∀]
b. *Hon-o zenbu* san-nin-no gakusei-ga yon-da
book-Acc everything 3-Cl-Gen student-Nom read-Past
Lit. 'Every book, three students read.'
[unambiguous: *∀ > 3, 3 > ∀]

(5) a. *Zen'in* hutari-no sensei-ga sidoosi-ta
everyone 2.Cl-Gen teacher-Nom supervise-Past
Lit. 'Every student, two teachers supervised.'
[unambiguous: ∀ > 2, *2 > ∀]
b. *Zenbu* san-nin-no gakusei-ga yon-da
everything 3-Cl-Gen student-Nom read-Past
Lit. 'Every book, three students read.'
[unambiguous: ∀ > 3, *3 > ∀]

As we see in (4) and (5), the Caseless *zen*-QPs in (5) take wide scope over the subject QP, while the occurrences of *zen'in* and *zenbu* as FQs in (4) can only be interpreted as taking narrow scope under the subject.[1] This tells us that the occurrences of *zen'in* and *zenbu* in (5) cannot be regarded as FQs, but also as full DPs whose Case-particle is apparently missing.[2]

[1] See Chapter 2.
[2] The above discussion raises a question of why it is that the host noun phrase of floating *zen'in* and *zenbu* in (4) cannot be deleted. If the host noun phrase in the object NP-FQ were able to be deleted in (4), the FQ would have to be able to take narrow scope. I leave this question for future research.

9.2.2 It is Not the Case-Particle Omission that Makes Caseless *Zen*-QPs

Caseless *zen*-QPs have their apparent counterpart that has a Case-particle, as in:

(6) (= (2))
a. Taroo-wa *zen'in-o* seme-ta
Taro-Top everyone-Acc blame-Past
'Taro blamed everyone.'
b. Taroo-wa Hanako-ni *zenbu-o* okut-ta
Taro-Top Hanako-Dat everything-Acc send-Past
'Taro sent everything to Hanako.'

Thus one might argue that Caseless *zen*-QPs in (1) were simply variants of the *zen*-QPs in (6) whose Case-particle is omitted. However, while Caseless *zen*-QPs may appear in the pre-subject position, a DP may not have its Case-particle omitted in the pre-subject position (Saito (1983, 1985)).

(7) a. Taroo-ga *dare(-o)* seme-ta-no
Taro-Nom who-Acc blame-Past-Q
'Who did Taro blame?'
b. *Dare*(-o)* Taroo-ga seme-ta-no
who-Acc Taro-Nom blame-Past-Q
'Who did Taro blame?'

If the absence of a Case-particle on the *zen*-QPs in (5) were due to the omission of the Accusative Case-particle, it would not be clear why the Case omission in (5) is possible while it is not in (7). Thus one cannot say that Caseless *zen*-QPs are not simply a Caseless variant of *zen*-QPs with a Case-particle. This point is also supported by the following contrast in scope interpretation:

(8) (= (5))
a. *Zen'in* hutari-no sensei-ga sidoosi-ta
everyone 2.Cl-Gen teacher-Nom supervise-Past
Lit. 'Every student, two teachers supervised.'
[unambiguous: ∀ > 2, *2 > ∀]
b. *Zenbu* san-nin-no gakusei-ga yon-da
everything 3-Cl-Gen student-Nom read-Past
Lit. 'Every book, three students read.'
[unambiguous: ∀ > 3, *3 > ∀]

(9) a. *Zen'in-o* hutari-no sensei-ga sidoosi-ta
everyone 2.Cl-Gen teacher-Nom supervise-Past
Lit. 'Every student, two teachers supervised.'
[ambiguous: ∀ > 2, 2 > ∀]
b. *Zenbu-o* san-nin-no gakusei-ga yon-da
everything 3-Cl-Gen student-Nom read-Past
Lit. 'Every book, three students read.'
[ambiguous: ∀ > 3, 3 > ∀]

We have observed that the preposed Caseless *zen*-QPs in (5) (repeated here as (8)) may only take wide scope over the subject QP. In contrast, *zen*-QPs with a Case-particle may either take wide or narrow scope with respect to the subject QP, as we see in (9). This also constitutes a piece of evidence suggesting that Caseless *zen*-QPs are not derived by the omission of a Case-particle.

