

**OBJECT FUNCTIONS AND THE SYNTAX OF  
DOUBLE OBJECT CONSTRUCTIONS  
IN LEXICAL FUNCTIONAL GRAMMAR**

by

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A thesis submitted to  
the Committee for Comparative Philology and General Linguistics  
of University of Oxford  
in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy

Trinity Term 2008

Abstract of thesis entitled

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It has long been observed that, in a double object constructions (DOC), the two objects exhibit different syntactic behaviour. In Lexical Functional Grammar (LFG), these two objects are characterized as two distinct grammatical functions. The object that syntactically patterns with the monotransitive object is the unrestricted object OBJ. The one that does not is the restricted object OBJ<sub>θ</sub>. The goals of this dissertation are to investigate the syntax of DOCs, and to explore the two object functions in LFG.

When thinking about DOCs, the verb that almost invariably comes to mind is GIVE. This verb, however, may not be as prototypical as is commonly assumed. In Cantonese, it is the only verb whose objects are in an anomalous order, with the object that bears the theme role preceding the object which expresses the recipient role. Cantonese as a language does not uniformly have the direct (theme) object

preceding the indirect (recipient) object. Other than the difference in their linear order, the objects in the GIVE-construction pattern with those in all other DOCs in the language.

In some languages, there is a possibility of having more objects than is required by the underived form of a verb. An additional object can be licensed by the affixation of an applicative morpheme to the verb root. The syntax of the objects in an applicative construction is directly related to the type of semantic role that is applied. This has posed challenges for previous accounts of applicative constructions, as a change in the morphological structure of a verb is accompanied by a change in its argument structure. A new proposal is offered to account for this.

A study of the syntax of DOCs involves much more than merely acknowledging the presence of two object functions in the construction. The morphology of the verb, the semantic roles that are required by the verb and the linear order of the arguments that express these roles are all relevant. Assuming various parallel but inter-related levels of representation, the theory of LFG has the suitable tools to take all these into consideration. Reference can be made straight-forwardly to the information at the different levels of representation, including the a-structure, the c-structure, the f-structure and the m-structure.

(368 words)

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## List of Abbreviations

Abl	absolutive case	OM	object marker
Acc	accusative case	Part	partitive case
Ag	agent	Pass	passive affix
Appl	applicative affix	Perf	perfective aspect
Art	article	Pers	person
Asp	aspect	Pl	plural number
Ben	benefactive	Poss	possessor
CL	classifier	PRED	predicate
Dat	dative case	Pres	present tense
Def	definite	Prn	pronoun
Erg	ergative case	Prop	propriative case
Exp	experiencer	Pst	past tense
F	feminine gender	Pt	patient
Fv	final vowel	Rel	relative clause marker
Gen	genitive case	Rpt	recipient
Gend	gender	Sfp	sentence final particle
GF	grammatical function	sg	singular number
Instr	instrument	SM	subject marker
Loc	locative	SUBJ	subject
M	masculine gender	Th	theme
Neg	negation marker	Tns	tense
Nom	nominative case	1	first person
Num	number	2	second person
OBJ	unrestricted object	3	third person
OBJ <sub>θ</sub>	restricted object		

# Chapter 1

## Introduction

This dissertation is a study of double object constructions (DOCs), and the object functions in Lexical Functional Grammar (LFG). A double object construction is one of the means in natural language to encode a predicate with three arguments. Very often, these arguments include an agent, a benefactive/ recipient<sup>1</sup>, and a theme. The double objects are syntactic expressions of the non-agent roles recipient and theme.

### 1.1 Aims of Study

One of the aims of this study is to explore DOCs from a cross-linguistic perspective. Particular attention is paid to several languages whose DOCs display peculiar characteristics. We are also interested in the fact that there can be more than one object within a single construction. What is particularly interesting is that, while both the recipient and theme roles have an object-like syntactic realization, e.g. both bear some sort of relation to the subject, for instance, and both share the label

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<sup>1</sup> In the literature, the non-agent, non-theme role in a double object construction is often attributed a number of semantic roles, including benefactive (beneficiary), goal and recipient. We do not distinguish between these semantic roles in the discussion that follows, and these terms are used more or less interchangeably.

‘object’, the two objects in fact display striking syntactic differences beyond their apparent difference in semantic roles. How the objects behave and how they differ are two of the major areas of investigation in this study.

Our knowledge of the different types of objects in a DOC will also contribute more generally to our understanding of the object-like grammatical functions. This is particularly important in a framework like LFG, where grammatical functions are understood to be primitive notions through which other linguistic generalizations are formulated.

To be more specific, in this study, we aim at addressing the following questions:-

- (1) How is the grammatical relation referred to as ‘object’ characterized in the literature?
- (2) What is a DOC? How do the double objects behave and what are the differences between them?
- (3) What are the object functions in LFG? What does each of these grammatical function labels encompass?
- (4) How does the syntax of the GIVE-construction bear on the syntax of DOCs in general? What do Cantonese DOCs show in relation to this?

- (5) What is an applicative affix? How does it relate to double and even multiple object constructions? How do Chichewa applicative constructions contribute to our understanding of the object functions?

It is hoped that our study of DOCs will not only contribute to our understanding of this type of construction, but also to our understanding of the notion of ‘object’ as a grammatical relation and ultimately, to our knowledge of grammatical functions. To our knowledge, this study is among the first of its kind to focus solely on the object functions in LFG and their relation to DOCs.

## **1.2 Organization of Dissertation**

This dissertation is organized as follows. Chapter 2 provides a general overview of the notion of ‘object’. The notion is very often referred to, but is in fact very difficult to grasp. An understanding of the term is necessary as all the chapters in this dissertation, inevitably, make reference to the idea of an ‘object’.

Chapter 3 focuses on double object constructions, which are constructions with two objects. The two objects, interestingly, are not identical in morphosyntactic, semantic and pragmatic behaviour, even though they are both labelled ‘object’ in the term ‘double object construction’. The linguistic behaviour of the two objects and

how they differ are discussed in this chapter. The chapter also investigates the syntax of *the* most prominent ditransitive verb in the literature, GIVE, and shows that the verb is in fact a much more atypical ‘prototypical example’ of a ditransitive verb than is commonly assumed.

Chapter 4 narrows the scope of the discussion further, and shows how the different objects are handled within the LFG framework. Two grammatical functions are assumed for the two types of object relations in a double object construction. They are the unrestricted object function and the restricted object function. Each of these functions and their syntactic behaviour, together with the more general grammatical function classification in LFG, will be discussed at length.

Chapters 5 and 6 present two language-specific case studies of double object constructions. In Chapter 5, the language that is of interest is Cantonese, a Yue dialect among the Sinitic group of languages spoken mainly in the south-eastern parts of China. We are particularly interested in the syntax of the GIVE-construction in Cantonese, and will show that the cross-linguistically peculiar order of non-subject arguments, with the theme object preceding the recipient object, is unique to this particular construction. Cantonese as a language does not uniformly have the direct (theme) object preceding the indirect (recipient) object (contra

Haspelmath et al. 2005). We will also show how this can be captured straight-forwardly by making use of the parallel levels of representation in LFG.

In some languages, there is a possibility of having more objects than is required by the underived form of a verb. These objects are licensed by the affixation of an applicative morpheme to the verb root, and in Chapter 6, we investigate the syntax of applicative constructions in Chichewa, a Bantu language spoken mainly in Malawi, Mozambique and Zambia. The simultaneous change in verb form caused by the affixation of the applicative morpheme to the verb root, and the change in argument structure that is effected by this morphological affixation, has posed challenges for previous accounts of applicative constructions. We will propose a new analysis for this in Chapter 6.

Chapter 7, being the final chapter in this dissertation, concludes the dissertation and makes suggestions for directions for future research.

## Chapter 2

### Object: Some Cross-linguistic Observations

The term ‘object’ is very commonly and widely used in the literature. There does not seem to be much confusion among linguists when the term is used. Yet, there does not seem to exist a clear and widely accepted definition of ‘objects’.

The object as a grammatical relation has also not been adequately studied (but see Plank 1984), especially when compared to the subject function, the most prominent grammatical relation (on the Keenan-Comrie Accessibility Hierarchy (Keenan and Comrie 1977), for instance). Many studies of ‘grammatical relations’ focus on the subject. The object, very often, receives only slightly more than mere mention. Being the second-most prominent grammatical relation, it is perhaps its ‘second-most’ status that makes the characterization of the object difficult. While there are numerous grammatical properties that can be guaranteed to be found on subjects, and in some languages on the subject alone, the same cannot be said for the object.

The aim of this chapter is to provide a very general overview of some of the properties that are commonly associated with the object in the literature. We do not intend for any of the properties to be discussed to serve as definitive criteria for the

grammatical relation known as ‘object’, nor is it the goal of this chapter to define the term ‘object’. It has been found in previous studies that the object *tends to* be associated with certain semantic, morphological, pragmatic and syntactic properties, and we report on some of these here.

We will mainly be concerned with the properties of the object in a mono-transitive construction in this chapter. We shall begin with a discussion of the semantic ones (section 2.1). We then move on to the morphological (section 2.2), pragmatic (section 2.3) and syntactic (section 2.4) properties.

## 2.1 Semantic Properties

The object function is not confined to any particular semantic role. In fact, it can bear a number of semantic roles. It is also possible for an object to be semantically empty, as in (1c) (see also section 4.2.3 and section 4.3):

- (1) a. His stories fascinate me. (Experiencer)
- b. She pushed me. (Theme/ Patient<sup>1</sup>)
- c. I believe there to be a solution. (No theta-role – a semantically empty object)

While it is a generally accepted view that the object may bear a fairly wide range of semantic roles, it is commonly assumed that those that are associated with

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<sup>1</sup> We do not make a clear distinction between the theme role and the patient role. The terms ‘theme’ and ‘patient’ are used interchangeably.

it are ‘patientlike’, as objects are traditionally thought of as being an entity that is affected. We will see in the next section that affectedness is considered by some to be a property that is correlated with the inherent semantic features of the object, and affectedness has an effect on the morphological encoding of objects in many languages.

## **2.2 Morphological Properties**

There are two types of morphological properties – agreement and case-marking. In some languages, there may be morphological signals on the verb to indicate the presence of an object (i.e. agreement). Languages may also encode their objects by using case morphology (i.e. case-marking).

The relation between morphology and objecthood may be quite complex. In languages where there is object encoding, it is not uncommon for it to be differential. It is not difficult to find a language in which certain objects trigger object agreement but others do not. The same is true of case-marking – in some languages, only certain objects are encoded with a particular case marker, but others either do not have any marker, or are encoded with a different one. The case-marking of objects in Finnish is a well-known case in point. The same grammatical function of object may be marked by accusative case (2a) or partitive case (2b). The different

case-markings will give rise to different interpretations of the object:

(2) Finnish (Kittilä 2002, in Naess 2004:1203, e.g. 11)

a. Hän jo-i maido-n  
s/he drink-pst.3.SG milk-ACC  
'S/he drank (all) the milk.'

b. Hän jo-i maido-a  
s/he drink-pst.3.SG milk-PART  
'S/he drank (some of the) milk.'

There are also examples where the same case marker is used to encode different grammatical functions. In Icelandic, for instance, the accusative case marker encodes both the subject (3a) and the object (3b):

(3) Icelandic (Andrews 1982, in Dalrymple 2001:41, e.g. 89)

a. Accusative case marking the subject:

*Hana dreymdi um hafð*  
She.ACC dreamed about sea.DEF  
'She dreamed about the sea.'

b. Accusative case marking the object:

*Stúlkan kyssti drengina*  
Girl.NOM kissed boys.ACC  
'The girl kissed the boys.'

Why should the various instances of the object function be morphologically encoded differently even within the same language? A number of proposals have been made to account for differential object marking. In these accounts, it is generally believed that there exists some notion of a prototypical object. The default or unmarked encoding is reserved for the more natural objects, and the less

prototypical or even atypical objects have to be signalled by encoding the objects in question with different morphological markings. These accounts, then, depend crucially on what a prototypical object is like.

One such account is Croft (1988), who believes that a prototypical object is inanimate, indefinite, non-volitional and highly affected. Croft, however, argues that these prototypical properties only hold of objects in terms of case-marking, which is a mechanism that reflects *deviations* from the prototypical object (Croft 1988:169). Objects that are animate, definite, volitional and not highly affected are therefore more likely to be case-marked. Case-marking, for Croft, is motivated by the need to code ‘non-obvious’ grammatical relations. Grammatical relations that are lower on the ‘case hierarchy’ (i.e. subject < direct object < indirect object < oblique, Croft 1988:164) are less obvious than those that are higher up on the hierarchy, ‘since the relation of more oblique arguments to the predicate are less obvious than those of the central, normally present or even obligatory arguments’ (Croft 1988:169).

Although it may be true that oblique functions are ‘less obvious’ in this sense, it is not exactly clear why indirect objects are considered ‘less obvious’ than subjects and direct objects, and direct objects ‘less obvious’ than subjects, since all of them are arguably core participants in an event. It is also unclear why animate, definite and volitional objects are in any way ‘less obvious’ and thus less natural

than inanimate, indefinite and affected ones and are therefore more likely to be case-marked. One possible explanation for this is that, to be easily identifiable or to be ‘obviously’ an object, a nominal has to be significantly and sufficiently different from the subject, whose prototype is animate, definite and volitional. If this is the case, Croft’s analysis seems to be an extension of the functional hypothesis that ideal subjects and ideal objects should be in opposition in order for them to be distinguished easily.

Croft’s arguments for differential object agreement, however, are very different. Agreement, unlike case-marking, does not code non-obvious grammatical relations but codes salient arguments. An argument is salient if it is involved in an event, close to the speaker and can be identified easily (Croft 1988:168). Thus, the most salient argument is one that is high on the ‘case hierarchy’, animate, definite and volitional. In other words, subjects are more salient than objects and are more likely to trigger agreement, and the same is true for animate and definite objects when compared to inanimate and indefinite ones.

