The principal goal of my thesis is to account for four kinds of major syntactic phenomena: 6 kinds of asymmetry of syntactic domain of two internal arguments pointed out by Barss and Lasnik (1986), passivizability, constrained wh-movement of a Goal NP and scope relations in the double object and dative constructions and argue that the hierarchical reordering occurs among arguments through the derivation from the base structure to the surface structure in these constructions.


In chapter II, I will review some of the theoretical assumptions which are necessary in analyzing the double object construction. First of all, I adopt the thematic hierarchy which has the order Agent > Goal > Theme..., following the proposals by Aoun and Li (1989), Oba (1993), Kitagawa (1994) and Takano (1996).

Next, I claim that both the dative and double object constructions are derived from the same base structure. The crucial assumption is that a subject is base generated in the V' adjoined position above two internal arguments. In this analysis, scope relations among a subject and two internal arguments observed by Bruening (1999a) can be explained by the presence or the absence of the hierarchical reordering of arguments. In addition, I posit the projection $\mu$ as a landing site of V following Johnson (1991). V always raises to $\mu$. As for Case theory, I follow Takano (1996) and Collins (1997), and assume that the structural Case of an NP that comes immediately after V is checked at Specifier of VP.

The dative construction is derived as follows. The Theme NP raises to Specifier of VP to check structural accusative Case, the subject also raises to Specifier of TP to check nominative Case, and inherent Case is assigned to the Goal NP by V as a realization of preposition to. V raises to $\mu$ overtly to represent a surface word order.

In the derivation of the double object construction, I claim that the $\theta$-role Recipient is assigned to a Goal NP. The covert P$\phi$ incorporates into V. A subject raises to Specifier of TP to check nominative Case, the Goal NP raises to Specifier of VP to check accusative Case. inherent Case is assigned to a Theme NP by V. Consequently, there is no hierarchical reordering between
the Goal NP and the Theme NP, thus the Goal NP always c-commands the Theme NP, hence scope-freezing.

Toward the end of my thesis, I will verify the proposed analysis on the four major syntactic phenomena discussed in chapter I. First, I will show that Barss and Lasnik’s observation can be explained by the structural relations of two internal arguments without depending on Linear precedence. Second, I will indicate that variation in acceptability in passivizability among dialects can be explained by modifying inherent Case-assignment system. Third, I will show that preposition incorporation is responsible for the constraints of movement of a Goal NP. Finally, I will show that most of the scope interpretations among the subject and two internal arguments can be explained by c-commanding relations among arguments.

At the final section, I will present an analysis of for-dative verbs. I claim that there are two major differences in the derivation of the double object construction. First, the Beneficiary PP gains an argument status only when the Goal NP is absent. Second, even after PI occurs, the trace of the P function as a covert oblique Case-marker. This analysis gives a key to understanding the lower acceptability of passives in for-dative verbs than in to-dative verbs. Other derivations are the same as those in to-dative verbs.
Structural Relations of Arguments in the Double Object and Dative Constructions
Structural Relations of Arguments in the Double Object and Dative Constructions

A Thesis
Presented to
The Faculty of the Graduate Course at
Hyogo University of Teacher Education

In Partial Fulfilment
of the Requirements for the Degree of
Master of School Education

by
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(Student Number: M98451F)

December 1999
Acknowledgements

This thesis would not have been finished without the help of many people. First and foremost, I would like to express my special thanks to my seminar supervisor, Dr Hideki Kishimoto for his time, help and support. His elegant lectures were very impressive, and his insightful comments and advice cut the Gordian knot. Being supported by him, I was always led to the right direction. He was the lighthouse that gave relief and courage as well as an ordeal to a small boat.

I also would like to thank Dr Mariko Udo for providing me an opportunity to write an article about the Double Object Construction. Her penetrating words encouraged me in many respects.

I have benefitted from discussions with Mr James Bushell, the former Assistant Language Teacher at Hiroshima Prefectural Shobara Kakuchi High School, who has offered me grammatical judgements. And I would like to thank my ALT friend, Mr Daniel Nelson Krivonak for giving me a number of suggestions for stylistic improvements.

Last, I thank my family and friends, who have supported me in many ways.

Yasuhiro Aoki
December 1999
Abstract

The principal goal of my thesis is to account for four kinds of major syntactic phenomena; 6 kinds of asymmetry of syntactic domain of two internal arguments pointed out by Barss and Lasnik (1986), passivizability, constrained wh-movement of a Goal NP and scope relations in the double object and dative constructions, and argue that hierarchical reordering occurs among arguments through the derivation from the base structure to the surface structure in these constructions.


In chapter II, I will review some of the theoretical assumptions which are necessary in analyzing the double object construction. Next, I argue that both the dative construction and the double object construction are derived from the same base structure. The crucial assumption is that the subject is base generated in the V' adjoined position over two internal arguments. In this analysis, scope relations among a subject and two internal arguments observed by Bruening (1999a) can be explained by way of the presence or absence of the hierarchical reordering arguments.

The dative construction is derived as follows. The Theme NP raises to Specifier of VP to check structural accusative Case, the subject also
raises to Specifier of TP to check nominative Case, and inherent Case is
assigned to the Goal NP by V as the preposition to. V raises to μ overtly.

In the derivation of the double object construction, I claim that the θ-role Recipient is assigned to the Goal NP. The covert Pφ associated with it incorporates into V. The subject raises to Specifier of TP to check nominative Case, and the Goal NP raises to Specifier of VP to check accusative Case. Inherent Case is assigned to the Theme NP by V. Consequently, there is no hierarchical reordering between the Goal NP and the Theme NP, thus the Goal NP always c-commands the Theme NP, hence scope-freezing.

Toward the end of my thesis, I will verify the proposed analysis discussed in chapter II. First, I will show that Barss and Lasnik's observation can be explained by the structural relations of two internal arguments without depending on Linear precedence. Second, I will indicate that variation in acceptability in passivizability among dialects can be explained by parameterizing the inherent Case-assignment system. Third, I will show that preposition incorporation is responsible for the constraints on movement of a Goal NP. Finally, I will show that most of the scope interpretations among the subject and two internal arguments can be explained by the c-commanding relations among arguments.

In the final subsection, I will present an analysis of for-dative verbs. I claim that there are two major differences between for-dative and to-dative verbs in the derivation of the double object construction. First, the Beneficiary PP gains an argument status only when the Goal NP is absent. Second, even after PI occurs, the trace of the Pφ functions as a covert
oblique Case-marker. This analysis gives a key to understanding the lower acceptability of passives in for-dative verbs than in to-dative verbs in the double object construction. Other derivations are the same as those in to-dative verbs.
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Introduction

In this thesis I will discuss the syntactic structures of the double object and dative constructions in English, exemplified in (1) and (2).

(1) a. John gave Mary a book.
    b. John gave a book to Mary.

(2) a. John bought Mary a book.
    b. John bought a book for Mary.

I refer to (1a) and (2a) as the double object constructions, and to (1b) and (2b) as the dative constructions, respectively. Verbs showing the kind of alternation in (1) are called to-dative verbs, and verbs showing the alternation in (2) are called for-dative verbs. I will refer to an NP that comes immediately after the verb in the dative construction as a Theme NP or simply, Theme, while I will refer to an NP immediately after a to-dative verb as a Goal NP or Goal. I will refer to an NP immediately after a for-dative verb as a Beneficiary NP or Beneficiary.

A number of interesting syntactic phenomena concerning idiosyncrasies involving a Theme NP and a Goal NP are observed in the double object and dative constructions. For instance, in the double object construction, a Theme NP is not easily allowed as the subject of a passive sentence. Likewise a Goal phrase is seldom allowed to be wh-moved, and so on. In addition, there is also an asymmetry in scope interpretations between the two constructions. These facts imply that the dative alternation involves a hierarchical reordering of arguments. The major goal of this thesis is to propose a new analysis that accounts for these syntactic
phenomena. In particular, in this thesis, I will deal with the following four major syntactic phenomena; 1: Barss and Lasnik's (1986) observation on binding asymmetries between the two internal arguments, 2: passivizability, 3: scope relations and 4: wh-movement. I will propose that a subject and a Goal NP are base-generated in V' adjoined positions, according to a thematic hierarchy which I take to have the order Agent > Goal > Theme. These arguments are shown to be reordered hierarchically through the derivation in the dative construction, while there is no such hierarchical reordering in the double object construction. This analysis will explain peculiar scope interpretations of internal arguments of double object verbs and Barss and Lasnik's (1986) six phenomena.

In this paper, I will analyze a ditransitive verb as capable of checking one structural Case and assigning one inherent Case, which will explain an asymmetry in passivizability between a Goal NP and a Theme NP found in the dative and double object constructions. I also propose that oblique Case is assigned to a Beneficiary NP by an empty P, while there is no such oblique Case-assignment to a Goal NP. This proposal will explain the asymmetry between for-dative verbs and to-dative verbs in the passivizability of a Goal NP or a Beneficiary NP.

The organization of this thesis is as follows. In chapter I, I will summarize four syntactic phenomena, and survey some of the representative analyses in the literature. In chapter II, I will advance a new analysis which states that a subject is base-generated in V' adjoined position.
Chapter I: Syntactic Asymmetries and Survey

0. Overview

An enigma of English syntax is why the syntactic behavior of two internal arguments in the double object and dative constructions varies. In particular, in this paper, I will look at the following four major syntactic phenomena, six binding phenomena pointed out by Barss and Lasnik (1986), passivizability, wh-movement and scope relations of two internal arguments. I will survey some representative analyses, and point out both merits and drawbacks of each analysis. Second, I will advance a new analysis that explains the peculiar distribution of scope relations among the subject and two internal arguments of double object verbs. (Bruening (1999a)).

1. Syntactic Phenomena

In this section, I will review some of the syntactic facts in the double object construction, namely, six binding phenomena pointed out by Barss and Lasnik (1986), passivizability, wh-movement and scope relations pertaining to the two internal arguments of double object verbs.
1.1 Barss and Lasnik's Six Asymmetrical Phenomena

Barss and Lasnik (1986) show six types of asymmetrical binding relations found between the two internal arguments of a double object verb, including (1) Anaphor binding, (2) Quantifier binding, (3) Weak crossover, (4) Superiority, (5) Each... the other construction, and (6) Negative polarity.

The first asymmetry I will discuss here concerns anaphor binding. In (3a) and (3b), the anaphor herself is bound by Mary, but in (3a') and (3b'), it is not. This means that the indirect object is in a higher position than the direct object, and that the former asymmetrically c-commands the latter.

(3) Anaphor Binding
   a. I showed Mary herself.
   a'. *I showed herself Mary.
   b. I showed/presented Mary to herself.
   b'. *I showed/presented herself to Mary. (Aoun and Li's (1989))

The second asymmetry is found in quantifier binding. For quantifier binding to be successful, a bound pronoun must be in the c-command domain of a quantificational NP. This condition is satisfied in (4a) and (4b), but it is not satisfied in (4a') and (4b').

(4) Quantifier Binding
   a. I gave every workeri's mother hisi paycheck.
   a'. *I gave hisi mother every workeri's paycheck.
   b. I gave/sent every checki to itsi owner.
   b'. ??I gave/sent hisi check to every workeri.

The third asymmetry concerns weak crossover. In (5a) and (5b), the NP immediately after the verb is wh-moving, but in (5a') and (5b'), the
second NP is wh-moved. Examples (5a) and (5b) do not exhibit a weak crossover effect, while (5a') and (5b') do.

(5) Weak Crossover
   a. Which mani did you send hisi check?
   a'. *Whosei pay did you send hisi mother?
   b. Which checki did you send to itsi owner?
   b'. *Which workeri did you send hisi check to?

   In (5a') and (5b'), the extraction of a wh-phrase over the co-indexed phrase causes ungrammaticality.

   The fourth asymmetry concerns superiority, which requires that when two wh-phrases are present, the structurally higher (superior) one must be wh-moved (Chomsky (1981)). The examples in (6) show that in multiple wh-questions, the indirect object can be wh-moved, but the direct object cannot in the double object construction.

(6) Superiority
   a. Who did you give which check?
   a'. *Which paycheck did you give who?
   b. Which check did you send to who?
   b'. *Whom did you send which check to?
    (* To who did you send which check?)

   The fifth asymmetry is found in each ... the other construction. The examples below show that the NP immediately after the verb can bind the second NP, but not conversely.

(7) Each ... the other Construction
   a. I showed each man the other's socks.
   a'. *I showed the other's friend each man.
   b. I sent each boy to the other's parents.
   b'. *I sent the other's check to each boy.
The final asymmetry concerns negative polarity. For a negative polarity item (NPI) to be interpreted, it must be c-commanded by a negative element like *no one.*

(8) Negative Polarity
   a. I showed *no one* anything.
   a'. *I showed anyone* nothing.
   b. I sent *no presents* to *any of the children.*
   b'. *I sent any of the packages to none of the children.*

The above data illustrate that the NPI *any* is in the scope of negation in (8a) and (8b), while it is not in (8a’) and (8b’).

On the basis of these data, Barss and Lasnik argue against Oehrle (1976), Kayne (1984), and Chomsky and Lasnik (1977), who propose the following structures for the double object construction.


V    NP1    NP2
     VP

In both Oehrle’s structure and Kayne’s structure, NP1 and NP2 mutually c-command, therefore predicting that all of the sentences in (3-8) are grammatical. By contrast, in Chomsky and Lasnik’s analysis, NP1 is c-commanded by NP2 and thus we do expect that the judgements are reversed in (3-8). Barss and Lasnik argue that the facts will be explained in terms of linear precedence rather than the structural notion of c-command. At the same time, Barss and Lasnik also suggest that if additional structures which guarantee an asymmetrical c-commanding relation between the direct and the indirect objects are posited, these phenomena may be explained structurally. Jackendoff (1990) and Napoli
(1992) argue for linear precedence. Larson (1988) argues that these phenomena can be handled by way of 'VP-shell', which allows a stacking of VP structure. In my thesis, I will show these asymmetrical phenomena can be explained along the line suggested by Larson (1988).

1.2 Passivizability

One noticeable fact about passivizability of the double object construction is that there are dialectal variations. Czepluch (1982) illustrates the acceptability judgements among various dialects as in (10-11).

(10)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The book was given to Mary.</td>
<td>ok</td>
<td>ok</td>
<td>ok</td>
<td>ok</td>
</tr>
<tr>
<td>b. Mary was given the book.</td>
<td>ok</td>
<td>ok</td>
<td>ok</td>
<td>ok</td>
</tr>
<tr>
<td>c. The book was given Mary.</td>
<td>ok</td>
<td>ok</td>
<td>ok</td>
<td>*</td>
</tr>
</tbody>
</table>

(11)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The book was bought for Mary.</td>
<td>ok</td>
<td>ok</td>
<td>ok</td>
<td>ok</td>
</tr>
<tr>
<td>b. Mary was bought the book.</td>
<td>*</td>
<td>?</td>
<td>ok</td>
<td>ok</td>
</tr>
<tr>
<td>c. The book was bought Mary.</td>
<td>*</td>
<td>*</td>
<td>ok</td>
<td>*</td>
</tr>
</tbody>
</table>

The majority of American speakers do not accept (10c) and (11c), where the Theme NP is the subject of the sentence, while most British speakers do accept (10c) and some speakers accept (11c). The judgements diverge in (11b). (The judgements for the dialect A are given in Fillmore (1965) and Green (1974), those for B in Jackendoff and Culicover (1971), those for C in Allerton (1978) and those for D in Oehrle (1976).) There are roughly two different proposals advanced to explain these differences; one proposal analyzes the differences as coming from the nature of Case assigned to the
Theme (Larson (1988) and Fujita (1996)), the other tries to capture them by positing an empty preposition for the Theme (Czepluch (1982)). On the first approach the differences are due to a case conflict that occurs when an NP assigned lexical Case raises to the subject position where the nominative Case is checked. In the second approach, the empty P holds responsibility for the variation in acceptability.

1.3 Wh-Movement

Another issue that has to do with the present topic is a constraint imposed on wh-movement in the double object construction, which is shown in (12).