9.2.3 Caseless *Zen*-QPs are Not Type 1 or Type 2 QPs

In the preceding sections we have observed that Caseless *zen*-QPs take obligatory wide scope over the subject when scrambled. This property with respect to scope is different from that of Type 1 and Type 2 QPs. Recall that Type 1 QPs, when scrambled, may take either wide or narrow scope with respect to the subject QP ((10)), while Type 2 QPs may only take narrow scope ((11)):

(10) a. *Subete-no gakusei-o hutari-no sensei-ga* sidoosi-ta
every-Gen student-Acc 2.Cl-Gen teacher-Nom supervise-Past
Lit. 'Every student, two professors supervised.'
[ambiguous: ∀ > 2, 2 > ∀]
b. *Subete-no hon-o san-nin-no gakusei-ga* yon-da
every-Gen book-Acc 3-Cl-Gen student-Nom read-Past
Lit. 'Every book, three students read.'
[ambiguous: ∀ > 3, 3 > ∀]

(11) a. *Gakusei-o san-nin subete-no hito-ga* seme-ta
student-Acc 3-Cl every-Gen person-Nom blame-Past
Lit. 'Three students, every person blamed.'
[unambiguous: ∀ > 3, *3 > ∀]
b. *Hon-o ni-satu daremo-ga* yon-da
book-Acc 2-Cl everyone-Nom read-Past

Lit. 'Two books, everyone read.'
[unambiguous: ∀ > 2, *2 > ∀]

Thus as regards the QP types, Caseless *zen*-QPs constitute a class distinct from Type 1 and Type 2 QPs.

9.3 Accounting for the Scope Property of Caseless *Zen*-QPs

The above discussion of Caseless *zen*-QPs has revealed that they constitute a class separate from the two types of QP that we have discussed. The next task is to answer the question of why they must take wide scope in (8), as we have observed in Section 9.2: preposed Caseless *zen*-QPs must take wide scope over the subject. In order to account for this fact, we propose that the scrambling of Caseless *zen*-QPs to the pre-subject position is obligatorily driven by the topic feature on T, and that they cannot undergo the non-topic scrambling, the scrambling that is not driven by the topic feature. Then the structure of (8a), for example, is represented as (12a), but not as (12b) or (12c):

(12) a. [$_{TP}$ **zen'in$_j$** [$_{vP}$ **hutari-no sensei-ga$_i$** [$_{VP}$ t_j sidoosi-ta]]]]
[topic] **[θ]** [θ]

b. * [$_{TP}$ zen'in$_j$ [$_{TP}$ **hutari-no sensei-ga$_i$** [$_{vP}$ t_i [$_{VP}$ **t_j** sidoosi-ta]]]]
[topic] [θ] **[θ]**

c. * [$_{TP}$ **[focus]$_i$ [zen'in$_j$** [$_{vP}$ hutari-no sensei-ga$_i$ [$_{VP}$ t_j sidoosi-ta]]]]
[focus] **[topic]** [θ] [θ]

In (12a) *zen'in* has the topic feature in the scrambled position so that its scope is determined in that position. (12b), on the other hand, is not a possible structure for (8a) since the scrambling of *zen'in* must be triggered by the topic feature: it cannot undergo the scrambling that is not triggered by the topic feature. The derivation in (12c) is not permitted, either. Recall the order constraint on the topic and the focus feature which we proposed in Chapter 6:

(13) (= (10) of Chapter 6)
A topic and a focus feature may not be in the following configuration in a single TP:
* [$_{TP}$ [focus] [[topic] [...]]]
(where [focus] and [topic] represent a feature on either an overtly-moved or covertly-moved constituent)

In (12c) the focus feature has landed in a structurally higher position than the topic feature on the scrambled *zen'in*, although the movement of these elements obeys the minimality

constraint (See Chapter 8). This violates the order constraint in (13) since the focus feature ends up in a structurally higher position than the DP with the topic feature. In sum, we can capture the obligatory wide scope of Case-less *zen'in* since (12a) is the only structure available for (8a): Case-less *zen'in/zenbu* has the topic feature when scrambled and the focus feature of another QP may not be landed in a position higher than the topic feature of the scrambled *zen'in*, for it would violate the order constraint on these features.