Givón (1976) also believes that, in the case of agreement, it is the animate and definite objects that are more likely to trigger agreement. He, however, has a different view of why this is so. Givón argues that agreement is the final result of the process of over-using topicalization strategies. Object agreement, like subject

agreement, is in fact a case of topic agreement (Givón 1976:151). The pronoun begins as a resumptive pronoun for a left-dislocated topic and a right-dislocated topic (the ‘afterthought-topic’). ‘Afterthought’ topicalization is continuously overused until this strategy loses its topicalization effect completely and the resumptive pronoun is re-analyzed as an agreement marker. This proposal explains why agreement is more likely with human, definite, more involved and first or second person objects. An object with such properties is more likely to serve as the topic, or is ‘topic-worthy’.

Hopper and Thompson (1980) provide yet another explanation for object-marking (including both agreement and case-marking). By exploring the relationship between the discourse status of entire clauses in texts and the features of the objects in these clauses, they find that if a clause is in the foreground, ‘the material which supplies the main points of the discourse’ (Hopper and Thompson 1980:280), and if the clause contains an object, the object is much more likely to be affected<sup>2</sup> and individuated<sup>3</sup>.

On this basis, Hopper and Thompson argue that definite and animate objects are more natural or prototypical than indefinite and inanimate ones in foregrounding.

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<sup>2</sup> In addition to the inherent features of the object, clausal properties such as the telicity/ delimitation, boundedness, polarity (or affirmation in Hopper and Thompson) and mode of an event are all believed to contribute to the overall affectedness of the object (Hopper and Thompson 1980, Ritter and Rosen 2001).

<sup>3</sup> Individuation is related to a combination of features - including the noun type, animacy, concreteness, number, countability and referentiality of the object (Hopper and Thompson 1980).

The coding of objects, however, is not motivated by the need to signal markedness, but is a reflection of the overall transitivity of the whole clause (Hopper and Thompson 1980:291). Their use of the term ‘transitivity’ differs from the more common use – transitivity is not only a property of a verb, but is a property of the entire clause. A verb subcategorizing for an object is only one illustration of the many dimensions contributing to the overall transitivity of the clause, with affectedness and individuation being two of the other dimensions.

Other proposals have shown that, in some languages, none of the factors mentioned seems to matter in the differential marking of objects. Dalrymple and Nikolaeva (2005) show that in Ostyak and Chatino, object agreement and case-marking are motivated by information structural considerations, and not by the inherent semantic features of the object. We will discuss this briefly in the next section. For a more detailed discussion, see section 4.2.3.2.

### **2.3 Pragmatic/ Information-Structural Properties**

The last three studies discussed in the previous section (e.g. Givón 1976, Hopper and Thompson 1980, and Dalrymple and Nikolaeva 2005) all attribute significance to pragmatics or discourse/ information structure in their analysis of object-marking. The prototypical object, then, is seen to possess certain pragmatic/

information-structural features. Givón (1976) and Lambrecht (2000), for instance, both suggest that the object function corresponds with new arguments or focus (more specifically, the object is associated with ‘argument-focus’ using Lambrecht’s terminology).

The correspondence of the object with the focus role is, of course, not the only possibility (Dalrymple and Nikolaeva 2005). The object may also bear a secondary topic role, for instance. A clear illustration of a secondary topic is in a response to a question such as ‘What did X do to Y?’, where the predicate is in focus in the response and the object bears a different role – that of the secondary topic role. In some languages, an object with a secondary topic role has unique grammatical properties. In Ostyak, for instance, an object that is a secondary topic triggers agreement and in Chatino, it causes the object NP to be case-marked by a preposition (Dalrymple and Nikolaeva 2005:15-20).

Dalrymple and Nikolaeva (2005:28), however, argue that ‘objects are just as likely to be topics as to be in focus’, although they do acknowledge the fact that ‘in clauses containing no other material than the subject, object and verb, the object is indeed a likely focus’ (Dalrymple and Nikolaeva 2005:29). They also argue for a topical object and a focused object corresponding to different object functions in LFG – the topical object being linked to the unrestricted object OBJ and the focused

object to the restricted object OBJ<sub>θ</sub>. See section 4.2.3.2 for more details.

## 2.4 Syntactic Properties

The object of different constructions in a language or of different languages, being a single grammatical function, should behave consistently under various syntactic ‘tests’. The most widely used syntactic test for objecthood is perhaps passivization. An NP in an active sentence is considered an object if it can become the subject of the corresponding passive sentence. An NP that can undergo passivization is an object, but not all NPs that would normally be viewed as objects can be passivized. In (4a), for example, the postverbal NP would normally be analyzed as object, although this NP cannot be passivized (4b):

- (4) a. He resembles his father.  
b. \*His father is resembled by him.

Other tests for objecthood include obligatory occurrence, relativization, and extraction, among others. None of these tests, however, targets or picks out only the object. If, in a language, any of these tests can be applied to the object, then most likely, the same test can also be applied to the subject, the more prominent grammatical function.

One cross-linguistic observation that has been made regarding the position of the object in a clause in relatively configurational languages is that the object has

strong affinity towards the verb. In many cases, the most natural position for the objects is for it to be immediately adjacent to the verb.

## 2.5 Chapter Summary

We have seen that the grammatical function ‘object’ is not easy to characterize. There does not seem to exist a property or a test that can be used to identify the object in a language or across languages, although an NP is *more likely* to be an object if it:-

- has a patientlike thematic role;
- bears the focus role at information structure; and
- can become the subject of the corresponding passivized construction.

It must be noted that none of these alone should be taken as a definitive characteristic of object. An NP displaying a cluster of object properties is more likely to be an object.

## Chapter 3

### Double Object Constructions

Double object constructions (henceforth DOCs), as the term suggests, are constructions in which there are two objects. DOCs are a very common means to realize the arguments of a three-place predicate, although other means are also possible, e.g. a prepositional dative structure [V NP PP] in English.

This chapter provides a general overview of DOCs across languages, and it is organized as follows. Section 3.1 investigates the notion of ‘ditransitivity’, and how it relates to DOCs. We will also investigate the syntax of the most frequently used example of a DOC, the GIVE-construction, and show how this construction may not be as prototypical as one might assume. Section 3.2 considers the status of the objects in a DOC. The objects are not equal in status, in that they do not show identical grammatical behaviour, with one being more like the object in a monotransitive construction than the other. This is followed by a review of an previous analysis of DOCs in the literature (Larson 1988) in section 3.3, one which is proposed within a transformational framework. We will discuss some of the problems that this analysis has, some of which are fundamental and challenge even the assumptions in the theory of grammar in which it is conducted.

### **3.1 Ditransitivity and Double Objects**

This section considers the terms ‘ditransitivity’ and ‘double objects’, and provides a working definition for each term. These definitions will serve as the basis of further discussion of ditransitive and double object phenomena in this dissertation. With these, it is hoped that the arguments in the chapters that follow can be more accurately interpreted.

There are at least two ways to define ‘ditransitivity’. The first is to consider only the number and type of arguments a predicate takes at the level of argument structure. We shall label this ‘semantic ditransitivity’. The second way is to consider the morphosyntactic realization of these arguments. We shall call this ‘syntactic ditransitivity’. Each of these will be considered in the following sections.

#### **3.1.1 Semantic Ditransitivity**

Malchukov et al. (2007:2) define ditransitivity in terms of the number and type of arguments that a verb requires. A verb that is ditransitive is a three-place predicate, i.e. ‘trivalent’ in Kittilä’s (2006:574) terms, and subcategorizes for an agent argument, a recipient-like argument and a theme argument. Examples of the most typical verbs that have this subcategorization frame across languages include GIVE, LEND, HAND, SELL, RETURN, SHOW and TELL (Malchukov et al.

2007:2).

(1) Examples of verbs which require an agent, a recipient and a theme in English:

a. GIVE

[John] gave [Mary] [the book].

Ag            Rpt            Th

b. SELL

[John] sold [Mary] [the book].

Ag            Rpt            Th

c. SHOW

[John] showed [Mary] [the book].

Ag                    Rpt    Th

Under this view, the formal realization of the arguments is not relevant to the discussion of ‘ditransitivity’. Indeed, there are many different strategies to encode these arguments across languages. The list in section 3.1.1.1 is modified from Malchukov et al. (2007:8-9), which they have adopted from Margetts & Austin (2007:402-403).

### ***3.1.1.1 Encoding Strategies of Three-Participant Events***

Six encoding strategies of the non-agent arguments of a verb which require an agent, a recipient and a theme are shown below.

### 3.1.1.1.1 *Three-place Predicate (Direct-Argument) Strategy*

The two non-agent arguments do not show any difference in argument-encoding, either in case-marking or agreement.

#### (2) English

John sent [**David**] [**a letter**].

### 3.1.1.1.2 *Oblique Strategies*<sup>1</sup>

One of the arguments (R or T<sup>2</sup>) is encoded as an oblique.

#### (i) R-type oblique

R is encoded differently from P and T (R; P = T).

#### (3) German (Malchukov et al. 2007:4, e.g. 2b)

Ich gab dem Kind den Apfel  
1.Nom gave the.Dat child the.Acc apple  
'I gave the child the apple.'

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<sup>1</sup> All examples are from Malchukov et al. (2007), some of which they have cited from other sources. In these cases, the source is shown next to the name of the language from which the example is drawn.

<sup>2</sup> Following the standard use of terms in the typological literature, P stands for 'Patient', which is assumed to be the unmarked semantic role for the non-agent argument in a monotransitive construction. R is for 'Recipient', while T is for 'Theme'. The T(heme) may be as affected as a patient semantically, but in general, the term only refers to the non-agent, non-recipient argument in a construction in which there are three arguments.

(ii) T-type oblique

T is encoded differently from P and R (T; P = R)

(4) West Greenlandic (Fortescue 1984:89)

(Uma) Niisi aningaasa-nik tuni-vaa  
(that.erg) Nisi money-instr.pl give-ind.3.sg->3.sg<sup>3</sup>  
'He gave Nisi money.'

3.1.1.1.3 *Serial Verb Strategy*

Similar to the oblique strategy, the serial verb strategy can be further divided into an R-type and a T-type (Margetts & Austin 2007).

(i) R-type

A verb like GIVE introduces an R, and a serial verb construction results (Malchukov et al. 2007:10). T is encoded like P, i.e. no marking in the case of Thai.

(5) Thai (Malchukov et al. 2007:10, e.g. 14 ; the authors attribute the example to Natchanan Yaowapat)

song cotmaay **hay** **chan**  
send letter give 3.sg  
'(S/he) sent him a letter.'

(ii) T-type

A T is introduced by a verb like TAKE (Malchukov et al. 2007:10), or USE (Margetts & Austin 2007). While R is also encoded with a verb like GIVE, the

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<sup>3</sup> The notation '->3.sg' is part of the gloss provided by Malchukov et al. (2007). The original gloss for the suffix *-vaa* in Fortescue (1984:89) is '3s-3s-indic.'. This is one of the suffixes in the paradigm which marks the indicative mood, and is a portmanteau morpheme encoding a third person singular subject and a third person singular object (the complete paradigm can be viewed in Fortescue 1984:289).

encoding of T is not the same as P. T is encoded with the verb *só* ‘take’ in this case:

- (6) Fongbe (Lefebvre 1994:3)  
Kòkú **só** **asónó** ná Asíbá  
Koku take crab det give Asiba  
‘Koku gave the crab to Asiba.’

#### *3.1.1.1.4 Incorporation Strategy*

A non-agent argument can be incorporated into the verb. Cross-linguistically, it is almost always the T that is incorporated (Malchukov et al. 2007:33).

- (7) Southern Tiwa (Allen & Frantz 1983:306-7)  
Ti-khwien-**wia**-ban seuanide-‘ay  
1sg.3.sg.R-dog-give-pst man-to  
‘I gave the dog to the man.’

#### *3.1.1.1.5 Adnominal Strategy*

The three semantic roles agent, recipient and theme are expressed by two syntactic arguments, with the third argument being a dependent of one of these arguments (Margetts and Austin 2007:426). This strategy may be of two types.

- (i) Possessive adnominal strategy

The relation between the T and the R is expressed as a kind of possessive relation. T is the head of the nominal and is interpreted as the possessee, while R is its dependent, the possessor. T & R constitute a single syntactic argument.

(8) Tamambo (Jauncy 1997:248, cited in Margetts and Austin 2007:426, e.g. 104)

Mo loli na vanua harama atea no-ni  
3SG make ART house new one Poss.CL-LINK

votambaluhi-na.

wife-3SG.Poss

‘He made his wife’s new house.’

‘He made a new house for his wife.’

(ii) Proprietary adnominal strategy

Many Australian languages have a proprietary case. The nominal with the proprietary case is the possessee, but instead of being the head of the NP expressing the possessor-possessee relation, it is an adnominal modifier of the head noun which is the possessor. Compare the two examples in (9a).

(9) Kayardild

a. Margetts and Austin (2007:428)

(i) dangka-karra wangalk  
man-Gen boomerang.Nom  
‘the man’s boomerang’

(ii) wangalk-uru dangka-a  
boomerang-Prop man-Nom  
‘the man with [having] the boomerang’

The nominal marked with Prop case modifies that marked with Nom case. In a three-participant construction, the Prop-marked nominal, which is the theme, modifies the agent (Margetts and Austin 2007:426). The following example thus literally means ‘He, [ultimately] money-having, deprived his father.’:

b. Evans (1995:420), in Margetts and Austin (2007:429, e.g. 112)

Niya        marndi-jarra    kanthathu-na        wirrin-kuru.  
3sg.Nom    deprive-pst    father- pst.obj        money-Prop  
'He took money off his father.'

#### 3.1.1.1.6 Directional Strategy

This strategy makes use of 'directional markers', which 'obviate the explicit use of a noun phrase for the R' (Malchukov et al. 2007:9)<sup>4</sup>.

(10) English

John sprayed paint **on the wall**.