(12)  a. John gave Mary the book.
       b. *Who did John give the book?
       c. What did John give Mary?
       d. John gave who the book?  (Czepluch (1982))

The examples (12b) and (12c) show that a Theme NP can be wh-moved, but a Goal NP cannot. (12d) shows that when the indirect object wh-phrase remains in situ on the surface, the sentence is acceptable as an echo question. Obviously, the wh-movement of the Goal phrase is responsible for the ungrammaticality of (12b). The following data further confirm the existence of this constraint (Amano (1998)).

(13)  a. Who (m) did John tell that Mary was staying?
       a'. ?*Who (m) did John tell the story?
       b. Who (m) did John teach how to pronounce the word?
       b'. ?*Who (m) did John teach English?  (citing Otsu 1977)
(14)  a. Who (m) did you teach?
   a'. *Who (m) did you teach English?
   b. ?Who (m) did you write?
   b'. *Who (m) did you write a letter?

In (13), where the direct object is a clausal element, the Goal NP can be
wh-moved. In (14), where the direct object is absent, the Goal NP can be
wh-moved. The judgements are not so secure on this point, however.
Hudson (1992) states that partial extraction out of a Goal NP is possible as
in (15).

(15) Which book shall we give [the author of] [a prize]?

Hudson also reports that the extraction of a whole NP is considered easier
than the partial extraction, implying that the extracting of the Goal NP is
possible in his dialect. The judgements may diverge, however, and in fact,
Kuno (1973) reports different judgements.

(16)  a. John gave a picture of Mary a finishing touch.
   b. ??Who did John give a picture of a finishing touch?
   c. John gave moving to Florida serious consideration.
   d. ??Where did John give moving to serious consideration?

It seems that these examples show a difference between American and
British English. In British English, both Goal and Theme NPs may be
moved by wh-movement but in American English, only the Theme NP can
be moved. Next, as pointed out by Barss and Lasnik (1986), when a
sentence has two wh-phrases (Goal wh-phrase and Theme wh-phrase), a
Goal NP rather than a Theme NP must be wh-moved. Further, the fact
that a Goal NP does not undergo movement to a non-argument position
(A'-movement) is observed in such as, Heavy NP Shift, Tough movement,
Clefting, Topicalization and Relativization.
(17) Heavy NP Shift  
   a. *I gave candy every child that came to the door.  
   a'. I gave to Johnny every piece of candy I could find. (Baker (1997))  

(18) Tough movement  
   a. *Harriet is tough to write letters.  
   a'. Letters are tough to write Harriet.  
   b. *Harriet is tough to buy clothes.  
   b'. Clothes are tough to buy Harriet.  

(19) Clefting  
   a. *It's Harriet (that) I gave the watch.  
   a'. It's the watch (that) I gave Harriet.  
   b. *It's Harriet (that) I bought the watch.  
   b'. It's the watch (that) I bought Harriet.  

(20) Topicalization  
   a. *These people, I wouldn't send a penny.  
   a'. A penny, I wouldn't send these people.  
   b. *Elsie, I wouldn't buy anything.  
   b'. Anything, I wouldn't buy Elsie.  

(21) Relativization  
   a. *This is the person (that) Selma sold the car.  
   a'. This is the car (that) Selma sold the person.  
   b. *Do you know the person (that) I made this dress?  
   b'. Do you know this dress (that) I made the person? (Amano (1998))  

These phenomena indicate that a Goal NP cannot be moved to an A'-position, despite the fact that it is moved to an A-position (e.g., a subject position where the sentence is passivized). For reasons of space, this thesis will deal with only wh-movement.  

There are many approaches to this issue. For instance, Whitney (1982) explains this phenomena by way of the binding theory. She argues that the trace of wh-movement is a bound variable, which is assumed to be a referring expression and must be free in the binding theory.
(22) a. I gave [a book about physics] [to a man I know].
   b. I gave [a man I know] [a book about physics] ti.

The double object sentence (22b) is derived from (22a), and (22c) is derived from (22b). The ungrammaticality of (22c) is explained by a surface filter as in (23).

(23) Star a sentence containing a bound variable and a trace which are coindexed.

In (22c), the bound variable (x) is not free, so it is not acceptable. However, this analysis does not explain the grammaticality of the examples in (13), where a Theme is a clausal element. In an attempt to solve this problem, Czepluch (1982) argues that the empty P is responsible for the constraint as in passives. (Larson (1988) argues that V' Reanalysis blocks the wh-movement of a Goal NP.)

1.4 Scope Relations

The final phenomenon which I will take up in my thesis is relative scope relations between the two internal arguments of double object verbs.

(24) a. The teacher assigned one problem to every student.
   b. The teacher assigned one student every problem. (Larson (1990))

(25) a. Mary gave some book to everyone.
   b. Mary gave someone every book. (Aoun and Li (1989))

(26) a. The teacher gave a (different) book to every student.
   b. The teacher gave a (#different) student every book. (Bruening (1999b), # = infelicitous)
In the (a) examples in (24-26), the scope interpretations between the two internal arguments are judged to be ambiguous, in that either one/some/a takes scope over every, or every takes scope over one/some/a. Thus, (24a) has the following two interpretations; every student receives the same one problem (one>every), or every student receives a different problem one by one (every>one). In contrast, the (b) examples in (24-26) are unambiguous, the only available reading is that one/some/a takes scope over every. Thus, (24b) has the following interpretation; there is only one student, who receives every problem (one>every). It is clear that linear precedence cannot explain that fact, nor can Larson's (1988) VP-Shell analysis. In their analyses, a Theme NP c-commands a Goal NP in the dative construction, and in the VP-Shell analysis, the hierarchical reordering between Theme and Goal NPs occurs in the double object construction. These analyses predict that the scope relation is unambiguous in the dative construction and is ambiguous in the double object construction, contrary to fact. Larson (1990) leaves this problem open.

Aoun and Li (1989) show that there are some examples that have ambiguous scope interpretations even in the double object construction.

(27) a. The committee gave some student every book in the library.
    b. Mary showed some bureaucrat every document she had.
    c. John asked two students every question. (p.166)

They claim that (27a) and (27c) are unambiguous, but (27b) is ambiguous. It seems that this fact has something to do with the heaviness of the Goal NP. I will discuss this later in chapter II.
Kitagawa (1994) also claims that the change of the c-commanding relations of two internal arguments through the derivation causes scope ambiguity. In Kitagawa's analysis, a Theme NP is base-generated structurally lower than a Goal NP, and then raises to a higher position, which allows the two internal arguments to c-command mutually in the dative construction. The ambiguity in the scope interpretation is due to this reordering of the internal arguments. On the other hand, there is no reordering of internal arguments in the double object construction, and thus the scope is frozen. (see (54-55))

Bruening (1999a) also considers why the possible scope relations among three arguments (including the subject) of to-dative verbs are limited. Bruening claims that many of the possible logical scope relations for (28a) are missing.

(28) a. At least one teacher gave most students every book on the syllabus.
    b. A different teacher gave every student one book.
    c. A different waiter filled every glass with one drink.

There are 6 scope relations logically, but only two of them are acceptable as shown in Table 1.

Table 1 Possible combinations of three quantifiers and acceptability

<table>
<thead>
<tr>
<th>Subject</th>
<th>Object1</th>
<th>Object2</th>
<th>at least one &gt;&gt; most &gt;&gt; every</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>Object2</td>
<td>Object1</td>
<td>at least one &gt;&gt; every &gt;&gt; most</td>
</tr>
<tr>
<td>Object1</td>
<td>Subject</td>
<td>Object2</td>
<td>most &gt;&gt; at least one &gt;&gt; every</td>
</tr>
<tr>
<td>Object1</td>
<td>Object2</td>
<td>Subject</td>
<td>most &gt;&gt; every &gt;&gt; at least one</td>
</tr>
<tr>
<td>Object2</td>
<td>Subject</td>
<td>Object1</td>
<td>every &gt;&gt; at least one &gt;&gt; most</td>
</tr>
<tr>
<td>Object2</td>
<td>Object1</td>
<td>Subject</td>
<td>every &gt;&gt; most &gt;&gt; at least one</td>
</tr>
</tbody>
</table>

(following his terms; Object1 (O1) = Goal, Object2 (O2) = Theme)
For instance, (28a) has the following two readings. One is that the subject takes wide scope over O1 and O1 in turn takes scope over O2. On this reading, there was *at least one teacher* who gave all of his books to a group of *most students*, as illustrated in (29a).

(29) a. Illustration of $S > O1 > O2$  
   b. Illustration of $O1 > S > O2$

(⊗ stands for teacher, ◦ stands for student and ⊙ stands for book)

The other reading is that O1 takes wide scope over the subject and the subject takes scope over O2. In this case, the sentence is interpreted as: for *most students* there was *at least one teacher* such that he gave *every book* to them. On this reading, the number of the teachers would be more than *most students*, as illustrated in (29b). (In (28b) and (28c), the same scope relations are obtained.)

The dative construction (as well as locative constructions) in (30) on the other hand, has four out of six possible scope relations as shown in (31);

(30) a. Most teachers gave a syllabus to every student.  
   b. At least one teacher should give most handouts to every student.  
   c. At least two workers loaded some weight onto every truck.  
   d. Most waiters have filled some drink into every glass.

(31) Scope Relations in the Dative Construction

$\text{Subj} > O1 > O2$, $\text{Subj} > O2 > O1$, $O1 > \text{Subj} > O2$, $O2 > \text{Subj} > O1$  
(missing: $O1 > O2 > \text{Subj}$, $O2 > O1 > \text{Subj}$)

Bruening claims that the example (30a) does not have the readings given below;
O1>O2>Subj: There exists a unique syllabus such that for each student, most teachers gave that syllabus to him/her.

O2>O1>Subj: For each student there is a certain syllabus such that most teachers gave that student that syllabus.

The acceptability of logical scope orders shown by Bruening is summarized in Table 2.

Table 2: Logical Orders and Acceptability

<table>
<thead>
<tr>
<th>Double Object</th>
<th>Dative</th>
</tr>
</thead>
<tbody>
<tr>
<td>S &gt; O1 &gt; O2</td>
<td>✓</td>
</tr>
<tr>
<td>S &gt; O2 &gt; O1</td>
<td>*</td>
</tr>
<tr>
<td>O1 &gt; S &gt; O2</td>
<td>✓</td>
</tr>
<tr>
<td>O1 &gt; O2 &gt; S</td>
<td>*</td>
</tr>
<tr>
<td>O2 &gt; S &gt; O1</td>
<td>*</td>
</tr>
<tr>
<td>O2 &gt; O1 &gt; S</td>
<td>*</td>
</tr>
</tbody>
</table>

In chapter II, I will propose an analysis which can account for these scope relations.

2. Previous Analyses


2.1 Czepluch and Baker

Czepluch (1982) analyzes the dative and double object constructions with no reference to transformational or lexical rules. Comparing German and English, he concludes that ditransitive verbs in German have inherent
Case, while those in English do not. He posits a covert preposition which transmits the θ-role of the verb in the adjacent position to explain dative movement in terms of the Empty Category Principle (ECP). By comparing the syntactic behavior of *to*-dative verbs and *for*-dative verbs, he shows that there is a structural difference between *to*-dative and *for*-dative verbs as in (32).

(32)  
  a. John (vp (v bought the book) for Mary).  
  b. John (vp (v bought (pf e Mary) the book)).

In (32a), the *for*-phrase is adjoined to V', while in (32b), the Beneficiary NP with the empty P (e) is generated as an argument of V. This analysis is based on the data in (33-34);

(33)  
  a. John bought a book for Mary, and Bill did so for Sue.  
  b. *John gave a book to Mary, and Bill did so to Sue.

(34)  
  a. John put the beer into the ice-box for Mary.  
  b. *John put the beer into the ice-box to Mary.

In (33a), *did so* substitutes for *bought a book*, while the ungrammaticality in (33b) implies that *did so* substitutes for *gave a book to Mary*. This indicates that the *to*-phrase lies within VP. In (34b), the *to*-phrase is extraposed by the intervening *into*-phrase, which causes its ungrammaticality. On the basis of these data, Czepluch argues that a *to*-phrase is subcategorized for by the verb, while a *for*-phrase is not. He assumes that a *for*-phrase is adjoined to V'. He also claims that the low grammaticality of passive sentences with *for*-dative verbs is accounted for by assuming that a *for*-phrase cannot be lowered into V' in the same manner as *to*.
Baker (1988) discusses the English double object construction in comparison with applicatives in Bantu languages. First, he claims that Preposition Incorporation (PI) and Noun Reanalysis occur in English, by way of which the direct object (Theme) becomes co-indexed with the verb. Second, he posits the Non-Oblique Trace Filter, which requires an applied object (Goal) to be governed by an empty preposition. Baker analyzes the structure for the double object construction as in (35), which is similar to the one by Czepluch (1982).

(35) D-Structure  S-Structure

The Czepluch-style analysis has the merit of explaining the constraint on wh-movement of an indirect object. But this analysis requires a ternary branching structure. Thus, Barss and Lasnik's phenomena cannot be solved without assuming linear precedence, since a Theme NP c-commands a Goal NP in (35), the grammaticality shown in (3-8) is reversed. This assumption may also be problematic in explaining scope relations of the two internal arguments. According to linear precedence, the second NP is always in the domain of the NP immediately after the verb, so the scope ambiguity in the dative construction is not explained.
In this paper, even though I adopt the notions of empty $P$ and $PI$, I will show that an analysis based on the hierarchy of the two internal arguments has generality in explaining syntactic phenomena discussed in the previous section.

2.2 Larson's VP-Shell

Larson (1988) claims that both in the double object and dative constructions, the NP immediately after the verb asymmetrically c-commands the other NP, which accounts for the six phenomena pointed out by Barss and Lasnik (1986). He proposes the VP-shell structures in (36), which involves one extra VP, assuming Single Complement Hypothesis. The thematic hierarchy has the order AGENT $>$ THEME $>$ GOAL $>$ OBLIQUES (manner, location, time, ...). (pp.381-382)

(36) a. Dative Construction  
(36) b. Double Object Construction

In (36a) and (36b), the main verb moves to higher $V$ to satisfy the requirements of Case and agreement. Case is assigned under government. The double object construction is derived from the dative construction in the following way. First, PASSIVE, which is analogous with ordinary
Passivization, is applied to the innermost VP and Argument Demotion occurs together with V' Reanalysis. Argument Demotion and V' Reanalysis are defined as in (37) and (38).

(37) Argument Demotion
If \( \alpha \) is a \( \theta \)-role assigned by \( X_i \), then \( \alpha \) may be assigned (up to optionality) to an adjunct of \( X_i \). (p.352)

(38) V' Reanalysis: Let \( \alpha \) be a phrase \( [v...] \) whose \( \theta \)-grid contains one undischarged internal \( \theta \)-role. Then \( \alpha \) may be reanalyzed as \( [v...] \). (p.348)

The Goal NP is assigned structural accusative Case by the V in a higher position, while the Theme NP is assigned inherent objective Case by the "Reanalyzed" V (\( \checkmark \) in 36b). Inherent objective Case is assigned only to the thematically highest internal argument, that is, to the Theme NP in this analysis. This explains why the Goal NP requires the preposition to in the dative construction.

Despite these elaborations, some problems remain. Larson assumes the thematic hierarchy AGENT > THEME > GOAL > OBLIQUES (manner, location, time,...), but the following data show that the correct thematic order should be AGENT > GOAL > THEME (Aoun and Li (1989), Oba (1993), Kitagawa (1994) and Takano (1996)).

(39) a. *I gave each other's mothers the babies.
    b. *I showed each other's parents the boys.

(40) a. ?I gave each other's babies to the mothers.
    b. ?I showed each other's parents to the boys.

(41) a. *I gave hisi mother every babyi.
    b. *I sent itsi author every booki.