The obligatory topichood of the Caseless *zen*-QPs in the preposed position, as opposed to those in the post-subject position can be observed in the following instances. While the interrogative sentences in (14) can be taken to be questions about the number of people that Taro blamed and the number of books that Hanako read, the sentences in (15), where Caseless *zen*-QPs occur in the pre-subject position, cannot be understood to be such questions:[3]

(14) a. Taroo-ga *zen'in* seme-ta-no-desu-ka?
Taro-Nom everyone blame-Past-Gen-be-Q
'Did Taro blame everyone?'
b. Hanako-ga *zenbu* yon-da-no-desu-ka?
Hanako-Nom everything read-Past-Gen-be-Q
'Did Hanako read everything?'

(15) a. *Zen'in* Taroo-ga seme-ta-no-desu-ka?
everyone Taro-Nom blame-Past-Gen-be-Q
'Did Taro blame everyone?'
b. *Zenbu* Hanako-ga yon-da-no-desu-ka?
everything Hanako-Nom read-Past-Gen-be-Q
'Did Hanako read everything?'

The questions in (15) can be understood to ask for the identity of the person who blamed everyone and the person who read every book, respectively, but it is difficult to understand them as questions about the number of the people blamed by Taro/the number of books read by Hanako. In other words, *zen*-QPs can be the focus of question in (14), but not in (15).

Secondly, if a Caseless *zen*-QP in the pre-subject position is interpreted as a topic by way of being licensed by the topic feature, it is predicted that they cannot occur in the pre-subject position of a clause that lacks the topic feature. Recall from Chapter 6 that description clauses in the sense of Ueyama (1998, 2007), as exemplified below, lack the topic feature.

[3] The sentences in (14) can also be understood to be questions about the person who blamed everyone/read every book. I do not discuss this reading any further here.

(16) description clauses

a. Huzisan-no tyoozyoo-ni denpatoo-o tateru-*no*-*wa* *hukanoo*-*da*
Mt..Fuji-Gen top-Dat broadcasting.tower-Acc build-Gen-Top impossible-be
'It is impossible to build a broadcasting tower on the top of Mt. Fuji.'

b. Mit-tu-izyoo-no kaisya-ga soko-no-torihikisaki-ni syazaisiteiru-*no*-*ga*
3-Cl-or.more-Gen company-Nom that-Gen-client-Dat apologize-Gen-Nom
kikoe-*ta*
can.hear-Past
'I could hear more than three companies apologizing to their client companies.'

c. Taroo-ga tuukoonin-ni bira-o kubatteiru-*tokoro*-*ga* *mie*-*ta*
Taro-Nom passer.by-Dat flyer-Acc distribute-Comp-Nom can.see-Past
'I could see Taro distributing flyers to passers-by.'

(Ueyama (1998, 2007))

If preposed Caseless *zen*-QPs obligatorily have the topic feature, we predict that they cannot be preposed in description clauses. This prediction is borne out:

(17) *Zen*-QPs in the post-subject position

a. Taroo-ga *zen'in* semeteiru-*no*-*ga* *kikoeta*
Taro-Nom everyone blaming-Gen-Nom can.hear-Past
'I could hear Taro blaming everyone.'

b. Hanako-ga *zenbu* yomu-no-wa hukanoo-da
Hanako-Nom everything read-Gen-Top impossible-be
'It is impossible for Hanako to read everything.'

c. Taroo-ga *zen'in* sidoositeiru-tokoro-ga mie-ta
Taro-Nom everyone supervise-Comp-Nom can.see-Past
'I could see Taro supervising everyone.'

(18) a. * *Zen'in* Taroo-ga semeteiru-no-ga kikoe-ta
everyone Taro-Nom blaming-Gen-Nom can.hear-Past
'I could hear Taro blaming everyone.'

b. * *Zenbu* Hanako-ga yomu-no-wa hukanoo-da
everything Hanako-Nom read-Gen-Top impossible-be
'It is impossible for Hanako to read everything.'

c. * *Zen'in* Taroo-ga sidoositeiru-tokoro-ga mie-ta
everyone Taro-Nom supervise-Comp-Nom can.see-Past
'I could see Taro supervising everyone.'

As shown in (17) and (18), Caseless *zen*-QPs cannot be scrambled to the pre-subject position of a description clause, whereas they can occur in the post-subject position. In contrast to Caseless *zen*-QPs, *zen*-QPs can be scrambled to the pre-subject position of description clauses if they are attached by a Case-particle:

(19) a. *Zen'in-o* Taroo-ga semeteiru-no-ga kikoe-ta
everyone-Acc Taro-Nom blaming-Gen-Nom can.hear-Past
'I could hear Taro blaming everyone.'

b. *Zenbu-o* Hanako-ga yomu-no-wa hukanoo-da
everything-Acc Hanako-Nom read-Gen-Top impossible-be
'It is impossible for Hanako to read everything.'

c. *Zen'in-o* Taroo-ga sidoositeiru-tokoro-ga mie-ta
everyone-Acc Taro-Nom supervise-Comp-Nom can.see-Past
'I could see Taro supervising everyone.'