#### 3.1.1.2 Alignment Patterns of Non-Agent Arguments

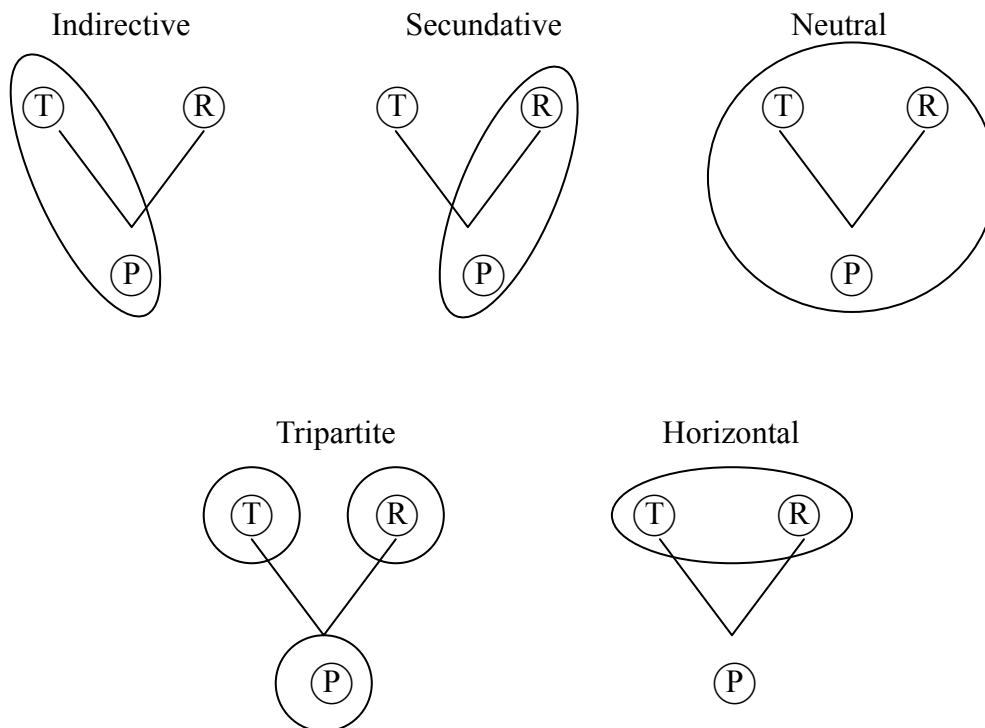
The encoding of the theme argument T and the recipient argument R of a three-place predicate can be compared to that of the P argument of a two-place predicate, i.e. the monotransitive patient/ theme. Five possible alignment patterns emerge, which are shown in the following<sup>5</sup>:

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<sup>4</sup> It is not clear why verbs like *spray* and *load* in English are assumed to take an R(ecipient) argument, the presence of which is crucial to Malchukov et al. (2007:1)'s definition of a 'ditransitive construction'. *The wall* in this example seems more like a locative, but not a recipient. We will not be too concerned about this, as this is not central to the discussion in the following sections.

<sup>5</sup> These alignment patterns are based on the encoding of the P, T and R arguments only. Malchukov et al. 2007 make a clear distinction between encoding properties and behavioural properties.

(11) Ditransitive alignment maps (Malchukov et al. 2007:4, 6, Figs. 1, 3)



Under indirective alignment, the theme of a three-place predicate is encoded in the same way as the patient of a monotransitive verb is marked. Secundative alignment is the opposite - the recipient of a three-place predicate and the patient of a monotransitive verb are encoded using the same strategy. The theme and the recipient of a three-place predicate, and the patient of a monotransitive verb do not display any difference in encoding under neutral alignment. Tripartite alignment is the exact opposite of neutral alignment in that each of these three arguments has a distinct encoding. Horizontal alignment marks the theme and the recipient of a three-place predicate in the same way, but encodes the patient of a monotransitive verb differently.

According to Malchukov et al. (2007), only the indirective, secundative, neutral and tripartite patterns are attested. In typology and functional linguistics, it is generally agreed that the encoding of the non-agent arguments in a three-place predicate (and case-marking and indexing more generally) is constrained by considerations of economy and distinguishability (cf. Croft 1988). Based on these considerations, that the indirective, secundative, and neutral patterns are the most common can be accounted for - the theme argument and the recipient argument can be successfully distinguished, while the mechanisms needed to do so are kept at a minimum. In the case of the neutral pattern, which is the most economical pattern, the theme argument and the recipient argument are usually distinguished by means of the relative word order of the two arguments. Consider, however, the case of Cantonese in section 5.1.

Tripartite alignment has been reported to be rarer than the three patterns discussed above, as encoding the three types of arguments in three distinct ways is uneconomical. Malchukov et al. (2007:14, e.g. 26) cite the following example in Kayardild as an illustration:

(12) Kayardild (Evans 1995:336)

Maku            dun-maru-tha            wuu-ja            nguku-wuru  
woman.nom   husband-vdat<sup>6</sup>-act   give-act   water-prop

‘A woman gives water to her husband.’

The last type of alignment, horizontal alignment, is not attested. By encoding the theme and the recipient of a three-place predicate with the same mechanism, this type of alignment fails to distinguish the two non-agent arguments. How the patient is marked in a monotransitive construction is irrelevant - it never appears in the same construction with the theme or the recipient.

We shall consider a different but related definition of the term ‘ditransitivity’ in the next section.

### 3.1.2 Syntactic Ditransitivity

Following Kittilä (2006), among others, we will make a clear distinction between what we have labelled ‘syntactic ditransitivity’ and ‘semantic ditransitivity’. A verb or a predicate is syntactically ditransitive if and only if it is possible for the verb or the predicate to co-occur with two objects, i.e. to appear in a double object construction (DOC). A predicate which subcategorizes for an agent, a recipient and

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<sup>6</sup> Vdat is the abbreviation for ‘verbal dative’, which is one of the ‘verbal cases’ in Kayardild (Evans 1995:163; Keen 1983). Verbal cases are morphologically verbal affixes attached to nominals, and show agreement in terms of tense, mood and polarity with the verb. The form of the verbal case ‘verbal dative’ is *-marutha*, and has a corresponding free form *marutha* ‘put’ (Evans 1995:165). It is one of the ways to encode the recipient argument of a ditransitive verb, the destination of a transitive motion verb, and the only way to encode a beneficiary argument (Evans 1995:169).

a theme is trivalent, but not all trivalent predicates are ditransitive. For instance, in the case of the dative alternation in English where the same argument structure with an agent, a recipient and a theme can be realized by either a double object structure [V NP NP] or a prepositional dative structure [V NP PP], both of the structures are trivalent, but according to our definition of (syntactic) ditransitivity, only the double object structure is a ditransitive construction. The prepositional dative structure in which the recipient argument is realized by an oblique PP is not a ditransitive construction. Thus, only one of the two patterns in a dative alternation is truly ditransitive. We will return to a discussion of the dative alternation in section 3.1.3.

In the remainder of this dissertation, we will reserve the term ‘ditransitivity’ for *syntactic* ditransitivity. If it is necessary to refer to the notion of semantic ditransitivity, i.e. trivalence, either the term ‘semantic ditransitivity’ or ‘trivalence’ will be used.

Having defined ‘syntactic transitivity’, we aim to provide a working definition of a ‘double object construction (DOC)’.

In some accounts, the encoding of the non-subject arguments has an important role to play in the determination of whether an argument is an object or not. If the argument has the same encoding as the monotransitive object, then it is also considered an object. In the strictest sense, there will only be a DOC if both

non-subject arguments are encoded in the same way as the monotransitive object, i.e. when the monotransitive patient, the recipient and the theme display neutral alignment (11) (cf. Malchukov et al. 2007).

Under this definition, the number of languages that would have DOCs would be surprisingly small. It is quite common for languages to encode the objects in a DOC differently by means of case-marking and/ or agreement. Argument encoding is, at best, a (not very reliable) means to signal grammatical functions, which should be identified syntactically.

In order to formulate a working definition, we assume that, at the level of constituent structure, a DOC is a construction in which a verb may co-occur with two NP objects other than the subject NP. Whether and how they are case-marked and/ or indexed on the verb may be suggestive of their status as a particular grammatical function, but this is not a defining criterion. Formulating this definition in constituent-structure terms is perhaps not ideal, but facts at this level are the most readily identifiable when working with data. This definition establishes an inherent link between ditransitivity and DOCs - a DOC is only possible if the verb is ditransitive.

Ditransitivity can be derived. In some languages where applicativization is allowed, for example, a monotransitive verb can be made ditransitive by having an

applicative morpheme affixed to the verb. We make a distinction between ‘inherent ditransitivity’ and ‘derived ditransitivity’. An inherently ditransitive verb subcategorizes for two objects in its most basic form without any additional verbal morphology. Both of the objects are licensed by the verb root. For a derived ditransitive verb, on the other hand, only one of the objects is licensed by the monotransitive verb root. The other object is licensed by an applicative morpheme that is affixed to the verb root. We shall return to applicative constructions in chapter 6, when we investigate the syntax of double and multiple object constructions in the Bantu language Chichewa.

In the next section, we will move on to a different topic which figures prominently in the literature on DOCs - the dative alternation.

### **3.1.3 The Dative Alternation**

An ‘alternation’ refers to a case in which a situation can be described by more than one semantically (in terms of truth value) equivalent construction (O’Connor et al. 2007). A dative alternation is a type of alternation, and refers to a pair of sentences such as the pair shown below:

- (13) a. John gave Bill the book.  
b. John gave the book to Bill.

In alternant (13a), the verb *give* is followed by two NP arguments, with the immediately following NP object *Bill* bearing the recipient role and the phrase-final NP object *the book* bearing the theme role. In (13b), the verb *give* is also followed by two arguments, but here, the recipient argument is realized by a PP oblique while the theme argument is expressed as an NP object. Despite the differences in structural realization, the two alternants express very similar propositions and the same argument structure:

- (14) a. Structural expression of non-agent arguments in (13a) - the double object construction

give < Ag, Rpt, Th >  
           |     |  
           NP  NP

- b. Structural expression of non-agent arguments in (13b) - the prepositional dative

give < Ag, Rpt, Th >  
           |     |  
           PP  NP

Since both of the structures in (13) realize the same argument structure in which there is an agent, a recipient and a theme, both of the alternants would be considered ‘ditransitive’ according to Malchukov et al.’s (2007) definition of the term ‘ditransitivity’, i.e. what we have termed ‘semantic ditransitivity’.

The dative alternation is cross-linguistically uncommon. Malchukov et al. (2007:13), citing a study conducted by Siewierska (1998:179), report that this type

of alternation is only found in about 6% of the world's languages. To be precise, the dative alternation is found in 12 out of 219 languages in Siewierska's sample of languages.

As is well known, English is a language which has the dative alternation. In fact, the research that has been conducted on the dative alternation largely centres around the phenomenon in this language, e.g. Arnold et al. 2000; Arnold et al. 2004; Bresnan and Hay 2008; Bresnan and Nikitina 2003; Bresnan et al. 2007; Hawkins 1994; and Wasow 2002 among many others. It is generally agreed in the literature that the meanings expressed by the structures that alternate in the dative alternation in English are very similar, but there are some slight differences. Bresnan and Hay (2008:247), for example, posit that 'prepositional dative and double object constructions [have] overlapping meanings which permit them to be used as alternative expressions or paraphrases'. They give the following example in support of their view:

(15) Example from Graham Green. *Doctor Fischer of Geneva or the Bomb Party*. London: The Bodley Head; cited by Davidse (1996:291) and in Bresnan and Hay (2008:247):

'You don't know how difficult it is to find something which will please everybody - especially the men.'

'Why not just **give them cheques?**' I asked.

'You can't **give cheques to people**. It would be insulting.'

Since both types of structure occur in the same discourse and in parallel, they must be ‘very close paraphrases’<sup>7</sup>.

The choice of one structure over the other is constrained by a number of factors. Some of the most frequently discussed ones include (i) the speaker’s perception of the event; (ii) pronominality of the recipient and the theme, (iii) the relative weight of the the recipient and the theme, and (iv) the givenness/ informational status of the the recipient and the theme. These factors are surveyed in the following sections.

### *3.1.3.1 Speaker’s Perception of Event*

A factor that has long been recognized as affecting the choice of one structure over the other in the dative alternation is the speaker’s perception of the event expressed. The contrast is between a ‘caused possession’ meaning and a ‘caused motion’ meaning. If it is perceived that the agent has caused the theme to change from being in its own possession to being in the recipient’s possession, the double object structure [V NP NP] is preferred. If, however, the agent has caused the theme to move from its location to the recipient’s location, the prepositional dative structure [V NP PP] is favoured. This is summarized in Rappaport Hovav and Levin (2008:130), citing Pinker 1989 and Krifka 1999:263):

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<sup>7</sup> Bresnan and Hay (2008:247) acknowledge the fact that the differences between the two are very subtle, and judgments on such differences are often ‘inconsistent and unreliable’.

- (16) a. *to* variant: NP0 CAUSES NP2 TO GO TO NP1  
b. Double object variant: NP0 CAUSES NP1 TO HAVE NP2

‘NP0’ refers to the agent argument, ‘NP1’ the recipient, and ‘NP2’ the theme.

Here are two examples with the verb *send*:

- (17) a. The double object structure, with the associated meaning of caused possession  
John sent David the letter.  
b. The prepositional dative structure, with the associated meaning of caused motion  
John sent the letter to David.

It should be noted that this is only a very general and simplified discussion of the view that a distinct structure is associated with a slightly different meaning in a clear-cut manner. See Rappaport Hovav and Levin (2008) for a critique of this view, and for arguments for the meaning of individual verbs playing a part in the choice of structure.

### *3.1.3.2 Pronominality of Recipient and Theme*

The nominal status of the NP that realizes the recipient or the theme has a direct bearing on the choice of structure. If one of the arguments is realized as a pronoun, it is much more likely for the pronominal argument, regardless of its semantic role, to immediately follow the verb. In other words, if the pronominal NP bears the recipient role, the DOC is preferred. If it has the theme role, it is more

likely for the prepositional dative to be selected.