(42) a. ?I gave/returned hisi paper to every studenti.
    b. ?I sent hisi book to every authori. (Takano (1996; p.155))
These facts can be accounted for by assuming that in (40) and (42), even though the basic order of the two NPs is {Theme, Goal}, the Theme NPs are base-generated structurally lower than the Goal NPs, and raised to a higher position later. The Theme NPs may be bound or co-indexed by the Goal NPs due to this Connectivity (Reconstruction) effect in the base-generated position, although it is somewhat marginal. By contrast, (39) and (41) show that the basic order of the two NPs is {Goal, Theme}, which shows no connectivity effect, since the Theme NPs remain in situ. Takano furnishes further evidence supporting the connectivity effect.

(43) a. I introduced the students to each other's friends.  
   b. I put every dress on its owner.  
   c. I borrowed every car from its owner.  
   d. I bought every book for its author's son.  
   e. I entrusted the adults in the room with each other's children.

(44) a. ?I introduced each other's friends to the students.  
   b. ?I put each other's dresses on the girls.  
   c. ?I borrowed each other's pictures from the boys.  
   d. ?I bought each other's pictures for the boys.  
   e. ?I entrusted each other's children to the adults in the room.

The verbs in (a-c) sentences in (43) and (44) do not have double object counterparts, but they show the connectivity effect. Takano claims, "...the effect of movement of the Theme DP is seen regardless of the type of the θ-role assigned to the non-Theme argument (Goal, Source, Benefactive, etc.)."

On the basis of this observation he concludes that;

(45) Movement of the Theme DP is a general property of cases having a DP and a PP as internal arguments.

There are some problems in the analysis based on the connectivity effect, however. The following data show that the connectivity effect is not so
secure in explaining binding phenomena.

\[(46)\] a. Which of each other's friends did they talk to?
   b. Each other's mothers seem to the boys to be smart. (Takano 1996:157)

Takano admits that there is a certain difference of the connectivity effect between movements to A'-position and to A-position, the former has stronger effect than the latter as in (46).\(^{(46)}\)

Next, when passivization occurs in a sentence like 'John sent Mary a letter', the sentence 'Mary was sent a letter' is derived. Oba (1993) points out that although this sentence is fully grammatical, Larson's analysis predicts that it is ungrammatical because a letter is left Caseless, since Larson (1988) assumes that passivization suppresses both structural and inherent Case. Jaeggli (1986) claims that ditransitive verbs in English have only one structural Case and that the passive morpheme absorbs it. In consequence, inherent Case can be assigned to a Theme NP even in a passive sentence.\(^{(17)}\) If this is correct, Larson's assumption that English transitive verbs assign two objective Cases (p.360) is insufficient. The reason is that when a sentence like 'Mary hit John' is passivized, the derived sentence 'John was hit by Mary' would be ungrammatical due to a case conflict, since John has both inherent Case and structural nominative Case.

Although his analysis has some inherent problems that we have discussed above, the 'Shell-structure' has been adopted by many linguists. Larson's analysis has opened up the possibility of explaining Barss and Lasnik's observation structurally by means of VP-shell.
2.3 Aoun & Li's Proposal

Adopting Kayne's (1984) analysis, Aoun and Li propose a base structure in (47) for the double object construction, where a Goal NP is higher than a Theme NP.

\[(47)\]

In (47), the empty verb \(e\) denotes a semantic possession relation between NP\(_1\) and NP\(_2\) like \([NP_1 \text{ HAVE } NP_2]\) and assigns inherent Case to NP\(_2\). The verb \(\text{gave}\) assigns structural Case to NP\(_1\). To account for the scope interpretations of two internal arguments, they propose the Minimal Binding Requirement (48).

(48) Minimal Binding Requirement (MBR)

Variables must be bound by the most local potential antecedent (A'-binder).

They assume that a quantificational phrase is adjoined to a node that immediately dominates it at LF as in (49c), prohibiting adjunctions to other nodes (49a) and (49b).

(49) a. \(*[^r QP_1 [^r QP_2 [^r x1 [vP ... x2...]]]]\)
   b. \(*[^r QP_2 [^r QP_1 [^r x1 [vP ... x2...]]]]\)
   c. \([^r QP_1 [^r x1 [vP QP_2 [vP ... x2...]]]]\)
Drawing on the MBR, they propose the following Scope Principle (50).

(50) The Scope Principle
A Quantifier A has scope over a quantifier B in case A c-commands a member of the chain containing B.

QP₁ in (48c) always c-commands QP₂. Thus, an unambiguous scope interpretation between QP₁ and QP₂ is expected. Therefore, the scope freezing effect in the double object construction is explained by a structure like (49c). In the proposed analysis (47), since NP₂ is adjoined to VP₂ and NP₁ is adjoined to VP₁, NP₁ always asymmetrically c-commands NP₂, the scope freezing effect in the double object construction can be captured by their Minimal Binding Requirement (MBR) and the Scope Principle.

As for the dative construction, while adopting Larson’s (1988) insight, they apply passivization within the sc (small clause). As a result of passivization on the empty verb e, it is not able to assign Case to the Theme NP, and thus the Theme NP is moved to [Spec, sc] (i.e., the Specifier of sc) to receive structural Case from the verb gave. The Goal NP Mary, which is analogous to the subject in sc, is adjoined to VP like a by-phrase in passive.

(51)
In (51), a hierarchical reordering occurs between the two internal arguments. The Goal NP *Mary* c-commands the trace of the Theme NP, and the Theme NP *a book* c-commands the Goal NP in the position NP1. Thus the ambiguous scope relation obtains in the dative construction. Some problems arise in their analysis, however. In fact, Oba (1993) argues against Aoun and Li (1989) in light of the examples (52) and (54).

(52) Who does everyone like?

(52) is ambiguous, and its LF representation is (53).

(53) \[ \text{Who} \]\[ \text{everyone} \]\[ \text{everyone} \]\[ \text{likes} \]\[ \text{X2} \]\[ \text{X2} \]

The quantifier *who* raises above *everyone*, but this is in violation of the MBR, and therefore, (52) should be unambiguous, contrary to expectation. A further problem arises in (54).

(54) a. Someone loves everyone.
b. Who likes everyone?

(54a) is ambiguous, but (54b) is unambiguous. Aoun and Li's analysis predicts both (54a) and (54b) are ambiguous, since they have the following representations at LF.

(55) a. \[ \text{Someone} \]\[ \text{X1} \]\[ \text{everyone} \]\[ \text{everyone} \]\[ \text{loves} \]\[ \text{X2} \]\[ \text{X2} \]
b. \[ \text{Who} \]\[ \text{X1} \]\[ \text{everyone} \]\[ \text{everyone} \]\[ \text{likes} \]\[ \text{X2} \]\[ \text{X2} \]

In (55), *someone/who* c-commands *everyone*, and *everyone* c-commands the trace of *someone/who*. According to Aoun and Li's Scope Principle, both (54a) and (54b) should be ambiguous, contrary to the facts. Oba concludes that the MBR is insufficient, since it cannot deal with these data.
Kitagawa (1994) proposes a 'Yolked VP analysis', where IP is embedded within VP. The example (56a) has the representation in (56b).

(56) a. John sent Mary a letter.

b. Double Object Construction = Active

The empty V (ϕ HAVE) denotes an abstract (rather than concrete) notion of possession, and assigns Case to the direct object a letter. The indirect object Mary receives Case by the matrix V send as exceptional Case marking, since Mary is in [Spec, IP]. Here, there is no reordering of the two internal arguments. Thus the Goal NP always c-commands the Theme NP in the double object construction. The scope freezing phenomenon in the double object construction is due to the absence of the structural reordering between two internal arguments. On the other hand, for the oblique dative construction, the Theme NP is base-generated structurally lower than the Goal NP, and then raises to a higher position. The dative construction like (57a) has the representation in (57b).
(57) a. John sent a letter to Mary.

b. Oblique Dative Construction = Passive

In the oblique dative construction, the empty V is attached to the empty passive morpheme and denotes the passivized empty predicate (φ HAVE- φ EN), which absorbs Case as in usual overt passive sentences, then the direct object raises to [Spec, IP] to receive Case. The indirect object is analyzed as the post-verbal VP-internal subject, and is Case-marked (or checked) by preposition to, just as by marks the subject in a usual passive sentence.

It is worth pointing out here that in all of these analyses, since Case-system is not clarified, the asymmetry in passivizability in the double object construction is left unexplained.
2.4 Minimalist Approaches

Adopting the Split IP Hypothesis (Pollock (1989)) and Case-Checking Theory, Koizumi (1993) claims that English has phonetically null clitics: "G(oal)" and "B(enefactive)", and proposes a VP structure for the double object construction in (58).

(58) VP
   \[
   \begin{array}{c}
   \text{Affected Goal} \\
   \text{(NP1)} \\
   \text{V} \\
   \text{Theme (NP2)} \\
   \text{V} \\
   \text{cl} \\
   \text{G}
   \end{array}
   \]

'cl' stands for the clitic position in V. Koizumi states that G absorbs a Goal from V, and assigns an "affected" Goal-role to [Spec, VP]. According to Koizumi, the double object construction has the structure of (59).

(59) X
   \[
   \begin{array}{c}
   \text{gave} \\
   \text{DP} \\
   \text{Bill} \\
   \text{t} \\
   \text{cl} \\
   \text{DP} \\
   \text{a book} \\
   \text{AGR} \\
   \text{VP}
   \end{array}
   \]

X stands for another V category in his version of Split VP Hypothesis. While the Theme NP raises to [Spec, AGRoP] overtly in the dative construction. Koizumi's phonetically null clitic analysis is most plausible in explaining the restrictions of a Goal NP in wh-movement. I will discuss this issue in chapter II. However, his structure for the dative construction incorrectly predicts that the scope relation between a Goal NP and a
Theme NP should be frozen, since a Goal NP remains in situ throughout the derivation with no hierarchical reordering of the two internal arguments.

Fujita (1996) posits two different structures for both double object and dative constructions; one is an agentive structure, the other is a nonagentive structure. The difference between the two lies in the presence or the absence of an extra VP taking AgroP as its complement. He also assumes AgrpP, where an NP within a PP has its Case checked as in AgroP. One noticeable point is that inherent Case is assigned to a Theme NP. (pp.156-157) This explains an asymmetry in passivizability of Theme and Goal NPs in the double object construction.

Takano (1996) adopts a 'vP' hypothesis and proposes that the double object construction in (60a) has the vP structure in (60b).  
(60) a. John gave Mary a book.  
   b. [vP tsubj [v' gavej-v [vP Mary [v' tj a book ]]]]  

Takano assumes that there are two types of structural Case; a Goal NP has Primary structural accusative Case, which is checked first, and a Theme NP has Secondary structural accusative Case, which is checked next. This analysis is motivated by the fact that both direct and indirect objects are passivizable in a Northern British dialect (citing from Radford (1988)).  
(61) a. John gave the job Mary.  
   b. The job was given Mary. (p.185)  
But, the facts on scope relations and wh-movement are left untouched.
Collins (1997) proposes yet another structure for the double object construction which posits the category of Appl (applicative affix). In the analysis, Appl introduces a Goal NP and checks structural accusative Case on a Theme NP. He also posits Tr (Transitivity), which introduces the subject and checks Case on a Goal NP. An Icelandic sentence like (62a) has the structure in (62b).

(62) a. *Eg lana Mariu bækurnar ekki.
   I lend Maria the books not

   b. Double Object Construction

Again, the facts on passivizability and scope relations are left unexplained. In Collins' analysis, some additional rules or further structural elaborations are necessary to take care of these problems as Bruening (1999a) points out.
2.5 **Summary**

In this chapter, we have reviewed six binding phenomena pointed out by Barss and Lasnik (1986), passivizability, wh-movement and scope relations among arguments of double object verbs. Next, we have surveyed some representative analyses proposed on these issues. None of these analyses are able to explain all of the problems successfully. In addition, each analysis focuses problems on *to*-dative verbs, while those problems on *for*-dative verbs are left untouched. In the next chapter, I will advance an analysis to account for these syntactic phenomena with more generality.
1. Proposal

In the previous chapter, I have reviewed some approaches to the double object construction, and have seen that a number of problems are left unexplained. In this chapter, I will propose a new analysis for the double object and dative constructions. First, I will look at the to-dative verbs, and then at the for-dative verbs.

1.1 Structure and Theoretical Background

In this subsection, I will review some of the basic syntactic notions necessary in analyzing the double object construction. First of all, I argue for the necessity of D-structure, even though D and S-structures are eliminated in the Minimalist Program (Chomsky (1995)). I claim that arguments are assigned thematic roles at D-structure as Kiparsky (1985) and Baker (1988-1997) argue. In this paper, I use the term 'base structure' for a D-structure representation. I adopt the thematic hierarchy Agent > Goal > Theme..., following the proposals by Aoun and Li (1989), Oba (1993), Kitagawa (1994) and Takano (1996), for the reason that it can readily explain the unambiguity in the scope interpretations between the arguments of the double object verbs. Second, I adopt the view that the double object construction and the dative construction have a certain underlying structure in common. (Larson (1988), Aoun and Li (1989) and
However, I claim that these constructions have a single base structure from which they are derived, but not that one construction is derived from the other. In this thesis, I will also advance the claim that a subject is base-generated in V' adjoined position, which is above two internal arguments.

With these syntactic notions in mind, I claim that (63a) and (63b) have base VP structures in (64).

(63) a. John sent a letter to Mary.
    b. John sent Mary a letter.
(64) Base Structure (below VP)

\[
\begin{array}{c}
\text{VP} \\
\text{Spec} \\
V_3 \\
V_2 \\
V_1 \\
\text{PP (NP_1)} \\
\text{John} \\
\text{NP_2} \\
\text{send} \\
a \text{letter} \\
\end{array}
\]

In (64), \(\theta\)-roles are assigned at the base structure, first, V assigns a Theme role to NP_2, then V_1, composed of V and NP_2, assigns a Goal role to NP_1, and finally V_2, composed of V_1 and NP_1, assigns an Agent role to NP_3. Under this view, \([\text{Spec, VP}]\) is a non-\(\theta\)-position and it is empty at the base structure. In addition, I posit the projection \(\mu\) as a landing site of V following Johnson (1991). V always raises to \(\mu\) overtly. As for the Case theory, I follow Takano (1996) and Collins (1997), and assume that the structural Case on either a Theme NP or a Goal NP is checked at \([\text{Spec, VP}]\).
On these assumptions, the full base structure for (63a) is taken to have the following representation:

(65) Base Structure

With these assumptions in mind, I will proceed to show in the next subsection how the double object and dative constructions are derived from the same base structure.

1.2 The Dative Construction and The Double Object Construction

First let us consider the dative construction. In the dative construction, NP₃ has nominative Case, NP₂ has structural accusative Case and NP₁ has inherent Case. In the derivation from the base structure to the surface structure, NP₃ raises to [Spec, TP] to check its nominative Case, and NP₂ raises to [Spec, VP] to check its accusative Case. Both movements are overt. (cf. Koizumi(1993)). Inherent Case is assigned to NP₁ by V, which is realized as the preposition to. As mentioned earlier, V raises to μ overtly (Johnson(1991)). The dative construction like (63a) 'John sent a letter to Mary' has a surface representation like (66).
Given this analysis, the six phenomena shown by Barss and Lasnik (1986) can be explained by the c-commanding relations between Theme and Goal NPs.33 For reasons of space, I will take up only one type of example: Anaphor binding.

(67) Anaphor Binding
   a. I showed Mary herself.
   a'. *I showed herself Mary.
   b. I showed/presented Mary to herself.
   b'. *I showed/presented herself to Mary.

The dative construction (67b) and (67b') have the structures in (68).

(68) b. I showed/presented Mary to herself. b'. *I showed/presented herself to Mary.
In (68b), the Theme NP Mary c-commands the Goal NP herself at S-structure. In (68b'), the Theme NP herself c-commands the Goal NP Mary at S-structure. This fact shows that a Goal NP can be bound by a Theme NP, but a Theme NP cannot be bound by a Goal NP in the dative construction. At first glance, it might not cause any difference analyzing that the Theme NP is base-generated in [Spec, VP], but the following data cannot be explained without assuming that the Theme NP is base-generated in the lower position than the Goal NP.