Zen-QPs with a Case-particle may or may not be driven by the topic feature to [Spec, TP]. This allows them to be scrambled to the pre-subject position of a description clause. Caseless *zen*-QPs, on the other hand, need to be licensed by the topic feature when scrambled to the pre-subject position and hence cannot be scrambled to the pre-subject position in description clauses. This is the source of the difference between (18) and (19).

In sum, we have shown that those QPs that only undergo the topic-triggered scrambling, but not the non-topic scrambling, must take wide scope. This correlation between the obligatory application of topic-triggered scrambling and the obligatory wide scope in the scrambled position supports our analysis that it is the topic feature that determines the scope of a scrambled QP.

9.4 Summary of Chapter 9

This chapter has discussed the syntactic and semantic properties of Caseless *zen*-QPs and characterized them as constituting a different class of QPs from Type 1 and Type 2 QPs. We have pointed out that Caseless *zen*-QPs take obligatory wide scope when scrambled and that they undergo only the topic-driven scrambling. This correlation provides further evidence for our proposal in Chapter 4 that the topic feature determines the scope of a scrambled QP.

Chapter 10
Conclusion

In this thesis we have discussed the syntactic factors that determine quantifier scope in Japanese and English. We have identified two kinds of syntactic determinant of quantifier scope. One kind of determinant of QP scope is the internal structure of QPs, while the other kind has to do the external syntactic environment where QPs are found.

In Chapter 2 we examined two approaches to the QP-internal factor that determines QP scope. One approach, as in Diesing (1992) and Homma et al. (1992), claims that the application of the rule that gives wide scope to a QP is constrained by the semantics of the QP: the relevant rule applies to presuppositional QPs, but not to nonpresuppositional QPs. We argued against this approach and proposed that it is the syntactic structure of a QP, not the semantic property of it, that determines the scope of the QP. Specifically, the relevant QP-internal factor that determines QP scope is the structural position of a quantifier in a QP. QPs with a quantifier in [Spec, DP] may take wide scope, but those without one in [Spec, DP] may not. We argued for this constraint based on the observation that only narrow scope is possible with QPs with a floated quantifier, as in (1a), and those QPs with a quantifier preceded by a modifier as in (1b):

(1) a. *Booru-o huta-tu* daremo-ga ket-ta.
ball-Acc 2-Cl everyone-Nom kick-Past
'Everyone kicked two balls.'
[unambiguous: ∀ > 2, *2 > ∀]

b. *Akai san-dai-no kuruma-o daremo-ga* mokugekisi-ta
red 3-Cl-Gen car-Acc everyone-Nom witness-Past
'Everyone witnessed three red cars.'
[unambiguous: ∀ > 3, *3 > ∀]

In Chapter 3 we discussed the relation between the syntactic position of a quantifier inside a QP and the presuppositionality of the QP. We have reached the conclusion that the semantic property of (non)presuppositionality of a QP and the syntactic structure of the QP are not necessarily in a one-to-one relation. A QP is interpreted presuppositionally if the QP has a quantifier in [Spec, DP], but a presuppositional interpretation may also be yielded if the QP has a quantifier in another position. This conclusion provides support for the analysis in Chapter 2.

In Chapter 4 we shifted our focus to external syntactic determinants of QP scope. We proposed that the scope of a QP is determined in the particular syntactic position that the QP occupies. We have called this particular position the *SI head*, the topmost position of a chain

of *SI positions*, which are defined as the positions where a "semantic" grammatical feature called an *SI feature* is licensed. One SI feature has been identified as the topic feature in the sense of Miyagawa (2010). Thus if a QP is scrambled by the topic feature, the scope of the QP is determined in the position where it is licensed by this feature. Another type of SI head is the position where a thematic role is assigned to a QP. Thus unless a QP is not licensed by an SI feature, the position where it is assigned a thematic role is its SI head.