There are also cases in which both arguments are expressed as pronouns. In such cases, the prepositional dative is much more preferred. There is a strong dispreference for two pronouns to be adjacent to each other. Compare the following examples:

- (18) a. ?She gave him it.  
b. She gave it to him.

There is at least one case in which two non-subject pronouns can co-occur with a ditransitive verb in a DOC. In Lancashire English, the example in (18a) is perfectly acceptable (Siewierska and Hollman 2007:8, e.g. 16). In fact, an even more unexpected DOC, with the recipient and the theme arguments switching positions, is also acceptable (19b):

- (19) The co-occurrence of a pronominal theme and a pronominal recipient in Lancashire English (Siewierska and Hollman 2007:8, e.g. 16, 17)  
a. [Repeating (18a)]  
She gave him it.  
b. She gave it him<sup>8</sup>.

We shall see more of this type of structure in Lancashire English in chapter 5.

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<sup>8</sup> In this variety of English, having the theme before the recipient is also possible when both arguments are realized by full NPs (Siewierska and Hollman 2007:5, e.g. 5, citing Hughes and Trudgill 1996:16) :  
(i) She gave a book the man.

### *3.1.3.3 Relative Weight of Recipient and Theme*

The weight of the recipient and the theme also has a role to play in the choice of structure in the dative alternation. There is a strong tendency for longer and ‘heavier’ constituents to follow shorter and ‘lighter’ ones (e.g. Arnold et al. 2004, Hawkins 1994, Wasow 1997. Also cf. the ‘principle of end weight’ in Behaghel 1909, cited in Wasow 2002). It should be pointed out that it is the relative weight of the two arguments that is crucial. The absolute weight has been shown to be relatively less important (Hawkins 1994, Wasow 1997).

There are a number of ways to measure syntactic weight (see Wasow 2002 for a list of these measures and a thorough discussion of each). The most commonly adopted measure is the number of words in, or the length of, the constituent that realizes the theme or the recipient argument (e.g. Arnold et al. 2004, Bresnan and Hay 2008). Since absolute weight is not the most important factor in the choice of structure in the dative alternation, objectively and consistently quantifying the length of the recipient and the theme by measuring the actual number of words in each and then comparing the numbers serves the purpose.

Depending on the relative weight of the recipient and the theme, one of the alternants is preferred to the other. If the recipient is shorter and ‘lighter’ than the theme, the DOC is preferred. The prepositional dative is the preferred structure if

the theme is shorter and 'lighter'. For illustration, consider the following examples

where the contrast in syntactic weight is obvious:

- (20) a. The recipient is 'heavier' than the theme:-
- (i) in the prepositional dative structure:  
She gave the book to the man who is wearing a blue shirt and is standing by the door.
  - (ii) in a DOC:  
?She gave the man who is wearing a blue shirt and is standing by the door the book.
- b. The theme is 'heavier' than the recipient:-
- (i) in the prepositional dative structure:  
She showed the book that she had been working on for ages to the man.
  - (ii) in a DOC:  
She showed the man the book that she had been working on for ages.

Example (20ai) is the more preferred structure when compared to (20aii). The contrast in judgment is perhaps not as clear in the pair of examples in (20b). But that a structure like (20bii) is more likely given the relative syntactic weight of the two arguments is supported by statistical analyses in, for example, Arnold et al. (2004), Bresnan (2007), Bresnan et al. (2007) and Bresnan and Hay (2008).

#### *3.1.3.4 Informational Status of Recipient and Theme*

The term 'informational status' (cf. 'discourse accessibility' in Bresnan and Hay 2007) is related to the givenness or newness of an argument. In English, the word order of which is SVO, there is a strong tendency for old or given information

to precede new or non-given information.

The relative informational status of the recipient and the theme, therefore, has an effect on the choice of a particular structure in the dative alternation. A given theme and a non-given recipient favours the prepositional dative, but with a given recipient and a non-given theme, both structures seem to be as likely:

- (21) a. A given theme and a non-given recipient
- (i) A DOC  
?There was a book and a magazine on the table, and she gave a man the book.
  - (ii) A prepositional dative  
There was a book and a magazine on the table, and she gave the book to a man.
- b. A given recipient and a non-given theme
- (i) A DOC  
A man and a woman walked in, and she gave the man a book.
  - (ii) A prepositional dative  
A man and a woman walked in, and she gave a book to the man.

#### *3.1.3.5 Joint Effect of Tendencies*

In the previous sections, the effect of (i) the speaker's perception of the event; (ii) pronominality; (iii) the relative weight; and (iv) the givenness/ informational status of the non-subject arguments, i.e. the recipient and the theme, on the preference of the DOC or the prepositional dative in the dative alternation has been individually discussed. There are some points that are worth mentioning regarding these tendencies.

First, it is quite often the case that the tendencies correlate with each other. The effect of the correlation can perhaps be most easily demonstrated in the case of pronouns. A pronoun, by virtue of being a pronoun, is ‘light’ and short and is given. A pronoun cannot be used if its reference is not recoverable from previous discourse or the context. Thus, while each tendency, when viewed individually, does have some effect on the choice of an alternant, the joint effect of these tendencies to the overall choice of an alternant is not to be ignored (see e.g. Bresnan et al. 2007, Bresnan and Hay 2008 for two carefully controlled studies on the effect of ‘multiple variables’<sup>9</sup>).

Second, the variables discussed above are *tendencies*. The acceptability of (20ai), in which a heavier theme is followed by a recipient, and (21bii), in which a non-given theme is followed by a given recipient, for example, shows that some reportedly dispreferred structures are indeed grammatical. Such structures are in fact permitted by the grammar, but given certain properties of the recipient and the

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<sup>9</sup> Bresnan and Nikitina (2003:23) also acknowledge the effect of more than one variable on dative alternation, and, citing Bresnan et al. 2001 and Dingare 2001, have the following formulation of this effect in terms of a number of optimality-theoretic harmonic alignment constraints (Prince and Smolensky 1993; Aissen 1999, 2003):

(i) Double-Object Primacy (OO-Primacy)

When both are objects, the receiver/possessor (strictly) dominates the entity on hierarchies of informational prominence, and the entity (strictly) dominates the receiver/possessor on the reversed hierarchies:

Given > Accessible > New  
Definite > Indefinite  
Shorter > Longer  
Pronoun > Noun

theme, the occurrence of one alternant is *more likely* than the other. Under the right circumstances, the dispreferred structure may become the preferred structure. For example, the less preferred alternant may be selected for stylistic reasons, or to avoid potential ambiguity (Arnold et al. 2004).

We leave our discussion of the dative alternation at this point, and consider the ditransitive verb GIVE and its unique relation to DOCS in the next section.

### **3.1.4 GIVE - the Prototypical Ditransitive Verb?**

It is not uncommon to find as illustrations or even definitions of a ditransitive verb/ construction ‘a verb like GIVE’ or ‘a construction like the GIVE-construction’. The verb GIVE, or the corresponding ditransitive GIVE-construction, however, may not be as prototypical as one might think. The issue of prototypicality can be viewed from two perspectives (Kittilä 2006) - across languages and within the same language.

Cross-linguistically, GIVE is perhaps the most representative ditransitive verb. In many languages, ditransitive verbs constitute a closed class and the number of members in this class is usually quite small. In a number of languages, there is only one member in the class of ditransitives and this member is invariably GIVE<sup>10</sup>.

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<sup>10</sup> Examples of these languages include Maltese, Walmatjari, Djaru, Waray, Chukchi, Swahili, Kiha, Amele, Southeastern Tepehuan, Koyra Chiini, Supyire, Malay, Kanuri, Tiwi, Imonda,

Kittilä (2006:604) states this as a universal:

(22) If a language has only one ditransitive trivalent verb [...], then that verb is ‘give’.

Within a single language, it is quite often the case that GIVE is the only ditransitive verb that behaves exceptionally. Kittilä (2006) has conducted an extensive survey of a large number of typologically unrelated languages and finds that the verb GIVE is often distinct from other ditransitive verbs (if there are any) in the same language. The arguments of GIVE may have a pattern of encoding which is unique to the arguments of this particular verb, but this pattern is not possible with other ditransitive verbs. In languages where the dative alternation is allowed, GIVE may be the only verb, or is among the class of verbs, that may participate in dative alternation and appear in a double object construction.

Kittilä (2006) also suggests that the passivization pattern of the arguments in a GIVE-construction in a very small number of languages is different from that of other ditransitive constructions. One example that he gives is the GIVE-construction in Maltese (Borg and Comrie 1984):

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Pitjantjatjara, and Tigrinya (Kittilä 2006:604). Our data suggest that Chichewa is also in this list (see chapter 6).

(23) Maltese

- a. The GIVE-construction in the active form (Borg and Comrie 1984:117, e.g. 29)

Marija ta-t l-ittra lil Pawla<sup>11</sup>  
Mary gave-she the-letter to Paul  
'Mary gave the letter to Paul.'

- b. The theme argument becoming the subject of the passive sentence (Borg and Comrie 1984:118, e.g. 35)

L-ittra n-ghata-t lil Pawlu  
the-letter gave-pass-she to Paul  
'The letter was given to Paul.'

- c. The recipient argument becoming the subject of the passive sentence (Borg and Comrie 1984:118, e.g. 36)

Pawlu n-ghata l-ittra  
Paul gave- pass -he the-letter  
'The letter was given to Paul.'

In the GIVE-construction in Maltese, either the theme or the recipient argument can become the subject of the corresponding passive sentence. The only other verb in the language that also displays this pattern is *wera* 'show' (Borg and Comrie 1984:118). For all other ditransitive verbs, only the theme argument, but not the recipient argument, can be passivized:

(24) Maltese

- a. The TEACH-construction in the active form (Borg and Comrie 1984:121, e.g. 46)

Għallem l-ilsien Ingliz lil bniet u subien  
taught-he the-language English to girls and boys  
'He taught English to girls and boys.'

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<sup>11</sup> The form *lil*, which is glossed as 'to', is treated as a case marker for recipient arguments in this language (Borg and Comrie 1984:116). The construction would therefore be considered a ditransitive one. This seems to be the position that Kittilä (2006:583-585) adopts too.

- b. The theme argument becoming the subject of the passive sentence (Borg and Comrie 1984: 121, e.g. 52)

l-ilsien          Ingliz    in-t-ḡhallem    lil bniet    u    subien  
 the-language   English   teach. pass    to boys    and   girls  
 ‘The English language was taught to girls and boys.’

- c. The recipient argument becoming the subject of the passive sentence (Borg and Comrie 1984: 121, e.g. 53)

\*Il-bniet    u    subien    in-t-ḡhallem-u    l-ilsien          Ingliz  
 boys          and   girls    teach. pass-them   the-language   English

(To mean ‘The boys and girls were taught English.’)

The examples in (23) and (24), when considered together, are in fact quite puzzling. The passivization facts in (24) and the marking of recipient arguments by *lil* ‘to’ in general seem to suggest that the GIVE- and the TEACH-constructions in this language are in fact not ditransitive constructions. If we assume that the verb *ḡhallem* ‘teach’ is monotransitive and subcategorizes for an object and an oblique which is marked by the preposition *lil* ‘to’, that the *lil*-marked oblique which bears the recipient role cannot become the subject of the corresponding passive can be easily accounted for (24)<sup>12</sup>.

But even on this account, the observations on the passivization of the arguments in the GIVE-construction in (23) cannot be explained. Whatever grammatical function the *lil*-marked recipient has, i.e. in LFG terms, whether it is considered an oblique or a restricted object, the prediction is that it cannot become

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<sup>12</sup> Borg and Comrie (1984) use the more traditional terms ‘direct object’ and ‘indirect object’ instead.

the subject of the passive. Some languages do allow symmetric objects, where either of the objects in a ditransitive construction may be passivized and displays other object characteristics such as object agreement, but whether a language has symmetric objects or not is subject to parametric, cross-linguistic variation (cf. Bresnan and Moshi 1990). The data in Maltese, interestingly, seem to suggest that such a variation may be language-internal. Due to the lack of sufficient data, we will leave this issue for future research.

Returning to the anomalous status of GIVE in many languages, in terms of the morphology of the verb, in languages where applicativization is possible or is a productive process, GIVE is always a verb or even the only verb whose ditransitivity is not derived (via the affixation of an applicative morpheme for instance). The underived verb root of GIVE is ditransitive, while for many other verbs, the verb becomes ditransitive by means of verbal morphology (Kittilä 2006). Chichewa is a case in point. See section 6.3 for more details.

The verb GIVE is, at the same time, both a prototypical and anomalous ditransitive verb. It is prototypical in that, across languages, it is almost always an inherently ditransitive verb. In many languages, it may even be the only (underived) ditransitive verb - if a language has just one ditransitive verb, it is GIVE. Within a language, however, GIVE is very often syntactically and morphologically

anomalous. In this sense, the verb GIVE is the least prototypical or the only member in the class of ditransitive verbs. We shall return to the anomalous behaviour of GIVE in chapter 5, in which the syntax of the GIVE-construction in Cantonese is investigated in detail. We end this section with a quotation from Borg and Comrie (1984:123), which serves as a reminder to any researcher interested in the syntax of ditransitive verbs and double object constructions:

‘[I]n starting to investigate the syntax of a language, the almost inevitable choice for an illustrative ditransitive verb is “give”. However, in many languages, including Maltese, “give” is syntactically a very atypical ditransitive verb. [...] [T]his does demonstrate that more care needs to be taken in the choice of the most typical ditransitive verb, selection of “give” always requiring cross-checking with a variety of other verbs of similar valency’.

### **3.1.5 Section Summary**

In this section, we have considered the notion of ditransitivity and its relation to double object constructions. We have noted that the term ‘ditransitivity’ can be interpreted in a number of ways. For some, the term is synonymous with ‘trivalence’ - any three-place predicate is considered ‘ditransitive’ under this interpretation. This is what we have labelled ‘semantic ditransitivity’ (section 3.1.1).