(69) a. ?I gave each other's babies to the mothers.
   b. ?I showed each other's parents to the boys. (Takano (1996))

(70) I showed a picture of herself to Mary. (Oba (1993))

Although the connectivity effect that Takano (1996) observes is not so secure, for the examples (69-70) to be grammatical, it is at least necessary to analyze that the Theme NP is base-generated lower than the Goal NP.

The next derivation concerns the double object construction, where I claim that the θ-role Recipient is assigned to NP₁. The example like (63b)'John sent Mary a letter' has a representation as in (71).

Base Structure (71) Double Object Construction

```
  TP
     / Spec
    /     T
   /      / Spec
  μ      e     V'₃
        /      NP₂
      /       PP (NP₁)
     /          John
    μ          V'₁
   /           NP₂ (to) Mary
  μ           V
   /           send a letter
```

```
  TP
     / Spec
    /     T
   /      / Spec
  μ      e     V'₃
        /      NP₂
      /       PP (NP₁)
     /          NP₁
    μ          V'₁
   /           NP₂ (to) Mary
  μ           V
   /           send a letter
```
In the derivation, the covert PΦ incorporates to \( V \).\(^{35}\) NP\(_3\) has nominative Case as in the dative construction, NP\(_1\) has structural accusative Case, and NP\(_2\) has inherent Case. In the derivation from the base structure to the surface structure, the subject raises to [Spec, TP] to check nominative Case, the Goal NP raises to [Spec, VP] to check accusative Case. Inherent Case is assigned to the Theme NP by the verb. (Larson (1988) and Fujita (1996))\(^{36}\) In the double object construction, there is no hierarchical reordering between NP\(_1\) and NP\(_2\) as shown in (71), and an indirect object always c-commands a direct object. Given this analysis, (67a) and (67a') have the structures in (72).

\[(72)\]
a. I showed Mary herself.  
a'. *I showed herself Mary.

In (72a), the Goal NP Mary c-commands the Theme NP herself on the surface structure. Thus, herself can be bound. On the other hand in (72a'), the Goal NP herself c-commands the Theme NP Mary, and thus herself cannot be bound by Mary.

Other asymmetrical phenomena can be explained in the same manner. In this analysis, there is no need to appeal to linear precedence to
account for them.

(73)  **Quantifier Binding**
  a. I gave every workeri's mother hisi paycheck.
  a'. *I gave hisi mother every workeri's paycheck.
  b. I gave/sent every checki to itsi owner.
  b'. ??I gave/sent hisi check to every workeri.

(74)  **Weak Crossover**
  a. Which mani did you send hisi check?
  a'. *Whosei pay did you send hisi mother?
  b. Which checki did you send to itsi owner?
  b'. *Which workeri did you send hisi check to?

(75)  **Superiority**
  a. Who did you give which check?
  a'. *Which paycheck did you give who?
  b. Which check did you send to who?
  b'. *Whom did you send which check to?
  (* To who did you send which check?)

(76)  **Each ... the other** Construction
  a. I showed each man the other's socks.
  a'. *I showed the other's friend each man.
  b. I sent each boy to the other's parents.
  b'. *I sent the other's check to each boy.

(77)  **Negative Polarity**
  a. I showed no one anything.
  a'. *I showed anyone nothing.
  b. I sent no presents to any of the children.
  b'. *I sent any of the packages to none of the children.

In the (a) and (b) examples in (73-77), the NP immediately after the verb c-commands the second NP, on the other hand, in the (a') and (b') examples, the second NP does not c-command the first NP. Thus, the difference in grammaticality in each pair is explained.

1.3  **Passivizability**

Recall the following dialectal variations in the passivizability of two internal arguments observed by Czepluch (1982) here;
Woolford (1993) claims that only objects with structural Case can passivize. (see also Jaeggli (1986)) In other words, objects with inherent Case cannot passivize. If so, the analysis proposed in the previous subsection which claims that inherent Case is assigned to a Theme NP in the double object construction predicts that (78a), (78b) and (79a) are acceptable, since in these examples the subjects receive structural Case before passivization is applied. Then, why do the dialects indicate such variations in acceptability?

I will make some concrete proposals below.

Let us consider the dialect C first. In the dialect C, it is reasonable to assume that a ditransitive verb can assign two structural accusative Cases, since both Theme and Goal NPs passivize easily. There is a complete symmetry in passivizability between two internal arguments both in to-dative and for-dative verbs. On the other hand, it is also reasonable to assume that a ditransitive verb in other dialects does not have two structural accusative Cases, since they do not exhibit a symmetry. Thus, the variation in acceptability in (78c), (79b) and (79c) may be caused by the circumstances of inherent Case-assignment and the sensitivity to the case conflict.

Let us consider the acceptability of (78c) shown by the dialects A and B. Under my proposal, the ungrammaticality of (78c) as in the dialect D is
explained by a case conflict. In (78c), the Theme NP is already assigned inherent Case by the verb, and thus it cannot raise to [Spec, TP] to check nominative Case. In addition, the Goal NP is left Caseless, since the passive morpheme prevents the verb from checking structural Case. (see Jaeggli (1986) and Baker et al. (1989)) This means that in the dialects of A and B, the Theme NP checks structural accusative Case, and there must be a specific Case-assignment system for the Goal NP. There is one possible answer which is suitable for this condition. Before proceeding, let us recall the examples from the Northern British English dialect in (80).

(80) a. John gave the job Mary.
   b. The job was given Mary.

This dialect accepts both (80a) and (80b) which seems to suggest that inherent Case is assigned to the Goal NP without the preposition to in (80a). This implies that (80b) is not derived from the double object construction but from a P-less dative construction like 'John gave the job (to) Mary.' In other dialects, however, this kind of realization of inherent Case is not allowed, so (80a) is not acceptable.

The difference in acceptability may be caused by the requirement of adjacency between V and a Goal NP, which suggests that inherent Case that is assigned to objects may not be a pure lexical Case, since the assignment of a lexical Case does not require adjacency. Obviously as in (81), adjacency is required in the double object construction. (Amano (1998) citing Stowell (1981))

(81) a. *Wayne sent Robert suddenly a telegram.
   b. *Debby gave Anne secretly a record.
In (81a) and (81b), intervening adverbs (bold-faced) are regarded as causing a violation of the adjacency condition.

Then let us consider the adjacency condition between V and an object NP pertaining to inherent Case-assignment in light of historical evidence. Visser (1970-73) analyzes many examples of the double object construction in Old English (450A.D.-1150A.D.) and Middle English (1150A.D.-1500A.D.). The core of his observation is; in the double object construction in Old English (OE), indirect objects appear in the dative morphologically, while direct objects are in the accusative. Indirect objects have lost their inflectional form by the end of OE, and then fixed word order overtakes the discriminative task of the differences in case forms. Before 1300A.D. the number of to-dative constructions was very small. By the 14th and 15th centuries, the number increased rapidly, partly because of an influence from the French preposition à, which is equivalent to to in English. Gelderen (1996) claims that a ditransitive verb in OE has inherent Case, which is assigned under government by V, and that in Middle English (in the early 13th century), inherent Case switches to structural Case due to the loss of morphological case marking. These two observations show that ditransitive verbs assigned two inherent Cases in the double object construction in Old English, even after the dative and accusative Case forms were neutralized.

This historical evidence seems to show that in Modern English ditransitive verbs have not lost the ability to assign/check two Cases completely, and have developed intermediate Case ('intermediate': in the sense that it is not fully structural nor purely lexical). In the dative
construction, the intermediate Case is realized as the preposition to, while in the double object construction, it is realized as a null preposition.

In light of this observation, I conclude that in Modern English, a ditransitive verb checks only one structural Case (accusative Case), but has an extra intermediate Case. If the intermediate Case is inherent Case, it may be licensed either by the insertion of the preposition to, or by the direct assignment to a Theme NP by the verb. This difference is a reflection of the fact that a Theme NP requires no preposition and a Goal NP requires the preposition to. This is because a Goal NP is never adjacent to V throughout the derivation in the dative construction.

Let us recall here that the speakers in the dialects of A and B in (78-79) do not accept 'John gave the job Mary' (80a), but accept 'The job was given Mary' (80b). In my analysis, the Goal NP is never adjacent to the verb throughout the derivation, and thus, the adjacency condition must be explained by a structural difference. (80a) and (80b) have the structures (82a) and (82b), respectively.

(82) a. John gave the job Mary.        b. The job was given Mary.

\[
\begin{array}{ll}
\text{(82a)} & \text{TP} \\
\text{Spec} & \text{TP} \\
\text{John} & \text{Spec} \\
\text{T} & \text{T'} \\
\mu & \mu \\
\text{VP} & \text{VP} \\
\text{Spec} & \text{Spec} \\
\text{the job} & \text{the job} \\
\text{T} & \text{T'} \\
\text{VP} & \text{VP} \\
\text{V's} & \text{V's} \\
\text{NP3} & \text{NP3} \\
\text{V1} & \text{V1} \\
\text{PP} & \text{PP} \\
\text{P} & \text{P} \\
\text{NP2} & \text{NP2} \\
\text{V} & \text{V} \\
\text{tj} & \text{tj} \\
\text{ti} & \text{ti} \\
\phi & \phi \\
\text{Mary} & \text{Mary}
\end{array}
\]
In (82a), the Theme NP lies between μ and the Goal NP, while in (82b), there is no intervening lexical item. This differentiates between (80a) and (80b). Thanks to this adjacency, the assignment of intermediate Case to a Goal NP is allowed without the preposition to. It seems that the Northern British English dialect in (80) does not care the adjacency condition. The examples in (81) can be explained in the same way. In (81), each adverb intervenes between the verb and the Theme NP, and thus intermediate Case cannot be assigned to the Theme NP. I summarize the analysis of Case-assignment in a ditransitive verb in Table 3.

<table>
<thead>
<tr>
<th></th>
<th>Double Object Construction</th>
<th>Dative Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme</td>
<td>IC: null preposition</td>
<td>Structural Accusative Case</td>
</tr>
<tr>
<td>Goal</td>
<td>Structural Accusative Case</td>
<td>IC: preposition to</td>
</tr>
</tbody>
</table>

It must be noted that the term, 'inherent Case' is not used in the same sense as that in Jaeggli (1986) and Larson (1988). Jaeggli argues that only a Theme argument of a double object verb can be assigned inherent Case, and similarly, Larson analyzes that the thematically highest argument (Theme in his analysis) can be assigned inherent Case. My analysis differs in that 'inherent Case' or 'intermediate Case' is assigned either to a Theme NP or to a Goal NP.

I will discuss the example (79b) and (79c) later, together with an analysis of for-dative verbs.
1.4 Wh-movement

Next, let us consider wh-movement. Recall the data that Czepluch (1982) and Amano (1998) show.

(83) a. John gave Mary the book.
   b. *Who did John give the book?
   c. What did John give Mary?
   d. John gave who the book? (Czepluch (1982))

(84) a. Who (m) did John tell that Mary was staying?
   a'. *Who (m) did John tell the story?

(85) a. Who (m) did you teach?
   a'. *Who (m) did you teach English? (Amano (1998))

A Goal NP can be wh-moved when a Theme NP is a clausal element or absent as in (84a) and (85a). When the indirect object remains in situ, the sentence is acceptable as an echo question as in (83d). A Goal wh-phrase obeys superiority as noted by Barss and Lasnik (1986). The possibility of wh-movement of a Goal NP is determined depending upon the presence or absence of a Theme NP. This fact implies that when a Theme NP does not require inherent Case, wh-movement of a Goal NP is possible. In this case, the Goal is base-generated as an NP instead of a PP, which means that Preposition Incorporation does not occur. This analysis suggests that a Case-system is responsible for the extractability of a Goal NP.

The most plausible analysis for treating this problem is presented by Koizumi (1993), who claims that a null clitic cannot allow a Goal NP to be moved except for Case requirement. His analysis explains restrictions on movement of a Goal NP. There arise some questions, however, since in the phonetically null clitic analysis, a Goal NP is licensed by a clitic and a Theme NP checks structural accusative Case. The following are some of the
questions.

1) When a Goal NP is heavy, is it possible to regard it as a clitic?
2) How can a Goal wh-phrase be moved when Superiority requires it?
3) Is it possible to explain a difference in passivizability between
   to-dative verbs and for-dative verbs?

To answer these questions, it is necessary to consider the fact that only
when a Theme NP requires inherent Case is a Goal NP restricted in its
movement. This suggests that when Preposition Incorporation occurs, a
Goal NP cannot be wh-moved in my analysis. Thus it is reasonable to
conclude that a more promising analysis is one in which holds that
Preposition Incorporation is responsible for wh-movement. The hypothesis
something like (86) should be considered.

(86) PI Requirement Hypothesis
    a. When PI occurs, the incorporated P must govern the Goal NP in
       [Spec, VP].
    b. Case filter and Superiority surpass this requirement.39

I illustrate this in (87).

(87)

In (87), the incorporated P(Pφ) c-commands the Goal NP in [Spec, VP].
If the Goal NP is moved to other position which is higher than μP, Pφ
cannot c-command it, thus causing ungrammaticality. Since this hypothesis
is based on the presence of PI, it is predicted that in the dialect that has
two structural Cases, the movement of a Goal NP may not be restricted. Actually, Hudson (1992) notices that there is a dialect which allows wh-movement of a Goal NP. Hudson states:

"... for example, when I collected judgements on (88) at a meeting of the Linguistics Association of Great Britain, before presenting an earlier version of the present paper, thirteen native speakers rejected it and only one person was sure it was fine. (I am among the rejecters.)" (p.258)

(88) %[Which authors]_1 did they give # [a prize]_2?

Unfortunately, there is no description available concerning whether the linguist who accepts (88) also accepts a passive sentence such as, 'The book was bought Mary' (79c). Hudson accepts the passive sentence, 'Mary was bought the book', which implies that his dialect is supposed to be similar to the dialect D in (78-79). This indicates that the dialect of the linguist who accepts (88) is probably similar to the dialect C, which is analyzed as having two structural Cases.

If this analysis is on the right track, other restrictions concerning A'-movement of a Goal NP can be explained in the same manner as wh-movement, since none of heavy NP shift, tough movement, clefting, topicalization and relativization require Case filter or superiority. All of these movements are blocked by the PI Requirement.
2. Scope Relations

In this section, I will advance an analysis on the peculiar scope relations among a subject, a Goal NP and a Theme NP in the dative and double object constructions shown by Bruening (1999a). I will show that the proposed analysis in the previous section can also explain most of the scope relations by way of c-command. And I will show the results of my own research on the scope relations between a subject and a Goal or Beneficiary NP, and between a subject and a Theme NP.

2.1 Scope Relations among Subject, Goal and Theme

In this subsection, I present an analysis for a scope interaction among a subject, a Theme NP and a Goal NP in the dative and double object constructions. I adopt the views shown by Larson (1990), Aoun and Li (1989), Kitagawa (1994) and Bruening (1999a), since most works agree that there is scope ambiguity in the dative construction, while no such ambiguity is found in the double object construction. My analysis will be in the spirit of Aoun and Li's Scope Principle and Kitagawa's analysis in explaining scope relations. I will show that the structural relation of c-command between arguments plays an important role in determining relative scope interpretations. In the proposed analysis, a Goal NP always c-commands a Theme NP and c-commands a trace of the subject at [Spec, VP]. Two acceptable scope relations are illustrated in (89).
Acceptable Scope Relations among three Arguments in the Double Object Construction (To-dative verbs)

This predicts that in the double object construction, acceptable scope relations are; Subject>O1>O2 and O1>Subject>O2, which is the same prediction as that of Bruening's (1999a) proposal. Other logical scope relations are not acceptable, since a Theme NP cannot take wide scope over either a Goal NP or a subject. In (89), R1 (solid lines) indicates that the subject takes scope over the Goal NP, then the Goal NP takes scope over the Theme NP (Subject>O1>O2). R2 (dotted lines) indicates that the Goal NP takes scope over the subject, then the subject takes scope over the Theme NP (O1>Subject>O2). The scope interaction between two internal arguments, Theme and Goal, are also explained in the same way. The Goal NP always c-commands the Theme NP, and thus the scope is frozen.