(2) a. [TP **QP$_{OBJi}$** [vP **QP$_{SUBJ}$** [VP t_i V]]]
[topic] **[θ]** [θ]

b. [TP QP$_{OBJi}$ [TP **QP$_{SUBJ}$** [vP t_j [VP **t_i** V]]]]
[topic] [θ] **[θ]**

In (2a), the scrambled object QP is licensed by the topic feature in [Spec, TP]. In this case [Spec, TP] is the scope position for the scrambled QP. Since it c-commands the subject QP, this configuration dictates that the object take scope over the subject. In the alternative derivation in (2b) it is the subject but not the object that is driven by the topic feature. In this case the object must take scope in its original position, the position where it is assigned a θ-role. This captures the scope ambiguity of a sentence with QPs in the order Object – Subject.

Chapter 5 discussed the scope of object QPs and negation and attempted to account for the fact that the object NP-FQ as in (3) may take wide scope over negation, while NP-FQs cannot take wide scope over a subject QP, as observed in the preceding chapters:

(3) Keisatu-wa *tooboohan-o san-nin-izyoo* taihosi-*nakat*-ta
police-Top fugitive-Acc 3-Cl-or.more arrest-Neg-Past
'The police did not arrest three or more fugitive criminals.'
[ambiguous: 3 or more > Neg, Neg > 3 or more]

We accounted for this fact by assuming that an object NP-FQ, as well as an object Q-NP may be moved to the Spec of the functional projection Pres(uppositional)P when the QP has a presuppositional interpretation, and that there are two different positions for negation in Japanese. When an object NP-FQ is moved to [Spec, PresP], the object is moved over the lower negation, and this gives the NP-FQ wide scope over negation.

Chapter 6 challenged the view that Japanese is a rigid-scope language. We showed that the rigidity of QP scope in Japanese is due to the topic feature of the subject QP and the condition that disallows the covert movement of another QP by the focus feature across the the subject QP. This explains the unambiguity of such examples as (4).

(4) *Dareka-ga daremo-o* mi-ta
someone-Nom everyone-Acc see-Past
'Someone saw everyone.'
[unambiguous: ∃ > ∀, *∀ > ∃]

Then we showed as a consequence that inverse scope is possible in Japanese in those clauses where the topic feature on the subject is missing. This is the case with the scope of the subject and the object QP in description clauses in the sense of Ueyama (1998, 2007).

(5) *San-nin-no sensei-ga subete-no gakusei-o* sidoosuru-no-wa
3-Cl-Gen teacher-Nom every-Gen student-Acc supervise-Gen-Top
hukanoo-da/muzukasii
impossible-be/difficult
'It is impossible/difficult for three professors to supervise every student.'
[ambiguous: 3 > ∀, ∀ > 3]

Chapter 7 justified our analysis developed until Chapter 6 on two grounds. We have considered the semantics of Type 1 QPs and its amenability to the semantics of topic and focus. Then we also supported our analysis by pointing out the parallelism between the locality of movement to [Spec, TP] and that of QP scope: where movement by the topic feature is possible, wide scope is possible. Thus our approach to QP scope can account for the reason why long-distance scrambling cannot lead to long-distance scope, while middle-distance scrambling makes middle-distance scope possible. We also justified our account of QP scope in terms of the covert focus movement: since the focus movement is another case of the movement triggered by the feature on T, the QP scope determined by the covert focus movement obeys the same locality restriction as the movement by the feature on T. This approach has successfully accounted for the (un)availability of wide scope of a QP over negation out of different types of complement clause.

In Chapter 8 we extended our approach to cases of QP scope interaction in English. We proposed that the liberal scope of the subject and the object QP, as exemplified in (6), as opposed to the rigid scope in Japanese, is due to the feature borne by the subject.

(6) *Someone* loves *everyone*.

We have accounted for the liberal scope in English by assuming, following Miyagawa (2010), that the English subject is licensed by the Φ-feature, as opposed to the topic feature in the case of the Japanese subject, and by assuming that the focus feature movement occurs covertly in English. Since the Φ-feature is not an SI feature, the subject allows the covert

movement of the focus feature of the object QP over the subject. We have also accounted for the QP scope interaction in the raising construction. The widely-observed scope ambiguity of the matrix subject QP, as exemplified in (7), has been shown to be due to the (non)application of the covert focus feature movement.

(7) *Someone* seems to have left.