For us, however, ditransitivity is a strictly syntactic concept (section 3.1.2). A ditransitive verb is a verb that requires two objects. DOCs, therefore, are inherently associated with ditransitive verbs. The coding pattern of the objects is not the most

significant factor in the determination of whether a construction is a DOC or not. Morphological encoding such as case-marking or agreement is not a sufficient criterion for positing which grammatical function an NP is associated with. Furthermore, we do not expect the objects in the DOCs of all languages to have the same encoding as the monotransitive object, i.e. the objects in a DOC and the monotransitive object to display neutral alignment. The two languages whose DOCs we will conduct a detailed analysis of show neutral alignment, but it is only a coincidence that the NPs in Cantonese and Chichewa are neither case-marked nor indexed on the verb.

Section 3.1.3 provides an overview of the dative alternation, which involves the alternative realization of the recipient and the theme in the argument structure < Ag, Rpt, Th > by two structures - a [V NP NP] structure (DOC) and a [V NP PP] (prepositional dative) structure. We have noted that the preference of structure is affected by a number of variables, including the speaker's perception of the event; pronominality, the relative weight and the givenness/ informational status of the recipient and the theme. It has also been noted that these variables often correlate, and that their effect on the dative alternation is very often a joint effort.

In section 3.1.4, we have shown that the most frequently used example of a ditransitive verb in any language in the literature, GIVE, is in fact not that

prototypical. Cross-linguistically, it may be a nice representative of ditransitive verbs, as all languages which have ditransitive verbs would have GIVE on the list. In many languages, however, the verb GIVE and the GIVE-construction show a number of language-internal anomalies. Generalizations about ditransitive verbs and DOCs in a language that are formulated based on the morphology and syntax of the GIVE or the GIVE-construction alone may not be reliable.

Having had an overview of the notions of ‘ditransitivity’ and ‘double object constructions’, we shall move on to the syntax of the two objects in DOCs in the next section. In particular, we are interested in distinguishing the objects. With more than one object-like grammatical function in the construction, which one is *the* object?

### **3.2 THE Object and the ‘Other’ Object**

In constructions where there is more than one object, it is important to have some criteria that will distinguish the objects from one another such that generalizations can be made about the different objects. It has long been observed in the literature that not all of them behave in identical ways morphologically and syntactically. Such contrasts in grammatical behaviour have often been employed to distinguish the objects.

This section focuses on the diagnostics which are commonly used to identify the grammatical (or functional) status of the objects in cases where there is more than one object. Objects may be distinguished based on three types of diagnostics - (i) the semantic roles of objects (section 3.2.1); (ii) the morphological properties of objects (section 3.2.4); and, (iii) the syntactic behaviour of objects (section 3.2.5).

We will also discuss the terms ‘direct object’ and ‘indirect object’ (section 3.2.2), and the terms ‘primary object’ and ‘secondary object’ (Dryer 1986) (section 3.2.3).

### **3.2.1 Semantic Role of Objects**

In much descriptive work, the contrast between the objects in a DOC is made on the basis of semantic roles. The objects invariably bear different semantic roles, usually one with a theme role and the other a recipient role.

This seems to be the approach that is also adopted in Relational Grammar (e.g. Perlmutter 1980) and transformational approaches to syntax (e.g. Larson 1988, Adger 2004 among others). In transformational approaches, grammatical functions are defined configurationally, i.e. as being in particular positions on a syntactic tree. Because of a theory-internal assumption, the Uniformity in Theta Assignment Hypothesis (UTAH) (Baker 1985), a theta (semantic) role can only be assigned to a

position on the tree which is in a certain configuration with the predicator, which assigns theta roles. Grammatical functions are also defined in a similar fashion, and are associated with specific positions on the tree. In other words, a link between a grammatical function and a theta role is established by being associated with a particular position on the tree at the same time.

### **3.2.2 Direct Objects and Indirect Objects**

The notions of ‘direct objecthood’ and ‘indirect objecthood’ are indispensably associated with semantic roles. These labels, which are commonly found in more traditional studies, in the typological literature and also in the literature on transformational approaches to syntax, are linked to a specific semantic role that a participant has in an event. Very generally, the direct object is understood to be the entity whose possession (e.g. as in the case of the verb GIVE) or physical location (e.g. as in the case of the verbs SEND and PASS) undergoes change, i.e. the theme. The indirect object, on the other hand, is the entity that, in some way, receives the theme, i.e. the recipient.

Since the object in a monotransitive construction very often bears the theme role, the object in a ditransitive construction which has the same semantic role as the monotransitive object is considered the ‘direct’ object. The other object is the

‘indirect’ object. Other than having the same semantic roles, the direct object in a monotransitive construction and in a ditransitive one may not have much in common. In English, for instance, the object that is considered the direct object in a ditransitive construction does not behave like the monotransitive object. It is neither the object that becomes the subject under passivization, i.e. it cannot be passivized as the unacceptability (in most varieties of English) of *\*The book was given John* shows; nor is it the object that is adjacent to the verb in the canonical word order, as the unacceptability of *\*John gave the book Mary* indicates.

The terms ‘direct object’ and ‘indirect object’, the characterization of which depends solely on semantic roles, cannot successfully capture the fact that, in many languages, it is indeed the indirect object that shares more grammatical properties with the monotransitive object. It is for this reason precisely that Dryer (1986) proposes the terms ‘primary objects’ and ‘secondary objects’<sup>13</sup>.

### **3.2.3 Primary Objects and Secondary Objects**

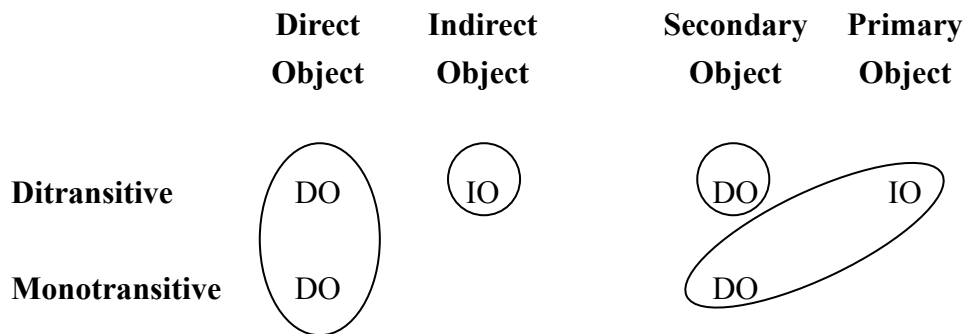
The distinction between primary and secondary objects is not the same as that between direct and indirect objects, although in the original formulation of the terms

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<sup>13</sup> A distinction that is very similar to the primary and secondary object distinction discussed here is also found in LFG. In Kaplan and Bresnan (1982), the more monotransitive object-like object is OBJ, while the other object is OBJ2. Refer to chapter 4 for a detailed discussion on the object functions in LFG.

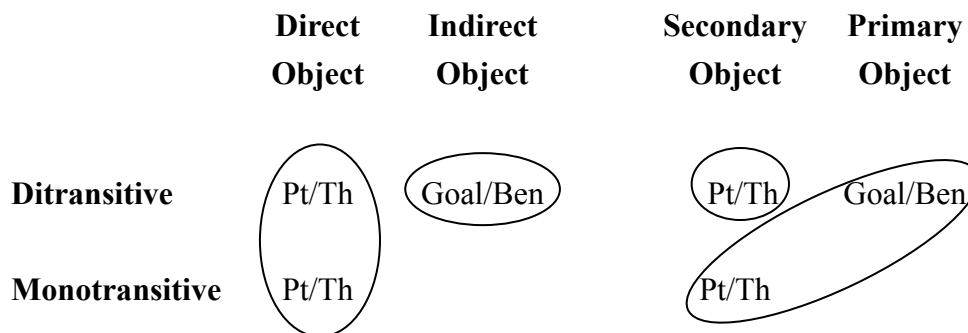
‘primary object’ and ‘secondary object’ by Dryer (1986), the contrast between primary and secondary objects bears a relation to that between direct and indirect objects:

(25) Direct object, indirect object, primary object and secondary object (Dryer 1986:814, Figure 1b)



The abbreviation DO (direct object) is in fact another name for the patient/theme role, while IO (indirect object) is equivalent to the goal/ beneficiary role (Dryer 1986:811). These labels are considered ‘theory-neutral’. The figure in (25) can, therefore, be reinterpreted as the following:

(26) A re-interpretation of (25) in terms of semantic roles



According to Dryer (1986), a language has a 'primary object' in its inventory of grammatical functions if its monotransitive object, i.e. the 'monotransitive DO', patterns with the object which bears the goal/ beneficiary role in a ditransitive construction, i.e. the 'ditransitive IO'. The monotransitive object and the goal/ beneficiary-object in the ditransitive construction is the primary object. The other object in the ditransitive construction, the one which bears the patient/theme role, is the secondary object. Languages whose goal/beneficiary-object in a ditransitive construction patterns with the monotransitive object are 'primary object languages' (Dryer 1986:815).

In other languages, the distinction between 'primary object' and 'secondary object' (in Dryer's original sense of the terms) may not hold, and as grammatical relations, these are not available in their inventory of grammatical functions. In these languages, the monotransitive object patterns with the patient/ theme-object in a ditransitive construction, but not with the goal/ beneficiary-object. There is thus a grammatical relation called the 'direct object' which uniformly bears the patient/theme role, regardless of the type of construction that it is in. The 'indirect object', again, is the object in a ditransitive construction which has the goal/beneficiary role. Such languages are considered 'direct object languages' (Dryer 1986:815).

If we consider the figure in (26) again, which is a re-interpretation of Dryer's original figure in (25), the distinction between 'primary and secondary objects' and 'direct and indirect objects' seems unnecessary. This distinction is essentially one that concerns the patterning of monotransitive and ditransitive objects. In one type of alignment, e.g. in Dryer's 'direct object languages', the monotransitive object patterns with the ditransitive object which bears the theme role. This is an indirective alignment of objects (Malchukov et al. 2007). In the other type of alignment, e.g. in Dryer's 'primary object languages', the monotransitive object patterns with the ditransitive object which has the goal/ beneficiary role. This is a secundative alignment of objects (Malchukov et al. 2007).

Dryer's two distinctive types of languages, which are said to be sensitive to two different sets of grammatical (object) distinctions, e.g. the distinction between 'primary object' and 'secondary object' in one type, and the distinction between 'direct object' and 'indirect object' in the other, are, therefore, essentially languages which display two different types of alignment of objects. In fact, in all of these languages, there is only one uniform set of grammatical (object) relations – a primary object and a secondary object. In a monotransitive construction, the primary object is always the only object available. The semantic role that is the most commonly associated with this object is the patient/ theme role. In a ditransitive

construction, however, either the patient/ theme role or the goal/ beneficiary/ recipient role may be associated with the primary object. The object which behaves like the monotransitive object (in morphology and syntax) is considered the primary object, while the one that shows different behaviour is the secondary object. This shall be our interpretation of the terms ‘primary object’ and ‘secondary object’ from this point onwards.

Clearly separating semantic roles from grammatical relations makes it possible to preserve the uniformity of the inventory of grammatical relations across languages – the distinction between a ‘direct object’ and an ‘indirect object’ is not a distinction in grammatical relations. It is not even a syntactic distinction. The contrast is based on semantic roles. The distinction between a primary object and a secondary object, on the other hand, is a truly grammatical one<sup>14</sup>.

Distinguishing the primary object and the secondary object relies on comparing the morphological and syntactic behaviour of the objects in a ditransitive construction to that of the monotransitive object. Sharing the same semantic role with the monotransitive object is only suggestive of the primary/ secondary status of

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<sup>14</sup> Dryer (1986:835) does make a suggestion that the relations ‘primary object’ and ‘secondary object’ should perhaps not be defined in terms of the other object relations ‘direct object’ and ‘secondary object’, but should be viewed ‘as primitive notions on a par with D[irect] O[bject] and I[ndirect] O[bject]’. He, however, believes that these four primitive relations should be related by a principle, which he terms ‘the P[rimary] O[bject]/ S[econdary] O[bject] Principle’ (Dryer 1986:836, e.g. 14), rather than not treating the notions ‘direct object’ and ‘indirect object’ as grammatical relations as we suggest here.

the objects in a ditransitive construction. We will consider the most commonly adopted morphological and syntactic diagnostics of primary and secondary objects in the literature in the next two sections.

### **3.2.4 Morphological Diagnostics of Primary and Secondary Objects**

This section investigates the morphological diagnostics of the objects in a ditransitive construction. We consider the case-marking properties of these objects in section 3.2.4.1, and then the agreement of objects on the verb in section 3.2.4.2.

#### **3.2.4.1 Case-marking**

In languages where there is case-marking, of the two objects in a ditransitive construction, the one that is encoded in the same way as the monotransitive object by having the same case marker is considered the primary object. Consider the following:

(27) Khasi (Rabel 1961:77, cited in Dryer 1986:816, e.g. 18, 19)

a. ka la yo<sup>ʔii</sup> ya <sup>ʔ</sup>uu khlaa  
she past see obj the tiger  
'She saw the tiger.'

b. <sup>ʔ</sup>uu hiikay ya ŋa ka ktien phareŋ  
he teach obj 1.sg the language English  
'He teaches me English.'

- c. <sup>?</sup>uu hiikay ya ka ktien phareŋ  
 he teach obj the language English  
 ‘He teaches English.’

In the Khasi example in (27a), the case marker *ya* precedes the monotransitive object and is glossed as an object marker. In the ditransitive construction in (27b), the case marker *ya* precedes the recipient argument. The theme argument, however, is not marked by *ya* or any other case marker. Since the object that expresses the recipient argument *ŋa* ‘me’ has the same case-marking as the monotransitive object in (27a), it is the primary object, while the object that is associated with the theme argument *ka ktien phareŋ* ‘the English language’ is the secondary object. This phrase is preceded by the case marker *ya* in (27c), as being the only object available in a construction in which the verb *hiikay* ‘teach’ is used monotransitively, it, too, is the primary object in this example.