Next, I will consider scope interactions between three arguments in the dative construction. In my analysis, since the Theme NP c-commands both of the trace left by the movement of the subject and the Goal NP, the Theme NP takes wide scope over them, while the Goal NP does not take scope over the subject.
This predicts that acceptable scope relations are: Subject>Ol>O2, Subject>O2>Ol, O1>O2>Subject>O1. Other scope relations (O1>O2>Subject, O2>O1>Subject, O1>Subject>O2) are not acceptable, since O1 (Goal NP) cannot take scope over the subject. In (90), O1 (Goal NP) cannot c-command NP3 as the arrow indicates, and thus the interpretation in which the Goal NP takes scope over the subject is not acceptable.

Problematic is the scope interpretation O1>Subject>O2, however. Bruening's (1999a) analysis predicts that this relation is possible, since the Theme NP (O1) can be moved to [Spec, vP], which is higher than the subject, and thus the Theme NP takes wide scope over the subject. In my analysis, only three scope relations are acceptable. If Bruening's prediction is correct, then a certain syntactic operation like extraposition of the Goal PP may occur as shown in (91), which enables the Goal NP to c-command the trace of the subject.
Before discussing the details of this issue, I will show the result of my own research on scope relations between the subject and the Goal NP or the Beneficiary NP, and between the subject and the Theme NP in both the double object and dative constructions. (see Appendix IV) The aims of this research are three-fold. The first is to observe whether a difference occurs in the scope interpretations between the double object and dative constructions. The second is to observe whether there is a different scope interpretation between to-dative and for-dative verbs. The third is to clarify whether some quantifiers have an effect on scope interpretation as Ioup (1975) argues.

My informants consist of one British, two American, and two Canadian speakers. All informants are asked to judge the scope relations between the Goal NP and the Theme NP in both the dative and double object constructions, before they are asked to judge the scope relations between the subject and the Goal/Beneficiary NP, or the Theme NP. The informants all agree that there is an unambiguous scope relation between the Goal NP and the Theme NP in the double object construction, while they find an ambiguous scope relation in the dative construction.
Furthermore, a close inspection of the results show that when the subject includes *One/Some* and one of the objects includes *every* as in (92), the scope relations are frozen (*One/Some* > *every*, *every* > *One/Some*) (80%). I call this phenomenon *One/Some-every effect* (OSEE). This seems to be the same effect that Kitagawa (1994) observes. (see note 8)

(92) a. One teacher assigned every student that problem.  
   b. One teacher assigned that problem to every student.  
   c. Some girl made that boy every cake.  
   d. Some girl made every cake for that boy. (sentences used in my research)

On the other hand, when OSEE factors are eliminated, 93% of the sentences are judged ambiguous. From these results, it is reasonable to say that some quantifiers have an effect on scope interpretation. A noticeable difference in the scope interpretation of the subject and the two internal arguments is not observed between *to*-dative and *for*-dative verbs. Another result is that the scope relation between the subject and the Beneficiary NP in *for*-dative verbs in sentences like (93) tends to be ambiguous even under OSEE (65%).

(93) a. One girl made every boy that cake.  
   b. Some girl made that cake for every boy. (Ibid.)

This result implies that *for*-dative verbs have a different structure from *to*-dative verbs and indicates that the Beneficiary PP must be in a higher position than the base-generated position of the subject.

The paradigms of the scope relations among three arguments (Subject, Goal and Theme) and those between two arguments (Goal and Theme) are summarized below. Table 4 shows the logical orders of quantifiers and the predictions of each acceptability.
Table 4  Logical Orders of Quantifiers and Acceptability

<table>
<thead>
<tr>
<th></th>
<th>Double Object</th>
<th>Dative</th>
</tr>
</thead>
<tbody>
<tr>
<td>3NPs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>$S &gt; O_1 &gt; O_2$</td>
<td>$S &gt; O_1 &gt; O_2$</td>
</tr>
<tr>
<td>2</td>
<td>$S &gt; O_2 &gt; O_1$</td>
<td>$S &gt; O_2 &gt; O_1$</td>
</tr>
<tr>
<td>3</td>
<td>$O_1 &gt; S &gt; O_2$</td>
<td>$O_1 &gt; S &gt; O_2$</td>
</tr>
<tr>
<td>4</td>
<td>$O_1 &gt; O_2 &gt; S$</td>
<td>$O_1 &gt; O_2 &gt; S$</td>
</tr>
<tr>
<td>5</td>
<td>$O_2 &gt; S &gt; O_1$</td>
<td>$O_2 &gt; S &gt; O_1$</td>
</tr>
<tr>
<td>6</td>
<td>$O_2 &gt; O_1 &gt; S$</td>
<td>$O_2 &gt; O_1 &gt; S$</td>
</tr>
<tr>
<td>2NPs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>$S &gt; O_1$</td>
<td>$S &gt; O_1$</td>
</tr>
<tr>
<td>2</td>
<td>$S &gt; O_2$</td>
<td>$S &gt; O_2$</td>
</tr>
<tr>
<td>3</td>
<td>$O_1 &gt; S$</td>
<td>$O_1 &gt; S$</td>
</tr>
<tr>
<td>4</td>
<td>$O_1 &gt; O_2$</td>
<td>$O_1 &gt; O_2$</td>
</tr>
<tr>
<td>5</td>
<td>$O_2 &gt; S$</td>
<td>$O_2 &gt; S$</td>
</tr>
<tr>
<td>6</td>
<td>$O_2 &gt; O_1$</td>
<td>$O_2 &gt; O_1$</td>
</tr>
</tbody>
</table>

('✓' stands for acceptable, '*' stands for unacceptable)

There are 48 logical scope relations, and the scope relations between two arguments are divided into two in terms of OSEE, so there are 64 logical combinations on the scope relations. As I have shown in (89) and (90), 57 out of 64 logical combinations are explained by c-commanding relations of arguments, 7 scope relations are not yet explained in my analysis. I indicate these 7 relations with the bold lines in Table 4. These relations are as follows.
1) The Goal NP does not take scope over the subject in the double object construction. (*O1>S) (to-dative) (under OSEE)

2) The Theme NP does not take scope over the subject in the dative construction. (*O2>S) (to-dative) (under OSEE)

3) The Theme NP does not take scope over the subject in the dative construction. (*O2>S) (for-dative) (under OSEE)

4) The Theme NP takes scope over the subject in the double object construction. (O2>S) (to-dative) (under non-OSEE)

5) The Goal NP takes scope over the subject in the dative construction. (O1>S) (to-dative) (under non-OSEE)

6) The Theme NP takes scope over the subject in the double object construction. (O2>S) (for-dative) (under non-OSEE)

7) The Goal NP takes scope over the subject and the Theme NP in the dative construction. (O1>Subject>O2)

7) is the case that Bruening's (1999a) analysis predicts, which includes the same relation that the Goal NP takes wide scope over the subject as in 5), so I take them to be the same phenomenon. The example sentences used in my research corresponding to 1) -6) are in (94).

(94) a. One teacher assigned every student that problem. --- 1)
    b. One teacher assigned every problem to that student. --- 2)
    c. One girl made every cake for that boy. --- 3)
    (*every > one)
    d. Two teachers assigned students three problems. --- 4)
    e. Two teachers assigned problems to three students. --- 5)
    f. Two girls made boys three cakes. --- 6)
    (three > two)

The result implies that all the examples in (94a-c) have OSEE, and the quantifier every cannot take scope over one, which should be possible in my analysis. One possible analysis for this fact is that the subject has a very weak focus because of the lexical effect of one/some as Ioup (1975) notices, and the possible scopal reading may be restricted to the surface order. And
in (94d-f), all the examples do not have OSEE, and the quantifier *three* takes scope over *two*, which should not be possible in my analysis. This fact may be explained by applying extraposition of a Theme NP or a Goal PP to a higher position than NP3 (the trace of the subject). In this analysis, since the extraposed NP or PP c-commands the trace of the subject, the ambiguous interpretation is accounted for. I illustrate the extraposition of a Theme NP or a Goal PP with *to*-dative verbs in (95).

(95) Extraposition of Theme NP or Goal PP (*To*-dative verbs)

This extraposition may be motivated by stressing or focusing as noted in Kitagawa (1994). His data show that when one of the two NPs is focused, then the other NP can take wide scope over the focused NP as in (96).

(96) a. Everyone loves someone. (ambiguous)
b. Someone loves everyone. (∃ ∀ / ?? ∀ > ∃)
c. SOMEONE loves everyone. (ambiguous)
d. Someone LOVES everyone. (∃ ∀ / ∗ ∀ > ∃)

In (96c), the focused NP *SOMEONE* enables *everyone* to take wide scope over it, which stands in contrast to an unfocused version in (96b). When the verb is focused as in (96d), *everyone* does not take wide scope over *someone*. This seems to indicate that when one NP is focused, the other NP
can be extraposed, and that when the verb is focused, the extraposition of an object NP within VP is blocked.

Similarly, when the subject is focused, an object NP or PP can take wide scope over it. It is worth noting that a Theme NP or a Goal PP in the dative construction may be extraposed, but not a Goal NP in the double object construction, as the examples (94d-f) show. The difference may be derived from the fact that a Goal NP does not undergo heavy NP shift. The present analysis can also explain cases like (97). (Aoun and Li (1989))

(97) a. The committee gave some student every book in the library.
    b. Mary showed some bureaucrat every document she had.
    c. John asked two students every question. (p.166) (emphasis added)

As Aoun and Li note, in (97b), which has an ambiguous reading, the Theme NP is heavy (bold-faced). The ambiguity is triggered by the extraposition of the Theme NP, i.e. heavy NP shift.

Further, Bruening (1999b) points out that when a double object sentence is passivized, the scope between the subject and the Theme NP becomes ambiguous as in (98).

(98) a. Ozzy gave a (#different) girl every telescope. (*every > a)
    b. A (different) girl was given every telescope. (every > a)

This phenomenon is explained in a similar way, that is, when the Goal NP raises to the subject position, this NP becomes hierarchically higher than the indirect object, thus predicting the ambiguity of (98b). (see note 8)

I conclude from this that extraposition provides a key to solving the puzzles, since extraposition is never applied to a Goal NP. A Goal NP cannot undergo A'-movement, so there is no reordering of arguments in the double object construction. This analysis accounts for scope relations with
rather high plausibility. This analysis has opened up the possibility to account for the scope relations between arguments by way of the structural notion of c-command.

3. *For*-dative Verbs

On the basis of the scopal data on *for*-dative verbs in my research, I propose an analysis for *for*-dative verbs in this section. At this point, note that a *for*-phrase, unlike a *to*-phrase, is not subcategorized by the verb as Czepluch (1982) shows.

(99) a. John bought a book for Mary, and Bill did so for Sue.
    b. *John gave a book to Mary, and Bill did so to Sue.

Czepluch claims that a *for*-phrase is adjoined to *V*, and thus *did so* in the second conjunct in (99) must be substituting for *µP*, which entails that a *for*-phrase must be adjoined to *µP*. Further, Hawkins (1981) shows that in (100) only the *to*-phrase can undergo Dative Alternation.

(100) a. Jim sent some chocolates to Margaret for Harry.
    b. Jim sent Margaret some chocolates for Harry.
    c. *Jim sent Harry some chocolates to Margaret.

These data indicate that *to*-phrases and *for*-phrases are base-generated in the different positions. In light of this fact, I propose the base structure for *for*-dative verbs has a representation as in (101).
For-Dative Verbs Base Structure (irrelevant details omitted)

There are two major differences in the derivation of the double object construction with *for*-dative verbs. First, a Beneficiary PP is promoted to the argument only when a Goal NP is absent as (100) shows.\(^{41}\) Second, even after PI occurs, the trace of the P\( \phi \) functions as a covert oblique case-marker. This analysis is supported by Visser's (1970) observation that while the indirect object of advantage (i.e., Beneficiary) is usually a pronoun with the oblique Case, nouns are rare. (p.628 § 692) This observation implies that a Beneficiary NP requires oblique Case instead of dative Case. This analysis also gives a clue to explaining the lower acceptability of passives with *for*-dative verbs than *to*-dative verbs. Other derivations are the same as those involving *to*-dative verbs. I focus on the movement of a Beneficiary NP here. In (102), the position for the Goal NP is empty, so the Beneficiary NP may raise to [Spec, VP] to check structural Case, and at the same time, it is assigned oblique Case by the trace of P\( \phi \) covertly. I claim that no case conflict occurs here, since oblique Case in OE is now neutralized to accusative Case in Modern English.
(102) For-Dative Verbs Double Object Construction

\[
(\text{TP}) \quad \begin{array}{c}
\text{Spec} \\
\text{T}
\end{array} \begin{array}{c}
\text{VP} \\
\mu
\end{array} \begin{array}{c}
\text{Spec} \\
\text{Beneficiary}
\end{array} \begin{array}{c}
V'3 \\
\text{NP3 (Subject)}
\end{array} \begin{array}{c}
V'2 \\
\text{PP (tj tj)} \{ \text{Oblique Case} \}
\end{array} \begin{array}{c}
V'1 \\
\text{PP (Goal \(\phi\)}
\end{array} \begin{array}{c}
\text{NP (Theme)}
\end{array}
\]

In (102), there is no reordering of two internal arguments, the Beneficiary NP always c-commands the Theme NP, and thus an unambiguous scope interpretation between Beneficiary and Theme NPs is explained.

Let us turn now to the derivation of the dative construction. In (103), the Theme NP raises to [Spec, VP] to check its structural Case.

(103) For-Dative Verbs Dative Construction

\[
(\text{TP}) \quad \begin{array}{c}
\text{Spec} \\
\text{T}
\end{array} \begin{array}{c}
\text{VP} \\
\mu
\end{array} \begin{array}{c}
\text{Spec} \\
\text{Beneficiary}
\end{array} \begin{array}{c}
V'3 \\
\text{NP3 (Subject)}
\end{array} \begin{array}{c}
V'2 \\
\text{tj}
\end{array} \begin{array}{c}
\text{PP (Goal)}
\end{array}
\]

The Beneficiary PP is extraposed to \( \mu P \). One specific question is whether the order of extraposition and \( \theta \)-role assignment to the Beneficiary PP may cause a difference. The answer is yes. If \( \theta \)-role assignment is accomplished before extraposition, the assigned \( \theta \)-role may be Beneficiary. If it is accomplished after extraposition, it may be 'Deputive' (deputor who benefits from not having to undertake the act himself/herself) (c.f. Allerton (1978)). The difference of order may cause a difference in the interpretation of a \( \text{for} \)-phrase. I claim that inherent Case is not assigned to a Beneficiary PP, since it is not subcategorized by the verb. In (103), the Theme NP which is c-commanded by the Beneficiary PP c-commands the trace of the Beneficiary PP at the surface structure. This explains the scope ambiguity between the Beneficiary PP and the Theme NP.42)

Given this analysis, let us turn now back to the example (79b) and (79c), repeated here as (104).

(104) a. Mary was bought the book. (79b)  
    b. The book was bought Mary. (79c)

Look at (104a) first, together with some additional data below.

(105) a. *A new wardrobe was bought Mary by John.  
    b. Mary was bought a new wardrobe by John.  
    c. Mary was bought a book by John.  
    (Jackendoff and Culicover (1971))

Jackendoff and Culicover, who are the speakers of the dialect B, state that (105b) seems to vary in acceptability, and that there seem to be some factors of length involved, (105c) seems less acceptable than (105b). Hudson (1992) and Woolford (1993) also state that passive sentences like (105b) are quite acceptable. On the other hand, Goldberg (1992) judges (105b) as
unacceptable. In my analysis, the Beneficiary NP has two Cases, structural Case and oblique Case, which causes a case conflict, and thus, (104a) is ungrammatical. It seems reasonable to conclude that the dialects of A and B are sensitive to this case conflict, but the dialect D is not.