We have also shown that our approach can capture the "partial rigidity" of scope observed in the raising construction: if the matrix subject takes matrix scope, another QP cannot take wide scope over it in a sentence such as (8):

(8) *Someone politician* is likely to address *every rally* in John's district.
(May (1977: 201))

This "partial rigidity" of scope in the raising construction has been assimilated to the scope rigidity in Japanese: when the matrix subject has matrix scope, it is due to the focus feature borne by the subject. Lastly we have also proposed in this chapter that the feature responsible for the topicalization in English is another SI feature serving as a determinant of QP scope.

Chapter 9 discussed the scope property of what we call Caseless *zen*-QPs, as exemplified in (9). A notable property of Caseless *zen*-QPs is that they can only take wide scope over a subject QP when scrambled to the pre-subject position, as opposed to scrambled Type 1 QPs, which may take either wide or narrow scope:

(9) *Zen'in* hutari-no kyooin-ga sidoosi-ta
everyone 2.Cl-Gen teacher-Nom supervise-Past
Lit. 'Every student, two teachers supervised.'
[unambiguous: ∀ > 2, *2 > ∀]

This wide scope property of *zen'in/zenbu* has been captured by characterizing them as being able to undergo both the topic-driven scrambling, but not the semantically vacuous A'-type scrambling, the scrambling that is not triggered by the topic feature. This behavior of Caseless *zen*-QPs supports our proposal in Chapter 4, since it tells us of a strong correlation between the availability of the topic feature and the possibility of wide scope.

In summary, the issues that we have discussed in this thesis are listed as below:

(10) a. the relation between the semantics of QPs and QP scope
b. the relation between the structure of QPs and their semantics
c. the relation between scrambling and QP scope

d. rigid vs. liberal scope
e. two kinds of feature that drives movement to [Spec, TP]: the topic feature and the Φ-feature

Although these topics have been studied rather separately in the past literature, this thesis has brought them together onto one single worktable and attempted to discover how they are related to one another to determine QP scope. We have discovered, among other things, that the QP-internal structure plays a crucial role in the availability of the topic feature for the QP, which drives the operation of scrambling and determines the scope of the scrambled QP in [Spec, TP]. Furthermore, the difference between the rigid scope in Japanese and the liberal scope in English has been accounted for by appealing to the difference in the kinds of the feature that drives movement of the subject to [Spec, TP].

One remaining question, however, is whether our account of QP scope interaction between the subject and the object can be extended to other cases, say QP scope interaction between a dative and an accusative object, as in:

(11) a. Taroo-ga *san-nin-no hito-ni* *subete-no gakusei-o* syookaisi-ta
Taro-Nom 3-Cl-Gen person-Dat every-Gen student-Acc introduce-Past
'Taro introduced everyone to three people.'
[unambiguous: 3 > ∀, *∀ > 3]
b. Taroo-ga *subete-no gakusei-o* *san-nin-no hito-ni* syookaisi-ta
Taro-Nom ever-Gen student-Acc 3-Cl-Gen person-Dat introduce-Past
'Taro introduced everyone to three people.'
[ambiguous: 3 > ∀, ∀ > 3]

Our analysis predicts that both sentences are ambiguous with respect to the scope of the dative QP *san-nin-no hito-ni* and the accusative QP *subete-no gakusei-o* since either QP may undergo the covert focus feature movement over the other, as in:

(12) a. For (11a):
i) [$_{TP}$ Taro-ga$_i$ [**[focus]$_j$** [$_{vP}$ t_i [$_{VP}$ san-nin-no hito-ni$_j$ [**subete-no gakusei-o$_k$** syookaisi-]]]]]
→ 3 > ∀
ii) [$_{TP}$ Taro-ga$_i$ [**[focus]$_k$** [$_{vP}$ t_i [$_{VP}$ **san-nin-no hito-ni$_j$** [subete-no gakusei-o$_k$ syookaisi-]]]]]
→ ∀> 3
b. For (11b):
i) [$_{TP}$ Taro-ga$_i$ [**[focus]$_j$** [$_{vP}$ t_i [$_{VP}$ **subete-no gakusei-o$_k$** [san-nin-no hito-ni$_j$

syookaisi-]]]]]
→ 3 > ∀

ii) [$_{TP}$ Taro-ga$_i$ [**[focus]$_k$** [$_{vP}$ t_i [$_{VP}$ subete-no gakusei-o$_k$ [**san-nin-no hito-ni$_j$** syookaisi-]]]]]
→∀> 3

This prediction, however, does not seem to be borne out very straightforwardly since it has been observed that there is an asymmetry in scope between the dative and the accusative object. For example, Hoji (1985) observes that the dative QP-*ni* obligatorily takes wide scope over the accusative QP-*o* when QP-*ni* precedes QP-*o*, as in (11a), while either may take scope over the other in the reversed order, as in (11b). If this is a fact, how can we account for it?