#### **3.2.4.2 Agreement/ Indexing**

Agreement, specifically object agreement, can distinguish the objects in a ditransitive construction. Similar to case-marking, the object in a ditransitive construction that is indexed on the verb in the same way the monotransitive object is indexed is the primary object. Here is an illustration:

(28) Huichol (Comrie 1982:99, 108; cited in Dryer 1986:815, e.g. 15)

a. Uukaraawiciizi tiiri me-wa-zeiya  
women children 3pl-3pl-see  
'The women see the children.'

b. Nee uuki ukari ne-wa-puuzeyastia  
I man girls 1sg-3pl-show  
'I showed the man to the girls.'

In the Huichol example in (28a), the verb has two agreement prefixes attached to it. The first is for the subject, while the second is for the object. In this language, there is agreement between the object in a monotransitive construction and the verb.

The example in (28a) is a ditransitive construction, but there are only two agreement prefixes on the verb. The verb agrees with the subject and with one of the two objects only. The third person plural agreement prefix *wa* is for the object that realizes the recipient argument *ukari* 'girls'. Since this object is indexed on the verb like the monotransitive object, it is the primary object. The other object *uuki* 'man' is the secondary object, as there is no agreement between this object and the verb, i.e. it is indexed differently than the monotransitive object.

Having considered the morphological diagnostics that distinguish the primary object from the secondary object, the next section presents an overview of the syntactic diagnostics of these objects.

### 3.2.5 Syntactic Diagnostics of Primary and Secondary Objects

This section gives an overview of the syntactic properties of primary and secondary objects. In particular, we show how such properties are employed to distinguish the different types of objects. As with the application of morphological diagnostics, the object in a ditransitive construction that patterns syntactically with the monotransitive object is the primary object, while the one that behaves differently is the secondary object.

It should be noted that the syntactic diagnostics presented in this section are by no means an exhaustive list. Among the many diagnostics that can be found in the literature, only the three most common, and perhaps the most easily and frequently applied ones across languages, are included. These are (i) passivization (section 3.2.5.1); (ii) relativization (section 3.2.5.2); and (iii) question formation (section 3.2.5.3)<sup>15</sup>.

#### 3.2.5.1 *Passivization*

Passivization is perhaps the most frequently adopted diagnostic for the grammatical function ‘object’ in general. It is also a very useful diagnostic in

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<sup>15</sup> See Malchukov et al. (2007), for instance, for a more comprehensive list of syntactic diagnostics of the non-subject arguments of three-place (semantically ditransitive) predicates. They do not, however, make reference to the terms ‘primary object’ and ‘secondary object’, and the non-subject arguments are not necessarily expressed as objects.

distinguishing the primary object from the secondary object. The object that can become the subject of the corresponding passive construction is the primary object, while the one that cannot is the secondary object. Consider the following example in English:

(29) English

- a. John published a book.
- b. A book was published.
- c. John gave David a book.
- d. David was given a book.
- e. \*A book was given David.<sup>16</sup>

Example (29b) is the passive of (29a). In (29b), the monotransitive object in (29a) *the book* has become the subject. Examples (29d) and (29e) show that, in a ditransitive construction in English (29c), only the object that expresses the recipient argument *David*, but not the one that realizes the theme argument *a book*, can be passivized like the monotransitive object. *David* is therefore the primary object, while *a book* is the secondary object.

Across languages, other types of passivization patterns have been observed. One of these is the possibility for either of the objects to be passivized. In such cases, the objects are said to be symmetric (Bresnan and Moshi 1990; see also chapter 4 for more discussion on symmetric and asymmetric objects). The result is

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<sup>16</sup> This construction is ungrammatical for speakers of most varieties of English. However, as mentioned earlier, in some varieties of British English, the pattern is attested (Siewierska and Hollman 2007:5, e.g. 5, citing Goldberg 1992:71, fn. 4).

that, in these languages, more than one passive construction corresponds to a given ditransitive construction. A case in point is Kinyarwanda:

(30) Kinyarwanda (Kimenyi 1980:127; cited in Dryer 1986:833, e.g. 66)

- a. Umugabo y-a-haa-ye umugóre igitabo  
man he-past-give-asp woman book  
'The man gave the woman the book.'
- b. Igitabo cy-a-haa-w-e umugóre n'ûmugabo  
book it-past-give-pass-asp woman by-man  
'The book was given to the woman by the man.'
- c. Umugóre y-a-haa-w-e igitabo n'ûmugabo  
woman she-past-give-pass-asp book by-man  
'The woman was given the book by the man.'

Both examples (30b) and (30c) are the passive counterparts of the construction in (30a). In Kinyarwanda, either of the objects in a ditransitive construction may become the subject of the corresponding passive constructions, i.e. be passivized. In (30b), the object which bears the theme role in (30a), *igitabo* 'the book' has become the subject. In (30c), however, it is the object which expresses the recipient argument in (30a), *umugóre* 'the woman', that has become the subject. Since either object in (30a) may be passivized, either may serve as the primary object<sup>17</sup>.

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<sup>17</sup> Dryer (1986:834) only mentions the possibility for either object in a ditransitive construction to be passivized in passing. He has not commented on the primary/ secondary object status of these objects. When mentioning this, the labels 'direct object' and 'indirect object' are still retained by Dryer, for the semantic roles theme and goal/ beneficiary/ recipient respectively.

### 3.2.5.2 *Relativization*

In some languages, the primary object and the secondary object can be distinguished via the distinct strategies that are employed for the relativization of the different object relations on the Keenan and Comrie (1977) Noun Phrase Accessibility Hierarchy:

(31) Accessibility Hierarchy (Keenan and Comrie 1977:66)  
SU > DO > IO > OBL > GEN > OCOMP<sup>18</sup>

According to this hierarchy, the subject (SU) is the most accessible grammatical relation to relativization. The other relations, arranged in decreasing accessibility, are the direct object (DO), the indirect object (IO), the oblique (OBL), the genitive (GEN) and the object of comparison (OCOMP). These are all less accessible than the subject to relativization.

The primary relativization strategy is the strategy used to relativize the subject. This strategy may be shared by other grammatical relations which are less accessible than the subject, provided that it is applied to a ‘continuous segment of the Accessibility Hierarchy’ (this is one of the Hierarchy Constraints; Keenan and Comrie 1977:67). Thus, in a given language, if the application of the primary strategy is extended to the primary object but not to the secondary object, the two

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<sup>18</sup> Keenan and Comrie (1977) use the terms ‘direct object’ (DO) and ‘indirect object’ (IO). From their discussion, it seems that these terms are once again alternative labels for the semantic roles patient/ patient and goal/ beneficiary/ recipient respectively.

objects in a ditransitive construction exhibit different syntactic behaviour with respect to relativization, and this contrast can be used as a means to distinguish them. Cantonese is a case in point:-

(32) a. A monotransitive construction

ngo maai-zo bun syu  
 1.sg buy-perf CL book  
 ‘I have bought a book.’

b. ngo maai go bun syu m gin-zo  
 1.sg buy REL CL book NEG see-perf  
 ‘The book that I bought is missing.’

c. A ditransitive construction

ngo gaau siupangjau zungman  
 1.sg teach children Chinese  
 ‘I teach children Chinese.’

d. Relativization of the theme-object

[ngo gaau go baan siupangjau go di zungman]hou  
 1.sg teach CL group children REL CL Chinese very  
 sam  
 difficult

‘The (kind of) Chinese that I teach that group of children is very difficult.’

e. Relativization of the recipient-object

[ngo gaau **keoi-dei** zungman go baan siupangjau] hou  
 1.sg teach 3-pl Chinese CL group children very  
 cungming  
 smart

‘The group of children to whom I teach Chinese are very smart.’

- f. Relativization of the recipient-object without any resumptive pronoun  
 \*[ngo gaau zungman go baan siupangjau] hou cungming  
 1.sg teach Chinese CL group children very smart

In Cantonese, the primary relativization strategy is the gap strategy. A gap is left in the original position of the argument that is relativized on, and the relative clause is prenominal. The example in (32b) shows that, in a monotransitive construction, the object is relativized with the primary strategy. In a ditransitive construction, the object that realizes the theme role is also relativized using the primary gap strategy, as (32d) shows. The other object, which bears the recipient role, is relativized with a different strategy, the resumptive pronoun strategy (32e). A resumptive pronoun must fill the original position of the recipient-object in the relative clause. Omitting the resumptive pronoun and attempting to relativize the recipient-object by using the gap strategy results in ungrammaticality, as (32f) shows. Since the two objects are relativized with different strategies, they can be successfully distinguished.

Identifying the status of the objects in a ditransitive construction via their relativization patterns works quite well in many languages as long as the primary strategy is applied only to the subject and the DO, but not to the IO on Keenan and Comrie's Accessibility Hierarchy, i.e. one object is relativized with the primary strategy, while the other with a different strategy. This test fails to apply if both objects are relativized in the same way. Consider the following example in Basque:

(33) Basque (Keenan and Comrie 1977:72, e.g. 17)

a. A ditransitive construction with the verb *eman* ‘give’  
gizon-a-k    emakume-a-ri    liburu-a    eman    dio  
man-the-SU    woman-the-IO    book-the    give    has  
‘The man has given the book to the woman.’

b. Relativizing on the subject  
emakume-a-ri    liburu-a    eman    dio-n    gizon-a  
woman-the-IO    book-the    give    has-REL    man-the  
‘the man who has given the book to the woman’

c. Relativizing on the direct object  
gizon-a-k    emakume-a-ri    eman    dio-n    liburu-a  
man-the-SU    woman-the-IO    give    has-REL    book-the  
‘the book that the man has given to the woman’

d. Relativizing on the indirect object  
gizon-a-k    liburu-a    eman    dio-n    emakume-a  
man-the-SU    book-the    give    has-REL    woman-the  
‘the woman that the man has given the book to’

In Basque, the primary strategy is the gap strategy (33b) and the relative clause is prenominal (Keenan and Comrie 1977:72). The relative clause is signalled by the marker *-n* on the verb. The cases on the nominals in the relative clause remain the same. Examples (33c) and (33d) show how the theme-object and the recipient-object are relativized respectively. It can be seen that both objects are relativized using the same gap strategy. As the objects behave in the same way with respect to relativization, it is impossible to identify the primary and secondary objects in this language by considering the relativization pattern of objects alone.

### 3.2.5.3 Question Formation

A third syntactic diagnostic that may distinguish the objects is question formation. This is related to whether and which of the objects in a ditransitive construction can be questioned in the same way as the monotransitive object is questioned. The object that patterns with the monotransitive object in terms of question formation is, once again, the primary object, while the one that does not is the secondary object. Consider the following examples in English (Hudson 1992:258, e.g. 22, 23a):

- (34) a. We give children sweets.  
b. Which sweets do you give children?  
c. ?Which children do you give sweets?  
d. ?Which authors did they give a prize?

The example in (34a) is a *give*-construction in declarative form. Example (34b) is formed by questioning the theme argument in the *give*-construction in (34a). This is perfectly acceptable. Examples (34c) and (34d) are questions formed by extracting the recipient argument, and these are not as acceptable as (34b). Substituting the question phrases *which sweets*, *which children* and *which authors* with a single *wh*-word gives the same results, as the following shows:

- (34) b'. What do you give children?  
c'. ?Who do you give sweets?  
d'. ?Who did they give a prize?

According to Hudson (1992:258), judgments on questions such as (34c) and (34d) are divided. This explains why the questions in (34c) and (34d) are preceded by a ‘?’ instead of an ‘\*’. Many authors, such as Larson (1988), claim that such questions are completely unacceptable, but Hudson acknowledges the fact that a few speakers do find these questions acceptable. In any case, it seems that the theme-object can be much more easily questioned than the recipient-object, and hence behaves more similarly to the monotransitive object.

### **3.2.6 Section Summary**

In a construction where there is more than one object, the objects do not show identical grammatical behaviour. One of them is more ‘object-like’, in that it shares more properties with the monotransitive object. This object is *the* object in the construction, and is usually referred to as the ‘primary object’. The ‘other’ object is known as the ‘secondary object’, and it is less similar to the monotransitive object in terms of grammatical behaviour.

We have discussed five object properties in this section, including two morphological and three syntactic ones, which are frequently used as diagnostics in the literature to distinguish the objects in a ditransitive construction. Morphologically, the object that is encoded in the same way as the monotransitive

object, either case-marked or indexed or the verb or both, is the primary object. In terms of syntax, the primary object may be passivized, relativized on and questioned like the monotransitive object. It should, however, be noted that these diagnostics should be applied with caution. Like all other linguistic ‘tests’, the conclusion will be much more convincing if a series of these diagnostics give converging results, i.e. that one object is consistently identified as the primary or the secondary object.

The typological overview of DOCs and the discussion of primary and secondary objects end here. In the following section, we shall consider DOCs from a more theoretical syntactic point of view – a transformational treatment of DOCs.

### **3.3 DOCs – A Transformational Analysis (Larson 1988)**

A very well-known study of DOCs is Larson (1988), which investigates the structure of the prepositional dative construction, i.e. the [V NP PP] structure, the structure of DOCs, and the relation between the two.

The idea that underlies Larson’s (1988) study is that the prepositional dative structure is the more basic one, and the double object structure is derived from it through a series of movement operations. Quite a number of new or modified assumptions are adopted in the study, including the Single Complement Hypothesis (section 3.3.1), the Principles of Argument Realization and Projection (section

3.3.2), the V' Reanalysis rule (section 3.3.4), and the Argument Demotion rule (section 3.3.5). We shall review each of these, and discuss the problems that are associated with them. In addition, the structure of the prepositional dative is presented in section 3.3.3, while that of the double object structure is in section 3.3.5.