Finally, let us turn to the example (79c (104b)). Although the dialects of A and B allow (78c), they do not allow (104b). This implies that there must be another factor to make (104b) unacceptable. In these dialects, I claim, inherent Case is not assigned to a Beneficiary PP by the verb, since it is not subcategorized by the verb. (104b) must be derived from the double object construction, 'John bought Mary the book.' Thus, the Theme NP cannot raise to the subject position because of a case conflict and the Goal NP is left Caseless, there is no way to make (104b) acceptable using a P-less dative construction.
4. Conclusion

In this thesis, I have proposed a new analysis on the double object and dative constructions, and claim that structural relations of arguments account for scope relations among a subject and two internal arguments of double object verbs. This analysis also explains the phenomena shown by Barss and Lasnik (1986). I have formulated two hypotheses to account for the asymmetrical acceptability in passivizability and constraint on wh-movement of a Goal NP. One is that an intermediate Case-assigning system to either a Goal NP or a Theme NP, which explains the requirement for adjacency between the verb and the object NP. I have argued that a covert preposition assigns oblique Case to a Beneficiary NP in for-dative verbs, which takes care of the varying acceptabilities of passive sentences like, 'Mary was bought a book.' The other is that PI Requirement restricts the movement of a Goal NP in the double object construction. This analysis can account for the anomaly of the movement of a Goal NP in wh-movement, heavy NP shift, tough movement, clefting, topicalization and relativization. In addition, I have shown that some lexical items have a certain effect to change scope relations and that the double object structure for for-dative verbs is different from that of to-dative verbs.
Notes

1) In this thesis, I adopt the notion of c-command defined by Reinhart (1981:612).
   Node A c-commands node B iff the branching node most immediately
   dominating A also dominates B.

2) I cite Aoun and Li's (1989) data because they are presented concisely including the examples of
dative construction. The original data in Barss and Lasnik (1986) are as follows.

   (i) The Binding Principles
       a. I showed John/him himself (in the mirror).
       b. *I showed himself John (in the mirror).

   (ii) QNP-Pronoun Relations
       a. I denied each worker his paycheck.
       b. I showed every friend of mine his photograph.
       a'. *I denied its owner each paycheck.
       b'. *I showed its trainer every lion.

   (iii) Wh Movement and Weak Crossover
       a. Which worker did you deny his paycheck?
       b. Who did you show his reflection in the mirror?
       a'. *Which paycheck did you deny its owner?
       b'. *Which lion did you show its trainer?

   (iv) Superiority
       a. Who did you give a book? (somewhat awkward)
       b. Which book did you give John?
       a'. Who did you give which book?
       b'. *Which book did you give who? (grammatical only on the echoic reading)

   (v) The each ... the other Construction
       a. I gave each man the other's watch.
       b'. *I gave the other's trainer each lion.

   (vi) Polarity Any
       a. I gave no one anything.
       a'. *I gave anyone nothing.

3) The Crossover principle, proposed by Postal (1971), states that a pronoun cannot be moved
   across a phrase which has the same reference.

   (i) I do admire myself.

   In (i), the reflexive (myself) has the same referent as I, hence, myself can not move over I; *Myself I
do admire. There are two types of crossover effects; one is a strong crossover effect, the other is a
weak crossover effect.

4) Barss and Lasnik (1986) define Linear precedence as follows.

   (i) Y is in the domain of X iff X c-commands Y and X precedes Y. (p.352)
(5) There is another approach to this issue, which is based on the thematic hierarchy, taken by Jackendoff (1972) and Woolford (1993), for instance.

(6) Czepluch (1982) explains the constraints on wh-movement and passivization of a Goal NP as follows.

(i) a. Mary was given the book.
   b. Mary INFL be (V given the book obj (XP t))

(ii) a. The book was given Mary.
   b. the book INFL be (given (e Mary obj) (NP t))

He argues that its acceptability depends on whether the neutralization of the empty P by the passive morpheme is possible or not. In dialects that accept (iia), the empty P is neutralized.

(7) Basically the judgements reported here are based on Larson's (Aoun and Li 1989), Kitagawa (1994) Bruening (1999), but others argue against these judgements (Baker 1997 and Amano 1998). Baker (1997) argues that dative alternation arises from a syntactic movement, while locative alternation like (29) does not. Baker states;

'However, no such scope-freezing effect is found in the locative alternation. Both versions of the locative alternation are scopally ambiguous; in particular, a wide scope reading of the oblique argument is possible, at least for some English speakers.' (p.95)

Baker claims that the ambiguous interpretation that locative alternation includes comes from the 'total affectedness' (Tenny 1987)), and points out that scope ambiguity is confused with this effect. Amano (1998) assumes that there may be scope ambiguity even in the double object construction following Aoun and Li's (1989) data (see (28)). He claims that a ternary branching structure and LF raising can explain the scope ambiguity. (pp.257-264)

(8) Kitagawa (1994) notes some effects that affect scope interpretations (i-iv);

(i) Lexical entailment
   a. Everyone loves someone. (ambiguous)
   b. Every student solved two problems. (ambiguous)
   c. Someone loves everyone. (E > V / ?? V > E)
   d. Two students in my class solved every problem. (TWO > V / ?? V > TWO)

In (ia) and (ic), the hierarchical order of someone and everyone are reversed. This indicates that some lexical items affect scope interpretations. Next, Kitagawa notices a focusing effect;

(ii) Focus
   a. SOMEONE loves everyone. (ambiguous)
   b. TWO students in my class solved every problem. (ambiguous)
c. Someone LOVES everyone. \( (\exists > \forall / \forall > \exists) \)

d. Two students in my class IMMEDIATELY solved every problem. \( (\text{TWO} > \forall / \forall > \text{TWO}) \)

In (iia) \((= \text{ic})\), when Focus is placed on one lexical item, the scope interpretations differ. In (iia), \text{everyone} takes wide scope over \text{SOMEONE}. In addition, when NPs move for some reasons such as passivization, topicalization and raising, the moved NPs take wide scope over other NPs.

(iii) Topicalization and Passivization

a. Two problems from this textbook, I asked three students to solve for me. (ambiguous)

b. Two problems from this textbook have been solved by three students. (ambiguous)

(iv) Subject Raising

a. It seems to someone that everyone on this list is incompetent. \( (\exists > \forall / \forall > \exists) \)

b. It is likely to occur to someone that everyone on this list in incompetent. \( (\exists > \forall / \forall > \exists) \)

c. Someone seems to everyone to be an ideal candidate. \( (\exists > \forall / \forall > \exists) \)

d. Someone is expected to appear to everyone to be an ideal candidate. \( (\exists > \forall / \forall > \exists) \)

Kitagawa concludes as follows.

"When we can disambiguate the same sentences either by assigning clear focus stress on the quantified subject as in (iia) and (iib), or by suppressing such focusing as in (iic) and (iid) by shifting its location, on the other hand, we can eliminate fuzziness and/or variations of scope interpretation, as we have just observed. If this account is on the right track, we may now consider that no scope ambiguity is involved in the sentences in (iia) and (iib) when we succeed in abstracting away the focusing factors. Then, when we combine this result with our observation concerning the scope interpretation induced by syntactic movement as in (ivc) and (ivd) when we succeed in adjusting away the focusing factors. Then, when we combine this result with our observation concerning the scope interpretation induced by syntactic movement as in (ivc) and (ivd) when we succeed in abstracting away the focusing factors -- that the generalization concerning the correlation between the application of syntactic movement and scope ambiguity reported on Japanese can be extended to English. That is, the hierarchical reordering of quantified expressions yields scope ambiguity while absence of such reordering prohibits scope ambiguity even in English." (pp.231-232)

Ioup (1975) analyzes scope as follows.

(v) a. Joan gave a few handouts to some pedestrians.

b. Joan gave a few handouts to every pedestrians. (emphasis added)

Ioup argues that in (va), it seems as if the total number of handouts is a few and each pedestrian received one, by contrast, in (vb), it becomes certain at once that each pedestrian received a few.

(p.43)

(vi) Scope Tendency

\[ \langle \text{Greatest inherent tendency toward highest scope} \rangle \]

\[
\begin{array}{c}
\text{each} \\
\text{every} \\
\text{all} \\
\text{most} \\
\text{many} \\
\text{several} \\
\text{some (+NPl)} \\
\text{a few}
\end{array}
\]

\[ \langle \text{Least inherent tendency toward highest scope} \rangle \]
(vii) a. Every girl took a chemistry course. (every>a, *a>every)
b. A chemistry course was taken by every girl. (every>a is preferred)
c. Every chemistry course was taken by a girl. (every>a is preferred)
d. A girl took every chemistry course. (a>every is preferred)

In (vii), as the universal quantifier every changes grammatical positions from the deep subject to the deep object (following his use of words), the scope of every decreases. On the basis of these data, Ioup proposes the hierarchies for the scopal tendency that each lexical item and each grammatical function of quantifiers includes.

(viii) Revised Hierarchy of Grammatical Functions
1. topic
2. deep and surface subject
3. deep subject / surface subject
4. indirect object
5. preposition object
6. direct object

9) Chomsky (1981) defines ECP as follows;
   Generalized ECP: If α is an empty category, then
   (i) α is PRO if and only if it is ungoverned
   (ii) α is trace if and only if it is properly governed
   (iii) α is a variable only if it is Case-marked (pp274-275)

10) Subcategorization or Strict Subcategorization defines what elements a lexical item takes as its complements, for instance, the verb hit that takes one NP is described; hit: [+____ NP], while the verb walk that does not take NP as its complement is described; walk: [+____].

11) Applicative languages include the grammatical relations as follows;
   (i) a. oblique/indirect object → direct object
   b. object → second object/oblique
        zebras SP-PAST-hand-ASP trap to fox
        'The zebras handed the trap to the fox.'
   b. Mbidzi zi-na-perek-er-a nkhandwe msampha.
        zebras PS-PAST-hand-to-ASP fox trap
        'The zebras handed the fox the trap.'
   (ii) is an example of Chichewa (Bantu languages), where the fox in (iia) is promoted to the direct object in (iib) and V has a PI form, zi-na-perek-er-a.

12) Baker (1988) explains PI as follows. Languages like Chichewa have two types of preposition, the affix and the independent preposition, while languages like English have only one independent
preposition. PI obeys the Empty Category Principle, so the trace of the preposition which incorporates must be governed by its antecedent or by its theta role assigner. Consequently, PI can not take place either from adjuncts or from Subject positions. PI is blocked by an intervening lexical head between the base position of the P and V into which it incorporates. He argues that the applied object (Goal) must be governed by the prepositional empty category in terms of a filter such as:

(i) The Non-Oblique Trace Filter

\[ *[Oi ... Xj ... \{V\j \] \] at S-Structure (p.299) \]

In (i), O stands for an operator, \{V\) for a nonverbal category (i.e. a P or an N), and X for a lexical category (usually V) which is co-indexed with the \{V\) element through Reanalysis or Incorporation. As a consequence, it follows that a Goal NP cannot move freely.

13) Larson (1988) hypothesizes that one maximal projection can take at most one subject and one complement. He amends the X-bar theory in the following way;

(i) a. XP → Spec,X’, X’
    b. X’ → X, YP

(i) assures a strict binary branching structure.

14) Larson adopts Carrier-Duncan's (1985) thematic hierarchy. Larson's analysis that the double object construction is derived from the dative construction is motivated by Baker's (1988) cession, Uniformity of Theta Assignment Hypothesis, which is defined as follows.

UTAH: Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure. (Baker (1988)p.46)

Larson (1990) suggests a modified, weak version of UTAH.

Relativized UTAH: Identical thematic relationships are represented by identical relative hierarchical relations between items at D-structure.

15) Takano (1996) explains the connectivity effect as follows.

Connectivity: \( \alpha \) is bound by \( \beta \) through Connectivity iff a trace of \( \alpha \), but not \( \alpha \) itself, is bound by \( \beta \). (Takano (1996) p.153)

16) Further, Takano admits that the strength of this effect differs in the positions of the binders.

(i) a. About himself, John always talks to Rosa.

In (ia), \( \text{himself} \) is bound from the subject \( \text{John} \), but in (ib), \( \text{herself} \) is not bound from the Goal PP \( \text{Rosa} \). Finally, the connectivity effect predicts that (iib) should be grammatical, contrary to the fact.

(ii) a. *I showed herself Mary.
    b. *I showed herself to Mary. (Takano (1996) p.166)

If the Theme NP \( \text{herself} \) is bound from the Goal PP at D-structure in (iib), (iib) must be acceptable. Takano explains this fact claiming that the examples (iia-b) are in a violation of condition C.
17) Jaeggli (1986:596) states, "Inherent Case is typically tied to a particular thematic relation. In standard English only the theme argument of a double object verb can be assigned inherent Case in a passive structure as in (i). Note the ungrammaticality of *A book was given John* in most dialects of English (although some dialects do accept it, especially if the goal argument is pronominal, as in *The job was offered me last week*)."

(i) John was given a book by Bill.

Woolford (1993) states, "I will argue that English-type asymmetric passive constructions have two properties that the correct analysis must account for. First, we can reliably predict which object will passivize: only the accusative object with the highest thematic role can passivize. Second, such constructions never allow transitive or ditransitive impersonal passives, regardless of whether they allow intransitive impersonal passives." (p.685)

18) Kayne (1984) proposes a structure for V+NP+NP as follows;

(i) John gave Mary a book.

(ii) \[ \text{\textit{gave}} \quad \text{\textit{NP}} \quad \text{\textit{NP}} \]

\[ \text{\textit{Mary a book}} \]

He assumes that the node dominating two NPs is S based on a par with a sentence such as, 'John believed Mary a genius', arguing the evidence of the 'be-less' copula sentence in Russian;

(iii) Ivan student ('Ivan is a student').

Kayne assumes that Mary in (i) and Ivan in (iii) have the same thematic role, and assumes the presence of a neutral verb-like element between 'be' and 'have'.

19) Pollock (1989) states, "I will provide empirical arguments in favor of the view that Infl (ection) should not be considered as one constituent with two different sets of features ([± Tense, ± Agr]) and that instead each of these sets of features is the syntactic head of a maximal projection, AgrP and IP (the latter to be called, more perspicuously, T (ense) P)." (p.365)

20) Collins (1997) summarizes Features and Checking concisely;

"The features that enter into interpretation at LF are interpretable, while the others are uninterpretable and must be eliminated for convergence. Using this characterization of interpretable features, Chomsky gives the following categorization. The interpretable features are categorial features (± V, ± N, D, T, etc.), the \( \phi \)-features of N (person, number, gender) and the [+wh] feature of wh-phrase. Each of these features plays some role in interpretation. The uninterpretable features are the Case features of an N, the \( \phi \)-features and Case features of V and T, any strong feature, and any other feature not listed under the set of interpretable features. Since interpretable features are needed at LF, they cannot be
deleted. On the other hand, uninterpretable features must be deleted. The deletion of uninterpretable features is Checking, where Checking domain is Specifier of a functional head.

21) However, Koizumi (1993) suggests that ΩP might be another AGR, some aspectual category, or something else. (p.122, f.n.16)

22) Koizumi (1993) proposes the structure for the dative construction in (i). In (i), the Theme NP raises to [Spec, AGRoP] to check Case overtly, while the Goal PP remains in situ throughout the derivation. In other analyses (such as, Fujita (1996), Takano (1996) and Bruening (1999a, b)), it is assumed that the movement of an NP to Specifier of AGRoP is covert at LF. (p.126)

(i) a. Aaron gave the ring secretly to her.

23) Chomsky ((1995) p.352) states; “We restrict attention now to transitive verb constructions, which we continue to assume to be of the form (i), ignoring [Spec, V] (the case of a complex internal domain).