For the scope relation between the subject and the object QPs, we have argued that the rigidity of QP scope in the order Subject-Object is due to the topic feature borne by the subject, while the two-way scope order of QPs in the order Object-Subject is made possible via the structural ambiguity of the two QPs:

(13) For Subject–Object:
[$_{TP}$ **QP$_{SUBJi}$** [$_{vP}$ t_i [$_{VP}$ **QP$_{OBJ}$** V]]]
[topic] [θ] **[θ]**

(14) For Object–Subject:
a. [$_{TP}$ **QP$_{OBJj}$** [$_{vP}$ **QP$_{SUBJ}$** [$_{VP}$ t_jV]]]
[topic] **[θ]** [θ]
b. [$_{TP}$ QP$_{OBJj}$ [$_{TP}$ **QP$_{SUBJi}$** [$_{vP}$ t_i [$_{VP}$ **t_j** V]]]
[topic] [θ] **[θ]**

If we assume that the order DP-*ni* DP-*o* reflects the basic configurational alignment of these two arguments, the scope relation observed with these two arguments is quite similar to that of the subject and the object. Thus if the scope relation between the subject and the object is accounted for by appealing to the SI feature (the topic feature) and the position responsible for licensing it, we may ask if there is any position somewhere in the post-subject domain for one of the internal argument QPs to move into to have an SI feature licensed.

The presence of such a position below vP and above VP was suggested in Chapter 5, where we called the relevant position [Spec, Pres(uppositional)P]. An object QP may move to this position to have its presuppositionality feature licensed:

(15) [$_{TP}$ Subj$_i$ T [$_{vP}$ t_i [$_{PresP}$ Obj$_j$ Pres ([$_{L\text{-}NegP}$ L-Neg) [$_{VP}$ t_j ...

If our analysis in Chapter 5 is on the right track, one conceivable analysis of the examples in (11) will be to say that they have the following structures:

(16) For (11a) (the QP-*ni*- QP-*o* order):
[$_{TP}$ John-ga [$_{PresP}$ **san-nin-no hito-ni$_i$** Pres [$_{VP}$ t_i [**subete-no gakusei-o** syookaisita]]]]

(17) For (11b) (the QP-*o* QP-*ni*- order):
a. [$_{TP}$ John-ga [$_{PresP}$ **subete-no gakusei-o$_j$** Pres [$_{VP}$ **san-nin-no hito-ni** [t_j syookaisita]]]]
b. [$_{TP}$ John-ga [**subete-no gakusei-o$_j$** [$_{PresP}$ **san-nin-no hito-ni$_i$** Pres [$_{VP}$ t_i t_j syookaisita]]]]

In (16), the dative QP has moved to [Spec, PresP]. Since the presuppositionality feature is an SI feature, the position [Spec, PresP] is the SI head for the QP moved to this position. Moreover, the focus feature of the Accusative QP may not be raised over the dative QP, in the way that the focus feature may not be raised over the topic feature of the subject QP. This explains the nonambiguity of (13a). The two structures in (17), on the other hand, are reminiscent of those in the case of the scrambled order of the subject and the object. In (17a) the scrambled accusative object is moved to [Spec, PresP] instead of the dative QP. This structure gives rise to the wide scope of the accusative QP. The same sentence may also have (17b) as its structure, where the dative QP that has moved to [Spec, PresP] while the accusative QP has undergone a semantically vacuous movement. This second structure yields the reverse scope order QP-*ni* > QP-*o*.[1] If this analysis is on the right track, then we will have achieved a principled account of both the scope order of the subject and the object and that of two internal argument QPs.

[1] Besides the two derivations illustrated in (17), the QPs also have the option of undergoing the covert focus feature movement. I have not included these other derivations in (17) since the derivations given in (17) alone exhaust the scope interpretation possibilities so that the option of covert focus movement does not add any other scope possibilities.

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Corpus

COCA = Corpus of Contemporary American English [http://corpus.byu.edu/coca/]

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