### 3.3.1 The Single Complement Hypothesis

Larson's (1988) proposed constituent structures for the prepositional dative structure and the double object structure relies crucially on the Single Complement Hypothesis. The Hypothesis, which seems to be reminiscent of the requirement for strict binary branching (Larson 1988:342; see Kayne 1983 for more on binary branching in general), claims that there is one and only one complement position. The X-bar rules, as shown in (35), are modified as in (36). Notice that the Kleene star next to the complement YP in (35b) is removed (36b):

(35) X-bar Schema (Stowell 1981, in Larson 1988:380, e.g. 74)

- a.  $XP \rightarrow \text{Spec } X' X'$
- b.  $X' \rightarrow X YP^*$

(36) X-bar Schema Modified (Larson 1988:381, e.g. 76)

- a.  $XP \rightarrow \text{Spec } X' X'$
- b.  $X' \rightarrow X YP$

Since the presence of the Kleene star licenses any number of YPs in the phrase, including zero or more than one, removing the star in effect means these possibilities are no longer available and that there must be one complement position in every phrase. In the case of VPs, intransitive verbs have a complement position that is not filled, while ditransitive verbs require an additional projection of the head V (to be shown in section 3.3.5) in order for all of its complements to be represented.

This is a *very* strong claim about phrase structure, which has great impact on the learnability of language (Jackendoff 1990) and the possible syntactic structure of language. Such a strong claim about language, however, does not seem to be motivated other than by the need for Larson's proposed double object structure to work - merely 'a nice formal symmetry' between specifiers and complements in Jackendoff's (1990) words.

### **3.3.2 Principles of Argument Realization and Projection**

In addition to making changes to the X-bar schema through the introduction of the Single Complement Hypothesis, Larson proposes two other principles in order for his derivation of DOCs to succeed. These principles, given below, deal with the assignment and realization of thematic roles on constituent structure:

(37) P1 (Larson 1988:382)

If  $\alpha$  is a predicate and  $\beta$  is an argument of  $\alpha$ , then  $\beta$  must be realized within a projection headed by  $\alpha$ .

Principle P1 ‘imposes a very tight relation between thematic and categorial structure’ (Larson 1988:382). Crucially, P1 allows some thematic roles to be realized in non-argument positions of the phrase, i.e. adjunct positions. (Larson 1988:383). We shall see more about this in section 3.3.5. The Single Complement Hypothesis forces that there be only one complement in a phrase. Together with the specifier, a verb may have at most two arguments realized in its immediate phrase structure. This poses a great challenge to the analysis of ditransitive verbs which have a total of three arguments to be realized. The solution to this, then, is to allow the third argument to be realized in a position that is not an argument position in the phrase. As long as this argument is realized in the projection, P1 is satisfied.

While P1 is concerned with where in the structure thematic roles may be realized, P2 deals with the order in which these roles are realized:

(38) P2 (Larson 1988:382)

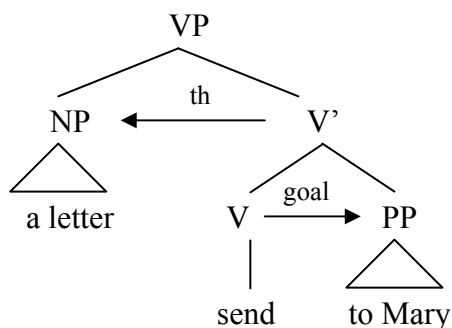
If a verb  $\alpha$  determines  $\theta$ -roles  $\theta_1, \theta_2, \dots, \theta_n$ , then the lowest role on the Thematic Hierarchy [in (39)] is assigned to the lowest argument in constituent structure, the next lowest role to the next lowest argument, and so on.

The Thematic Hierarchy referred to in (38) is included below<sup>19</sup>:

- (39) Thematic Hierarchy (Carrier-Duncan 1985, in Larson 1988:382)  
 Agent > Theme > Goal > Obliques (manner, location, time, ...)

The goal of Principle P2 seems to be to justify the claim that the prepositional dative structure is the more basic one, from which the double object structure is derived. Since there is only one complement position licensed by the Single Complement Hypothesis, of the two thematic roles, the one that has to be assigned first has to be the goal role by P2, as it is lower than the theme role on the Thematic Hierarchy in (39). The next lowest argument is in the specifier position, and it receives the theme role:

(40)



That a theme role is assigned to spec-VP violates the Uniformity of  $\theta$ -Assignment Hypothesis (UTAH, Baker 1985). We will take up this issue again in the next section, where the structure for the prepositional dative is presented.

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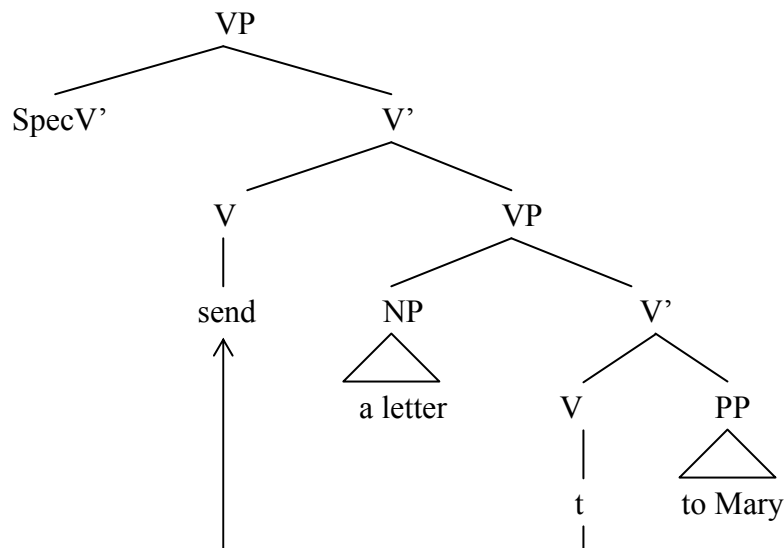
<sup>19</sup> The Thematic Hierarchy (Carrier-Duncan 1985, in Larson 1988) is not the same as the one we shall refer to in the chapters that follow:

(i) Thematic Hierarchy (Bresnan 2001:307)  
 agent > beneficiary > experiencer/goal > instrument > patient/theme > locative

### 3.3.3 The Structure of the Prepositional Dative

Having considered the basic assumptions that underlie Larson's (1988) proposal, we now turn to the structure of the prepositional dative. Larson attributes the structure to an earlier proposal by Chomsky (1955/1975), his version of which is shown below (only the structure of VP is shown):

(41) Larson (1988:342, e.g. 14)



There are several points to note regarding this structure. First, branching is strictly binary (Larson 1988:342; refer also to section 3.3.1 for a discussion on the related Single Complement Hypothesis). Even though a ditransitive predicate like *send* requires two complements, only one of them, the recipient argument *to Mary*, is represented in a complement position as a sister to the head V on the tree. The other complement, the theme argument *a letter*, originates in the specifier position of the lower VP, and does not bear a head-complement relation to the verb.

In a theory where the subcategorization requirements of a verb, including the number of complements and the type of semantic/thematic roles assigned, are represented configurationally on the constituent structure, this is greatly problematic. Consider the Uniformity of  $\theta$ -Assignment Hypothesis (UTAH), a standard assumption in this theory whose requirements are clearly not satisfied (Jackendoff 1990):

(42) Uniformity of  $\theta$ -Assignment Hypothesis (UTAH) (Baker 1985)

Identical thematic relationships are represented by identical structural relations between the items at the level of D-Structure.

Under UTAH, a particular semantic role can only be assigned to a phrase if this NP is in a specific configuration in relation to the verb. While the phrase *to Mary*, being a PP sister of the head verb, may receive a goal role from the verb, it is not at all clear how the phrase *a letter*, a theme, may get the right thematic role, since it is in spec-VP which is a structural position typically for agent roles. Besides, the spec-VP position is not normally the position for complements. This, of course, is a consequence of the Single Complement Hypothesis, which is problematic on its own (section 3.3.1).

The second point to note for the structure in (41) is that the verb *send* is said to raise via head-to-head movement in order to satisfy the Case and agreement requirements of the NPs (Larson 1988:343). As Jackendoff (1990) points out, this is,

once again, a non-standard assumption. The standard idea is that NPs satisfy such requirements by moving into the desired structural positions themselves, not by having the verb moving to them.

Larson claims that support for the surface structure in (41), in which the phrases *a letter* and *to Mary* make a constituent, comes from co-ordination. He assumes that only constituents can be conjoined, but Jackendoff (1990:439, e.g. 47) has shown with well-formed examples that gapped phrases which are clearly not constituents can also be conjoined:

- (43) a. Bill hates Harry and Henry Ralph.
- b. On Tuesday, we'll visit Harry, and on Thursday, Ralph.
- c. At 6:00 Sue came, and at 7:00, Fred.

Furthermore, the string *a letter to Mary* fails standard tests of constituency, as Jackendoff (1990:440) shows (the following examples are also from Jackendoff):

- (44) a. Clefting:
  - \*It was [Harry's dog to Sue] that I sent.
- b. Pseudoclefting:
  - \*What I sent was [Harry's dog to Sue].
- c. Topicalization:
  - \*[Harry's dog to Sue], I forgot to send.
- d. Right Node Raising:
  - \*I sent, and the post office forwarded, [Harry's dog to Sue].

The structure of the prepositional dative does not seem to be supported by any empirical data. It is problematic in itself.

### 3.3.4 V' Reanalysis

Related to the constituent structure proposed for the prepositional dative is the analysis of the phenomenon known as 'Heavy NP Shift'. Larson (1988) claims that Heavy NP Shift does not involve the rightward movement of the heavy NP (45a', 45b'), but is essentially an instance of 'Light Predicate Raising' where the verb moves leftward and up the tree (45a'', 45b'')

(45) Larson (1988:347, e.g. 20)

- a. I gave to John everything that he demanded.
- b. Max sent to me the longest letter anyone had ever seen.
- a' I gave t to John [everything that he demanded].
- b'. Max sent t to me [the longest letter anyone had ever seen].
- a'' I [gave] to John everything that he demanded t.
- b''. Max [sent] to me the longest letter anyone had ever seen t.

In order to derive structures like (45a, b) in which the heavy NP is said to have 'shifted' to the end of the sentence or the verb has moved up as in Larson's proposal,

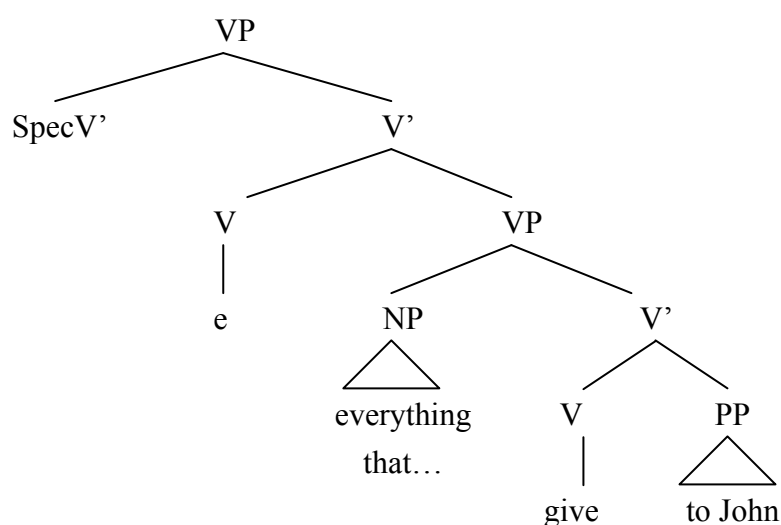
Larson (1988:348) proposes an optional rule of V' Reanalysis:

(46) V' Reanalysis

Let  $\alpha$  be a phrase [ $v'$  ...] whose  $\theta$ -grid contains one undischarged internal  $\theta$ -role. Then  $\alpha$  may be reanalyzed as [ $v$  ...].

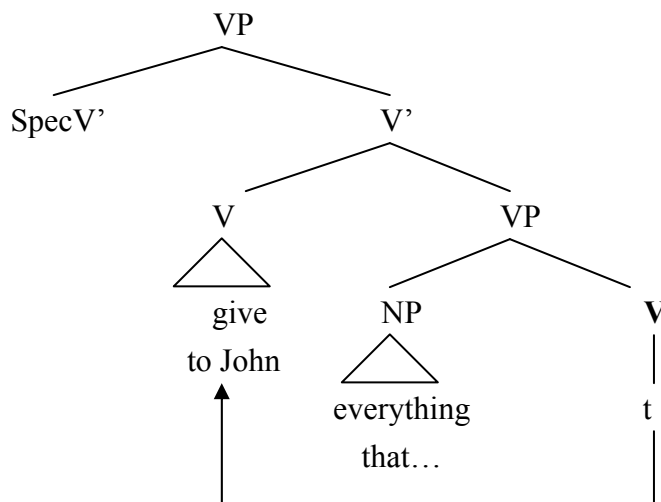
The example in (45a) is assumed to have the following underlying structure, the branching in which, again, is strictly binary (Kayne 1983):

(47) Larson (1988:348, e.g. 21a)



The verb *give* may move up the tree and produce that string *give everything that he demanded to John*, or the optional rule of V' reanalysis applies and the V' is reanalyzed as V. Before any movement takes place, as in the structure in (47), the PP *to John* which is a sister to the head V receives the goal role from the verb. In a trivalent predicate like *give*, the theta roles that are left or 'undischarged' are the agent and the theme, of which only the theme is an internal theta role. It is because of having this undischarged internal theta role in the theta grid of *give* that the V' in (47) may optionally be reanalyzed as V, a 'complex transitive verb' (Larson 1988:348), which moves to the head of the higher VP to create the string *give to John everything that he demanded*, as shown below (Larson 1988:348, e.g. 21c):

(48)



Two questions that come to mind concern the optionality of the application of V' reanalysis. Let us first state the two possible ways through which the theme role may be 'discharged':

- (49) Two possible means to 'discharge' the theme role in a trivalent predicate:
- The theme role is assigned by V' to the NP in spec-VP.  
Result: V' reanalysis is not applied and there is no movement.
  - The theme role is not 'discharged' by V'.  
Result: the V', having an 'undischarged' internal theta role, is reanalyzed as V and this 'complex transitive verb' moves to the head of the next VP higher up on the tree. Larson does not say what happens from this point onwards, but being transitive, the 'complex verb' presumably assigns the theme role to its sister, which is the lower VP. The theme role ends up on the NP in the specifier of the lower VP.