(i) V\_max

\[\text{Subj} \quad v' \quad \text{VP} \quad V \quad \text{Obj}\]

V raises overtly to the light verb \( v \), forming the complex \( \text{Vb} = [v \ V \ v] \). Assuming unergatives to be concealed accusatives, the only other VP construction is that of unaccusatives lacking the \( v \)-shell, not relevant here." Collins (1997) also assumes \( v \)-shell, Tr is equivalent to \( v \) in his analysis. However, he claims that Tr is present even in unaccusative verbs, but it does not check accusative Case. (p.15)

24) Collins (1997) assumes that the category of Appl is V. (p.53)
25) Baker (1997; 121-122) states, "One can make a useful comparison between the UTAH and the Theta Criterion of Chomsky (1981) in this regard. Chomsky (1993) points out that the Theta Criterion is trivially true at the level of LF as it is understood in the Minimalist Program: if functors (such as verbs) do not take the right number of arguments (such as NPs), the system 'crashes', failing to produce something with a usable interpretation. However, it is also true that if a functor takes more than one argument, it must have some way to tell which argument is which; this is necessary in order to distinguish restaurant reviews ('Man eats shark') from suspense movies ('Shark eats man'). The UTAH performs this function of distinguishing the different arguments of the verb by way of virtually the only method available in Chomsky's very spare system: it 'merges' the arguments into the representation at systematically different points. Therefore, there does seem to be a place for the UTAH within the limits of 'virtual conceptual necessity.'

26) The view that these two constructions have two different structures is proposed by Oehrle (1976), Jackendoff (1990) and Napoli (1992). Oehrle (1976; 86-87) states, "The transformational analysis is based on two claims:
1) the selectional and subcategorizational properties of the derived sentence are a consequence of the selectional and subcategorizational properties of the underlying structure;
2) the interpretation of the derived sentence follows from the interpretation accorded to the underlying structure.
I think that both of these claims are in fact not borne out. To claim the above is to claim that the properties of certain words follow from the properties of certain other words. In the theory that has been employed here, the claim is that the relation between the properties of some words and the properties of other words follows from the intersection of the sets of semantic relations that each word represents."

27) Saito and Fukui (1998) also assume that a subject is base generated at V' adjoined position. (p.447) They propose the relativized X-bar theory, which assumes that free recursion is allowed at the X' level, [Spec, X*] is the maximal projection that agrees with the X*, and an X' projects to X" when and only when it is combined with a specifier. And they propose the following structure for the dative construction:
(i) a. Mary handed that book to John.
   b. 
   \[ NP_i \] 
   Mary \[ I \] 
   V' \[ ti \] 
   V V' PP 
   handed NP to John 
   that book
The subject is base generated at V' adjoined position, and when it is adjoined to I', I' projects to I", completing the projection.

28) Kiparsky (1985) states, "What we will assume is that the hierarchy of Th-roles defines the order in which arguments are semantically combined with their predicates. Namely, a verb is first combined with the argument linked to its inner most Th-role, the resulting predicate is combined with the argument linked to its next lowest Th-role, and so on." (p.31)

29) This analysis supports the notion of UTAH (Baker (1988)). There is no need to assume Relativized UTAH as in Larson (1988).

30) Miyagawa (1999) assumes that there should be 'a Dative Position.' In the Possessor Dative Construction (PDC):

(i) a. ha-yalda kilkela le-Dan et ha-radio.
    the-girl spoiled to-Dan Acc the-radio
    The girl broke Dan's radio.' (Hebrew)

    b. J'ai coupé les cheveux à Pierre.
    I cut the hair to Pierre.
    'I cut Pierre's hair.' (French)

he analyzes it as having the structure in (ii).

(ii) V(non-dative) + Dative NP (Possessor) + NP (Possessee)

The possessor dative is an argument of the possessee. It raises to a position typically occupied by verbal arguments, this position is the dative position. If V is non-agentive (e.g. see), the dative position is occupied by Subject. On the other hand, if V is agentive (e.g. look at), the dative position is open because Subject is generated at the specifier of v. And if V is ditransitive, the dative position is occupied by the indirect object. θ -role is not assigned at this position. In the dative position, clitic is licensed in PDC. Then he offers the structure for PDC;

(iii) \[ \text{Spec} \rightarrow vP \rightarrow v' \rightarrow \text{v} \rightarrow \text{VP} \rightarrow \text{Spec} \rightarrow \text{v} \rightarrow \text{V'} \rightarrow \text{Comp} \]

Miyagawa further assumes that the Dative Position may universally exist.

31) Johnson (1991) proposes the basic syntactic notions as follows.

(i) a. Specifiers of XP precede X'.

    b. Verbs always move out of the VP they head.

    c. Accusative Case-marked NPs move to Specifier of VP.

Then he posits the projection of μ as the landing site of the moved V.
Johnson analyzes $\mu$ as the Case-assigner of structural accusative Case, and he identifies $\mu$ with $\text{AgrO}$.

32) $\mu$ can be viewed as Appl in Collins (1997).

33) I claim that the structural notion of c-command has more generality than linear precedence. I also claim that binding from PP is not possible basically. However in some cases, c-command out of PP is possible. Consider the following example.

(i) I showed a picture of herself to Mary. (Oba (1993))

Linear precedence does not explain the grammaticality of (i), since the Theme NP is never in the domain of the Goal PP. Oba (1993) argues that the Theme NP can be c-commanded by the Goal PP at D-structure, which is almost the same as Takano's connectivity analysis. Oba also states that it seems that the Binding Principle A has a strong tendency to be applied at S-structure, but in some examples, it may apply at their D-structures. (p.113 f.n.11) While Takano (1996) argues that a PP headed by to does not block c-command. (p.177) I leave this issue open in this thesis.

34) See Appendix I Semantic Views: 2. Constraints on Goal Object

35) I claim that PI can occur from the Goal PP position, since when V raises to the head of $\mu$ P, V and incorporated P $\phi$ ($V+P \phi$) can properly govern the trace of P $\phi$. The assumption that V consists of the complex form ($V+P \phi$) is compatible with the notion of Appl in Collins' (1997) analysis.

36) Chomsky (1986) defines inherent Case assignment as follows.

If $\alpha$ is an inherent Case-marker, then $\alpha$ Case-marks NP if and only if $\theta$ -marks the chain headed by NP. (Chomsky (1986)p.194)

37) Visser ((1970)p.623\hspace{1em}686) states, "When both the objects are pronouns it seems always to have been the rule to put the direct object before the indirect object. Exceptions are not numerous. Two observations deserve notice: 1904 Bain 317 says: 'The form give me it is a Scotticism', and Kemp Malone (Modern Language Notes, Dec, 1949) states: 'I gave it him rarely occurs in American English; we say I gave it to him.' (Cf. 1957 Kirchner p.215)" And Radford (1988) argues that the acceptability of (72b) comes from the fact that the Theme NP the job is adjacent to V in (72a). Radford claims that only the NP immediately adjacent to V can be passivized.
38) Jaeggli (1986:595) assumes that clausal elements do not require Case in English.

   *NP if NP has phonetic content and has no Case. (p.49)

40) I claim that the Beneficiary PP is base generated at a V' adjoined position between the subject and the Goal PP, in accordance with the Thematic Hierarchy. Woolford (1993) adopts the same hierarchy: Agent > Benefactive > Goal > Theme > Instrument/locative, following Jackendoff (1972) and Bresnan and Kanerva (1989).

41) Larson (1988) posits this kind of argument promotion as Argument Augmentation.
   (i) Benefactive Augmentation (Optional): Add \( \theta \text{BENEF} \) to \( \theta \)-grid of \( \alpha \).
      Condition: \( \alpha \) denotes an event of creation or preparation.
      Result: The theme is for the benefit of the beneficiary.
   (ii) Goal Augmentation (Optional): Add \( \theta \text{GOAL} \) to \( \theta \)-grid of \( \alpha \).
      Condition: \( \alpha \) denotes an event of motion in which the agent imparts a trajectory to the theme.
Larson claims that when (i) is applied to a Goal NP or (ii) to a Beneficiary NP, these NPs are regarded as arguments.

42) Although there are not so many examples in the literature, scope interpretations of *for*-dative verbs, May (1990) presents some data;
   (i) a. Elvis bought a Cadillac for everyone.
      b. Sam gave some lessons to all of the students.
      c. Elvis bought everyone a Cadillac.
      d. Sam gave all of the students some lessons. (pp.82-84)
May argues that (ia-d) are all ambiguous with regard to the two quantifiers. But most researchers think that there is a scope freezing between a Beneficiary NP and a Theme NP in the double object construction even in *for*-dative verbs. (Aoun and Li (1989), Larson (1990), Oba (1993), Kitagawa (1994) and Bruening (1999a,b)).
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Appendix

I Semantic Views

1 Classes of Verbs

There are many studies on the classification of the verbs that undergo so-called dative shift. Usually, verbs are classified into three groups; alternation-class, dative-class and double object-class. And verbs are also divided into to-dative class and for-dative class. Green (1974) observes a number of examples of double object construction (DOC) and dative construction (DC) and classifies verbs into 10 (5 for to-dative classes and 5 for for-dative classes). She also shows the semantic relations that verbs of each class denote;

a To-class 1
1. Subject CAUSED i.o. to HAVE d.o. by VERB-ing d.o.
2. Subject BRING/TAKE d.o. TO i.o. BY VERB-ing d.o.
3. Subject CAUSE d.o. to COME/GO WITH subject TO i.o. BY VERB-ing d.o.
4. Subject CAUSE i.o. to HAVE d.o. BY CAUSE-ing d.o. to COME/GO WITH subject TO i.o. (BY VERB-ing d.o.)
   Verbs: alternant: bring, carry, %drag, hand, haul, pass, %pull, push, take, bring down, bring up, bring over, take down, take over, take up
   Verbs: non-alternant: surrender, tug, deliver, administer
b To-class 2
5. Subject CAUSE i.o. to HAVE d.o. [in accordance with such and such condition i].
   Verbs: alternant: advance, award, cede, concede, dish out, entrust, feed, give, lease, lend, loan, pay, rent, sell, serve
   Verbs: non-alternant: restore, return, submit
c To-class 3
6. Subject CAUSE d.o. to GO FROM subject TO i.o. (BY VERB-ing d.o.)
   Verbs: alternant: cast, fling, float, forward, hurl, lower, mail, pitch, push, relay, roll, send, shove, slid, ship, throw, toss
   Verbs: non-alternant: convey, drift, lift, raise, transport
d To-class 4
(4a,1,2)
7. Subject CAUSE i.o. to HAVE KNOWLEDGE of d.o. BY CAUSE-ing
   {a RENDITION of/ a FACSIMILE of/ INFORMATION about} d.o. to GO FROM subject TO i.o. BY VERB-ing d.o.
   a1: cable, radio, telephone, phone, telegraph, wire
   a2: mail, relay, shout, whisper
(4b)
8. Subject CAUSE i.o. to HAVE cog d.o. BY CAUSE-ing d.o. to "GO" TO i.o. BY VERB-ing d.o.
   Verbs: alternant: cite, preach, quote, read, show?, tell, teach?, write
   Verbs: non-alternant: admit, announce, articulate, broadcast, communicate, confess, declare, demonstrate, describe*, display, drawl, elucidate, exhibit, explain*, explicate, illustrate, indicate, mention, mutter, narrate, portray, propose, prove, recommend*, recite, recount*, refer, repeat, report, reveal, scream, state, suggest, utter, voice, yell*
9. [Subject] INTEND-ing d.o. to GO TO i.o., subject WRITE d.o.
For-class 3
1. Giving: give, pass, hand versus *donate, *contribute

Dativizable subclasses insensitive to the morphological constraint:
7. Future having: bequeath, refer, recommend, guarantee, permit
8. Malefactive/future not having: envy, begrudge, deny, refuse
9. Instrument of communication: radio, telegraph, telephone, satellite, netmail

Some nondativizable subclasses that are cognitively compatible with change of possession:
10. Manner of speaking: *shout, *scream
11. Continuous causation of motion in some manner: *pull, *push, *lower
12. Transferring something needed/deserved: *entrust, *credit, *supply

In this way, English verbs have some ad hoc nature, that is, some verbs are sensitive to constraints and others are not. Green posits four hypotheses to distinguish dativizable verbs;
1) One-syllable words
2) Initial-stressed words containing less than three syllables
3) [+Anglo-Saxon]
4) Words with initially-stressed stems of two syllables or fewer (pp.78-79)

However, as she concludes, these four hypotheses do not account for some exceptions such as final-stressed bi-syllabics (advance) or others (deliver, guarantee, telephone, etc.).
Oehrle (1976) posits a constraint on the basis of Green’s hypotheses;

1) The dative alternation does not apply if the verb in question has the internal structure
   \([X] \text{prefix} = [Y] \text{stem}\)

He explains,

"Essentially, this constraint will only apply to words of Romance origin, if, following
Chomsky & Halle (1968), we restrict the occurrence of the '=' boundary to Latinate words with a
prefix + stem structure." (p.124)

He shows some advantages of this constraint, but also admits that this is either too strong or too
week to cover all verbs.

As these analyses show, the classification of dative verbs are not unified, nor the rules
which can distinguish dative verbs from other verbs are not yet established. However, there
is an interesting view that may build a bridge from semantic analysis to syntactic analysis. Pinker
(1989) posits two assumptions;

1) Morphological rules can be selective in their application to different morphological classes.
2) Rules that alter argument structures count as morphological rules, even if they do not
   effect an overt morphological change. (p.122)

He argues that the English dative rules may be a covert morphological operation. I claim that this
notion may support the syntactic analysis based on Preposition Incorporation.

2 Constraints on Goal Object

There are some constraints on a Goal NP in the double object construction. The first
constraint is animateness of Goal. Green (1974) shows that in general when a Goal NP is
optional, it must be animate;

(1) a. I threw the ball to the 50-yard line.
   b. *I threw the 50-yard line the ball.

(2) a. John brought some flowers to the table.
   b. *John brought the table some flowers.

(3) a. John sent a letter to New York.

Green argues that acceptability in (3) varies, when New York is taken as referring to some specific
people in New York, (3b) is acceptable. Goldberg (1992) argues that the animateness constraint is
satisfied in the source, but not in the target domain of the metaphor; that is, the affected Goal NP
is understood to be a recipient. (p.61) He shows the examples of this kind;

(4) a. The paint job gave the car a higher sale price.
   b. The tabasco sauce gave the baked beans some flavor.
   c. The music lent the party a festive air.

The [HAVE] relation between Goal and Theme is presupposed in (4), and Goal is assumed to be
a recipient (animate), not merely a Goal/Location (inanimate), as noted in Green (1974), Oehrle
(1976), and Pinker (1989). Consequently, the following relationship is assumed;

1) \(V + \text{Theme} + to + Goal(Recipient / Location)\)
   \(V + Goal(\text{Recipient} / *\text{Location}) + \text{Theme}\)
   \(\{Goal(\text{Recipient} / *\text{Location}) \ [HAVE] \ \text{Theme}\}\)

The second constraint is existence presuppositions (Green (1974); p.105).

(5) a. Kill a Commie for Christ.
   b. Kill Christ a Commie.

(6) a. Brutus killed a Celt for Caesar in 49 B.C.
   b. Brutus killed Caesar a Celt in 49 B.C.

(7) a. The American ambassador baked a cake for James I.
(8) a. The American ambassador didn't bake a cake for James I.
Green states that in (5), to those who believe in the existence of Christ, both (5a-b) are acceptable, but to those who do not believe in the existence of Christ, (5b) is not acceptable. To the different acceptability in (b) examples in (6) and (7), Green argues that Brutus and Caesar co-existed in 49 B.C., but American ambassador does not co-exist with James I, so the time of co-existence causes the difference. This means that (b) examples (DOC) require co-existence relationship between a subject and a Goal NP, otherwise a Goal NP cannot be a recipient of a Theme NP. This relation holds even when the proposition is negated as in (8b).

The third constraint is that a Goal object is understood to be a beneficiary or a willing recipient (Goldberg (1992); p.62). Goldberg argues that this constraint is necessary to explain the following sentence:
   (9) *Sally burned Joe some rice.
Only when Joe likes burnt rice, this sentence is acceptable. He advances this analysis showing the difference in politeness in the following examples;
   (10) a. She fed lasagna to the guests.
   b. She fed the guests lasagna.
Goldberg states that (10a) is less polite because the 'feed' is normally used with reference to the food intake of babies or animals, impoliteness is not surprising, and in (10b), the guests are willing to have lasagna, so this form is more respectful. (p.62) In addition, he shows some interesting examples concerning the recipient's willingness.
   b. Bill gave the driver a speeding ticket.
   c. Bill gave Chris a headache.
   d. Chris gave Bill a kick.
In (11a), Jane is expected to willingly drink the martini even though this act will not bring her any benefit. In (11b-d), Goal NPs are required to accept the transferred objects irrelevantly to recipients' willingness or unwillingness, actual successful transfer is only implied. Tenny (1987) analyzes a Goal NP from different angle. She finds six correlations among particles, resultatives and dative objects. One of them concerns the topic here;
   1) Particles, resultatives and dative objects delimit the event described by the verb phrase.
   (p.234)
She argues that in the following (13) examples, the Goal NP Felicia delimits the events, but not in the sentences in (12);
   (12) a. Max baked a cake for Felicia.
   b. William wrote a sonnet for Felicia.
   c. Alphonse knitted that nosewarmer for Felicia.
   (13) a. Max baked Felicia a cake.
   b. William wrote Felicia a sonnet.
   c. Alphonse knitted Felicia that nosewarmer.
   (p.226 citing from Carrier-Duncan and Randall (1987))
Tenny states that at the time Felicia receives the Theme NP, this receipt marks a point of time in the described event -- a point of time that delimits the event. The term, 'delimit' is defined as follows;
   1) An event is delimited iff there is some point of time during which the event transpires, but after which the event is no longer transpiring. If the state p is a state in which the event is transpiring, and the state ~ p is a state in which the event is not transpiring, then for a delimited event there is some point of time when p becomes ~ p. (pp.23-24)
According to Tenny's analysis, in the double object construction, a Goal NP delimits the event, that is, at the point of time when a Goal NP receives a Theme NP is implied.
3 Constraints on Subject

Green (1974) also analyzes that in general, when a Goal NP is optional, a subject must be animate;

(1) a. The rain brought disaster to the farmers.
   b. *The rain brought the farmers disaster.
(2) a. *Eating liver gives lots of iron to you.
   b. Eating liver gives you lots of iron.
(3) a. *The explosion hurled the jewels to Bond.
   b. *The explosion hurled Bond the jewels.
(4) a. *The bloodstains told a story of terror to us.
   b. The bloodstains told us a story of terror.
(5) a. The sun baked these cookies for John.
   b. *The sun baked John these cookies.
(6) a. *Jane's money bought a teapot for her.
   b. ?Jane's money bought her a teapot. (pp.104-105)

In the examples (2) and (4), the double object constructions are preferred, however. The difference may lie in the human conceptual system. In (2), eating liver and lots of iron do not exist separately, rather the act of eating liver itself directly causes the increase of iron within you. In consequence, the construction that implies transference of an independent Theme NP is not permitted. The examples (4) are explained in the same way.

The verbs of 'future having', such as assign permit both constructions;

(7) a. Your theory assigns the feature [+N] to sincerity.
   b. Your theory assigns sincerity the feature [+N].
And the verbs of 'performance' require animate Agents as their subjects;

(8) a. The guitar played "Blowing in the Wind" (for us).
   b. *The music box played Brahms' "Lullaby" for us.
   c. *The music box played us Brahms' "Lullaby."
   d. Bobby played the music box for us.
   e. Bobby played us the music box.
   f. Bobby played Brahms' "Lullaby" for us on the music box.
   g. Bobby played us Brahms' "Lullaby" on the music box.

In (8a), the guitar implies the guitarist, but in (8b-c), the music box cannot be an animate player. The examples (8d-g) indicate that the music box is an instrument, not an independent player.

The second constraint is whether a subject has volition or not. Green (1974) shows the following examples;

(9) a. Mary gave John an idea.
   b. Mary gave an idea to John.
(10) a. Mary's behavior gave John an idea.
   b. *Mary's behavior gave an idea to John.

She explains the difference between (9) and (10), "When give means 'provide with' as opposed to 'present as a gift,' the indirect object is restricted to a prepositionless form, and the action in many cases can be conceived of as non-volitional." (p.84)

That is, in (10b), Mary's behavior itself cannot be a volitional Agent or Causer, while Mary herself can be both in (9).

Goldberg (1992) shows interesting examples;

(11) a. Oedipus gave his mother a kiss.
   b. Joe gave Mary a sweater with a hole in it.
He states, "The description used to pick out the objects may be understood to be the speaker's description, not the subject's." In (11a), Oedipus did not realize he was kissing his mother, and in
(11b), even if Joe did not intend to give Mary a defective sweater, the result was described by the speaker as the example shows. This observation is very insightful because the output as a sentence may consist of the speaker's conception of the world and the speaker's own grammatical calculation. Comparing (10b) and (11), I propose a view to volitionality as follows;

1) A subject's volition is connected to the syntax directly, while a speaker's volition can select either the double object construction or the dative construction.

The semantic decompositions are assumed as follows on the basis of this view;

2) V+Theme+to+Goal: Subject [CAUSEvolition] Theme to [GO] TO Goal
3) V+Goal+Theme: Subject [CAUSEvolition] Goal to [HAVE] Theme

( ) stands for 'optional'

Green (1974) also finds a subject's ability of creating the condition at will;

(12) a. Mary gave John the measles.
   b. Mary gave John an inferiority complex.

(13) a. *Mary gave the measles to John.
   b. *Mary gave an inferiority to John. (pp.82-83)

In (13), Mary cannot control the transference of the measles or an inferiority, and thus volitional structure cannot be used. The different acceptability between (14) and (15) is explained in the same manner. In (14), Mary cannot separate the Theme NP nor can transfer it to the Goal NP, as indicated in (16), the verb and the Theme NP are built in a single verb.

(14) a. Mary gave John a bath.
   b. Mary gave John a kiss.

(15) a. *Mary gave a bath to John.
   b. *Mary gave a kiss to John.

(16) a. Mary bathed John.
   b. Mary kissed John. (pp.82-83)

Goal and Theme NPs are in the situation of direct physical contact, that is, a Goal NP is 'affected' in the sense of Tenny (1987), "A semantic argument is an affected argument iff it independently delimits the event in which it participates." The same is true in cases that involves non-physical interpersonal behavior;

(17) a. Mary gave John a piece of her mind.
   b. Mary gave John her best wishes.
   c. Mary gave John a call.

(18) a. *Mary gave a piece of her mind to John.
   b. *Mary gave her best wishes to John.
   c. *Mary gave a call to John. (Green (1974); pp.83-84)
The Paradigms of Scope Relations (Kitagawa (1994))

(1) a. ODC: The teacher assigned [two problems from this textbook] [to three students].
    -- ok 2>3 (=2 Problems 6 Students reading)
    ok 3>2 (=3 Students 6 Problems reading)

    b. DOC: The teacher assigned [three students] [two problems from this textbook].
    -- ?? 2>3 (=2 Problems 6 Students reading)
    ok 3>2 (=3 Students 6 Problems reading)

    c. DOC: The teacher [THREE students] [two problems from this textbook].
    -- ok 2>3 (=2 Problems 6 Students reading)
    ok 3>2 (=3 Students 6 Problems reading)

    d. DOC: The teacher IMMEDIATELY assigned [three students] [two problems from this textbook].
    -- * 2>3 (=2 Problems 6 Students reading)
    ok 3>2 (=3 Students 6 Problems reading)

(2) a. ODC: John sent [three kinds of cards] [to two children].
    -- ok 3>2 (=3 Kinds of Cards 6 Children reading)
    ok 2>3 (=2 Children 6 Kinds of Cards reading)

    b. DOC: John sent [two children] [three kinds of cards].
    -- ?? 3>2 (=3 Kinds of Cards 6 Children reading)
    ok 2>3 (=2 Children 6 Kinds of Cards reading)

    c. DOC: John sent [TWO children] [three kinds of cards].
    -- ok 3>2 (=3 Kinds of Cards 6 Children reading)
    ok 2>3 (=2 Children 6 Kinds of Cards reading)

    d. DOC: John IMMEDIATELY sent [two children] [three kinds of cards].
    -- * 3>2 (=3 Kinds of Cards 6 Children reading)
    ok 2>3 (=2 Children 6 Kinds of Cards reading) (p.232)

(ODC: Oblique Dative Construction, DOC: Double Object Construction)
III Visser's (1970) Observations

Chapter Four  Verb with complement  
II. Two Objects  
d) Indirect Object + Direct Object  

682 This construction is extremely common in Old English with verbs whose fundamental meaning is that of giving, bestowing, granting, imparting, etc. The indirect object denote, the person who 'receives' what is referred to by the direct object, which may be an answers news, a report, a communication, a refusal, a rebuke, a warning, a title, a rank, a confession a direction, etc. The functional relation is clearly expressed by the indirect object appearing in the dative and the direct object in the accusative case.

684 After the Old English period, when there is no longer a dative case, the indirect object can no longer be distinguished from the direct object by means of the difference in inflectional form. Henceforth the interpretation depends on context and situation, and on the fact that in the majority of cases the indirect object refers to a person and the direct object to a thing, so that even the word-order is mostly immaterial and sentences like the following could hardly be misinterpreted: ... There were, however, also cases in which both the objects referred to persons: 1410 Walton, tr. Boethius' De Consol. (EETS)p.209, 'I will restore This man his wyf'. In later English constructions of this kind lost their ambiguity owing to the fact that a fixed word order came to take over the discriminative task of the difference in case forms, or, in the words of L.Bloomfield and C.C.Fries, to the tendency for taxemes of order to prevail over taxemes of selection (i.e. inflections or word forms). Today it is the rule that (when the prepositions to is not used) the indirect object precedes the direct object.

687 The types 'He shewed to pe kiyng his sweven'; 'I shal giue to thee a coroun'. Here the indirect object is preceded by the preposition to. Constructions of this type began to appear -- by the side of those without preposition -- at the beginning of the Middle English period. (note 1 . But already occasionally in late O.E.) Before 1300 the number of examples is very restricted, especially in the poetry. (See 1904 Swane; 1909 Nagel 88-91; 1929 Düringer 30). In the course of the 14th and 15th centuries the number increases with striking rapidity, partly also on account of the adoption of numerous French verbs which were construed with a before a noun-complement. The subjoined evidence shows that during these centuries the to-phrase was frequently used in cases where it would be unidiomatic today. After 1500 its use became gradually more restricted and less unsystematic.

692 After the Old English period this construction remains in frequent use. The indirect object of advantage is usually a pronoun, only occasionally a noun: ...The nouns are in the zero, the pronouns in the oblique case, so that the indirect object character is no longer formally expressed, and is only clear from the context and the word-order. Concerning the pronouns in the oblique case in constructions of the type 'pai bunden him hande and fet', 'They broke him his shoulder', 'I kist him bath front and chek' it may be asked whether their function was and is apprehended as different from that which they have in 'they bound him', 'I kissed him'. The pointing out that there was a corresponding passive construction (e.g. a1438 Bk. Marg. Kempe 178,23, 'per was sche bowndyn handys and feet with chenys of yron') is not very helpful, since the construction 'I gave him a book' (with an indubitable indirect object) also has a passive parallel in 'I was given a book'. The construction 'having himself a hell of a time' in the following quotation would seem to be an Americanism: 1947 P.Gallico, The Lonely (Mermaid Bks) 125, 'And it was another part too[sc. to this knowledge]that there was once a boy, a crazy kid, having himself a hell of a time flying an airplane with a bunch of good guys'.

### IV The Sentences of Scope Relation Test

<table>
<thead>
<tr>
<th>Construction</th>
<th>Sentence</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOC (O1-O2)</strong></td>
<td>The teacher assigned one student every problem.</td>
<td></td>
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<tr>
<td><strong>DC (O1-O2)</strong></td>
<td>The teacher assigned one problem to every student.</td>
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<tr>
<td><strong>To-DOC (S-O1)</strong></td>
<td>Every teacher assigned one student that problem.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
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</tr>
<tr>
<td></td>
<td>One teacher assigned every student that problem.</td>
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<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
</tr>
<tr>
<td></td>
<td>Some teacher assigned every student that problem.</td>
<td></td>
<td>U</td>
<td>U</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Two teachers assigned three students problems.</td>
<td>A</td>
<td>U</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td><strong>For-DOC (S-O1)</strong></td>
<td>Every girl made one boy that cake.</td>
<td>A</td>
<td>A</td>
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<td>A</td>
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<tr>
<td></td>
<td>One girl made every boy that cake.</td>
<td>A</td>
<td>A</td>
<td>A</td>
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<td>U</td>
</tr>
<tr>
<td></td>
<td>Some girl made every boy that cake.</td>
<td>U</td>
<td>A</td>
<td>A</td>
<td>A</td>
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</tr>
<tr>
<td></td>
<td>Two girls made three boys cakes.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>To-DOC (S-O2)</strong></td>
<td>Every teacher assigned that student one problem.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>U</td>
<td></td>
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<tr>
<td></td>
<td>One teacher assigned that student every problem.</td>
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<td>U</td>
<td>U</td>
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<td>U</td>
</tr>
<tr>
<td></td>
<td>Some teacher assigned that student every problem.</td>
<td></td>
<td>U</td>
<td>U</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Two teachers assigned students three problems.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td><strong>For-DOC (S-O2)</strong></td>
<td>Every girl made that boy one cake.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>U</td>
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<tr>
<td></td>
<td>One girl made that boy every cake.</td>
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<td>U</td>
<td>A</td>
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<tr>
<td></td>
<td>Some girl made that boy every cake.</td>
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<td>U</td>
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<tr>
<td></td>
<td>Two girls made boys three cakes.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td><strong>To-DC (S-O2)</strong></td>
<td>Every teacher assigned one problem to that student.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>U</td>
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</tr>
<tr>
<td></td>
<td>One teacher assigned every problem to that student.</td>
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<tr>
<td></td>
<td>Some teacher assigned every problem to that student.</td>
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<td>U</td>
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<td>A</td>
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<tr>
<td></td>
<td>Two teachers assigned three problems to students.</td>
<td>A</td>
<td>U</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td><strong>For-DC (S-O2)</strong></td>
<td>Every girl made one cake for that boy.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>U</td>
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<tr>
<td></td>
<td>One girl made every cake for that boy.</td>
<td>U</td>
<td>U</td>
<td>A</td>
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<tr>
<td></td>
<td>Some girl made every cake for that boy.</td>
<td>U</td>
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<tr>
<td></td>
<td>Two girls made three cakes for boys.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td><strong>To-DC (S-O1)</strong></td>
<td>Every teacher assigned that problem to one student.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
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</tr>
<tr>
<td></td>
<td>One teacher assigned that problem to every student.</td>
<td>A</td>
<td>U</td>
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</tr>
<tr>
<td></td>
<td>Some teacher assigned that problem to every student.</td>
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<tr>
<td></td>
<td>Two teachers assigned problems to three students.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td><strong>For-DC (S-O1)</strong></td>
<td>Every girl made that cake for one boy.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>One girl made that cake for every boy.</td>
<td>U</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>U</td>
</tr>
<tr>
<td></td>
<td>Some girl made that cake for every boy.</td>
<td>U</td>
<td>A</td>
<td>U</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Two girls made cakes for three boys.</td>
<td>A</td>
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<td></td>
</tr>
</tbody>
</table>

A: British speaker  B,C: Canadian speakers  D,E: American speakers

(A = Ambiguous  U = Unambiguous)

DOC: double object construction  DC: dative construction

S = Subject  O1 = Goal NP  O2 = Theme NP
V Summary of the Scope Relation Test

### Double Object Construction (to-dative verbs)

<table>
<thead>
<tr>
<th>Subj</th>
<th>O1</th>
<th>O2</th>
<th>Result</th>
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<tbody>
<tr>
<td>Every</td>
<td>one</td>
<td></td>
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<tr>
<td>Two</td>
<td>three</td>
<td></td>
<td>Ambiguous 80%</td>
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