The first question, then, is why the theme role is not shared by the whole lower VP which is the complement of the 'complex transitive verb', but is only received by part of the lower VP - its specifier. The second question, an even more puzzling one, is related to economy. Notice that the theme role, regardless of when,

i.e. before or after movement, and how, i.e. by the V' of the lower VP or by the 'complex transitive verb' in the head of the higher VP, is assigned, the result is such that it is assigned to the NP in the specifier of the lower VP, which has not undergone any movement at all. The motivation for V' reanalysis to apply is for the theme role to be 'discharged', but other than the wish to obtain the correct order of the constituents, what is the motivation for going through all the trouble of V' reanalysis and then movement when the theme role can be assigned to the exact same NP in the same position in the first place, even in the absence of movement? V' reanalysis, and the movement of the 'complex transitive verb' that results, seem to be unmotivated and therefore greatly uneconomical.

We return to the more straight-forward cases without heavy NP shift in the next section, and consider the treatment of DOCs proposed by Larson (1988).

### **3.3.5 Dative Shift, Passive, and Argument Demotion**

Larson's (1988) proposal of the derivation of the double object structure from the prepositional dative structure is presented in this section. Before we show how this is done, however, a note is needed on several more assumptions in his analysis.

Larson claims that the derivation known as 'Dative Shift' is, in essence, very similar to the 'Passive' derivation in that both involve 'the withdrawal of Case from

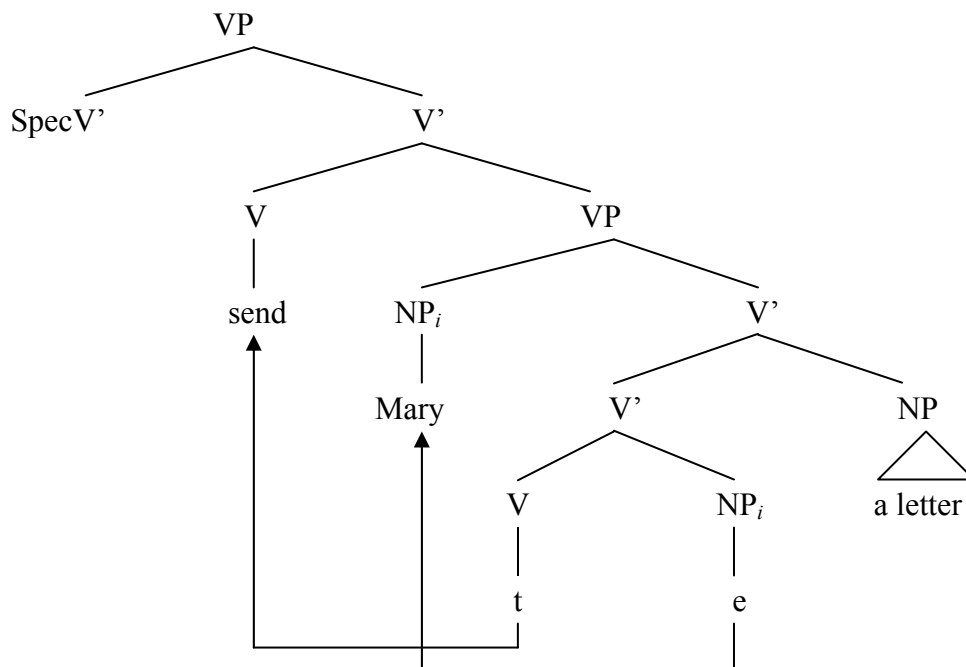
an object position, and suppression of thematic role assignment to a subject position' (Larson 1988:351, also citing Burzio 1986 and Chomsky 1981). Another similarity is the treatment of the suppressed role, which, he claims, is not suppressed but 'is assigned in a special way [...], in an adjunct configuration' (Larson 1988:352). This is his 'Argument Demotion' rule:

(50) Argument Demotion

If  $\alpha$  is a  $\theta$ -role assigned by  $X^i$ , then  $\alpha$  may be assigned (up to optionality) to an adjunct of  $X^i$ .

With these assumptions, the double object structure can now be successfully derived from the prepositional dative structure:

(51) Derivation of the double object structure from the prepositional dative structure (Larson 1988:353, e.g. 25, 26)



The derivation is explained as follows. The underlying string is *send a letter to Mary*, whose structure is presented in (41). Being like the Passive, the Dative Shift derivation begins by absorbing the Case on the PP *to Mary*, such that the phrase becomes an NP *Mary*. Then, like the Passive again, the role which is in spec-VP, the theme role in this case, is ‘demoted’ and is realized as an adjunct by the rule of Argument Demotion (50). The caseless NP *Mary* moves from its sister-of-V object position into the now empty spec-VP subject position, like the Passive. The verb *send* moves too, to the head of the next VP that is higher up on the tree in order to assign Case to the specifier of its complement VP, where the NP *Mary* is (Larson 1988:352).

The most serious and the most obvious problem with the structure in (51) is that the theme role, clearly an argument, is realized as a V' adjunct. This representation, as critiqued by (Jackendoff 1990:452), ‘completely neutralizes the structural distinction between arguments and modifiers’. The following examples, modified from the ones provided by Jackendoff, illustrate that the theme argument *a letter* in a ditransitive construction like the *send*-construction is not an adjunct and thus should not be represented as one on constituent structure:

(52) a. More than one possible position for adjuncts, but only one for arguments<sup>20</sup>

- (i) John sent Mary a letter last Friday.
- (ii) Last Friday, John sent Mary a letter.
- (iii) \*A letter, John sent Mary last Friday.
- (iv) John, last Friday, sent Mary a letter.
- (v) \*John, a letter, sent Mary last Friday.
- (vi) \*John sent Mary, last Friday, a letter.

b. The *do-so* test

- (i) John sent Mary a letter last Friday, and Bill did so this Monday.
- (ii) \*John sent Mary a letter last Friday, and Bill did so a parcel.

One of the standard tests for adjuncthood, in a language like English at least, is that only adjuncts may assume different structural positions in the sentence. As can be seen from (52a), the true adjunct *last Friday* may appear at the end of the sentence (52a(i)), at the beginning of the sentence (52a(ii)), and in the middle between the subject NP and the verb (52a(iv)). The NP *a letter*, on the other hand, cannot appear at the beginning (52a(iii)), in the middle between the subject NP and the verb (52a(v)), or at the end of the sentence (52a(vi)). This is because it is an argument, which has to be in a relatively much more fixed position with reference to the verb. Example (52a(vi)) is particularly interesting. On Larson's account in which *a letter* is a V' adjunct just like *last Friday*, swapping the two V' adjuncts

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<sup>20</sup> We are only concerned with the canonical order of constituents here. Structures like (52a(iii)), for instance, are possible topicalization structures. Topicalization is not relevant in this particular example as the theme argument *a letter* is indefinite. Similarly, structures like (52a(vi)) are possible heavy NP extraposed structures. Example (52a(vi)), however, does not involve heavy NP extraposition as the extraposed argument *a letter* is not heavy and the structure is rendered unacceptable.

should not result in ungrammaticality. The ungrammaticality that results is neither predicted nor can it be accounted for in an analysis that treats both as V' adjuncts in the same way.

The *do-so* test is another very common test for adjuncthood. While the adjunct(s) in the VP may or may not be substituted by the words *do so*, the argument(s) have to be substituted by these words together with the verb. As the examples in (52b) show, the adjunct *last Friday* may be excluded from the *do-so* substitution and be replaced by another adjunct *this Monday* (52b(i)), but the argument *a letter* cannot be excluded from the *do-so* substitution. Only the NP *last Friday* is an adjunct. The NP *a letter* is an argument.

More evidence comes from the possibility of having any number of adjuncts, but the number of arguments is strict for any given verb. Adjuncts can be stacked, but arguments cannot. Having multiple adjuncts, the example in (53b) is still acceptable. Not adhering to the number of arguments required by the verb, however, results in ungrammaticality, as (53a) shows.

- (53) a. \*John sent Mary a letter a parcel last Friday.  
b. John sent Mary a letter last Friday in the morning at about 10.

This, once again, confirms that only the NP *last Friday* is an adjunct, but the NP *a letter* is not. It, therefore, should not be represented as one. Given Larson's analysis, a sequence such as (53a) cannot be eliminated.

Regardless of how the structure of a DOC such as the one shown in (51) came about, the structure, by virtue of representing the theme argument in a ditransitive construction and an adjunct in the same way, is not successful in capturing the facts. In a theory where constituency, subcategorization, and the distinction between arguments and adjuncts are all represented at constituent structure, representing the theme role in a ditransitive construction as a *V'* adjunct loses a traditional and well accepted insight about language - that arguments and adjuncts exhibit very different behaviour and are not equal in status with reference to the verb.

### **3.3.6 Section Summary**

We have discussed Larson's (1988) treatment of double object constructions at length in this section. The main theme in his study is that the double object structure is derived through a series of transformations from the prepositional dative structure.

The assumption that the prepositional dative is the more basic structure and serves as the underlying structure from which a double object structure is derived is, in itself, highly questionable. While it is generally accepted in the syntactic literature that the two structures are related in, for instance, English, and hence the phenomenon known as the dative alternation, the postulation that one is more basic

than the other and that one is obtained from the other is not necessary. In fact, Larson has not provided any justification for this claim at all. There seems to be no empirical support for the claim either.

Furthermore, the dative alternation is actually not common at all in the languages of the world. As mentioned in section 3.1.3, Siewierska (1998:179) has found that this type of alternation is only observed in about 6% of the world's languages. In the majority of languages where the double object structure is not related to any oblique-like structure like the prepositional dative, and where there are unrelated, distinct structures realizing an argument structure with the roles agent, recipient and theme depending on the verb in question, Larson's claim seems greatly uneconomical and unappealing. Are the double object structures in these languages assumed to have a completely unrelated underlying structure as well, one which is never realized in the language? If so, what is this abstract structure like?

Another major problem with Larson's proposal is that quite a number of additional assumptions, some of which are non-standard within even the theory that he is working with, have been proposed in order for a double object structure to be derived. One of these is 'the Single Complement Hypothesis', discussed in section 3.3.1, which suggests that all verbal predicates, intransitive, monotransitive and ditransitive ones alike, have one and only one complement position. Under this

hypothesis, an intransitive verb has an empty-headed complement, while one of the two complements of a ditransitive verb is not represented in a complement configuration.

A consequence of this is that, in a double object structure, the theme role always seems to be less of a complement than the goal role. It, for instance, never appears in the true complement position. If constituent structure is, indeed, an accurate representation of argument structure as it is assumed in Larson's theory, the unequal status of the complements seems unjust. Semantically, neither of the complement roles should be understood as being less central in the event expressed.

Section 3.3.2 is about 'the Principles of Argument Realization and Projection'. In particular, the introduction of Principle P1 makes it possible for arguments to be realized in non-argument positions in the projection. This paves the way for Larson's proposed rule 'Argument Demotion'. Principle P2, which is about the order in which theta roles are assigned, aims at providing support for the otherwise unsupported claim that the prepositional dative structure has to be the more basic, underlying structure for the double object structure.

Section 3.3.3 presents the prepositional dative structure. By virtue of having only one complement position in each phrase, the representation of a trivalent prepositional dative violates standard assumptions about phrase structure and

theta-role assignment. One of the non-subject theta roles, the theme role, is not assigned by the verb to its sister, i.e. the complement, but is assigned by V' to the specifier of the VP, which is normally how the agent role is assigned. This structure serves as the underlying structure for Heavy NP Shift, and also for the double object structure.

With Heavy NP Shift, an optional rule known as V' Reanalysis has been proposed. The idea is that the V' which dominates a trivalent verb and its goal complement may be optionally reanalyzed as V. The canonical order for a prepositional dative structure [V NP PP] is obtained if V' is not reanalyzed. Alternatively, if V' is reanalyzed and the resulting 'complex transitive verb' moves up the tree, the shifted order of the theme and goal arguments [V PP NP] is observed. This has been discussed in section 3.3.4.

Finally, in section 3.3.5, we have shown how the double object structure is derived from a prepositional dative structure. The derivation relies crucially on Argument Demotion, which is based on Larson's assumption that the transformation known as Dative Shift is similar to that known as Passive. In both cases, he claims, a theta role is suppressed and is realized as an adjunct, and an NP moves across the head V from an object position, i.e. as sister to V, to a subject position, i.e. in spec-VP. While the suppressed agent role may be represented as an adjunct in the

case of the Passive, realizing the theme role in a ditransitive construction in an adjunct configuration fails to capture well-known distinctions between arguments and adjuncts, such as the position of the theme role and true adjuncts.

The problems associated with the double object structure, and the many apparently ad hoc assumptions that Larson has adopted in order for his derivation from the prepositional dative structure to succeed, make Larson's treatment of double object constructions unconvincing.

### **3.4 Chapter Summary**

This chapter has three main themes, all of which are related to double object constructions.

Section 3.1 begins the chapter by providing a review of the key terms to be used in this chapter and in this dissertation, including the terms 'ditransitivity' and 'double object constructions'. 'Ditransitivity' here is strictly a syntactic notion. A three-place predicate which subcategorizes for an agent, a recipient and a theme is trivalent, but it is not necessarily ditransitive. Only verbs which take two objects are ditransitive. Under this view, ditransitive verbs always appear in DOCs.

We have also provided an overview of the dative alternation, a phenomenon which is common in, for instance, English. A dative alternation involves two

possible realizations of the recipient and the theme in the argument structure < Ag, Rpt, Th >. These roles may both be expressed as objects, as in a DOC, or only the theme role is expressed as an object, but the recipient role as an oblique, as in a prepositional dative structure. The likelihood of each realization has been found to be associated with a number of variables, such as the speaker's perception of the event expressed, pronominality, the relative weight, and the information structural status of the recipient and the theme.

An example of a ditransitive verb that almost always comes to mind first is the verb GIVE, but we have shown that the verb and the DOC that is associated may, in fact, not be that prototypical. It is cross-linguistically prototypical, in that it is lexicalized in almost all languages, and in the majority of cases, the verb GIVE is indeed ditransitive. However, language-internally, the verb GIVE and the GIVE-construction very often exhibit anomalous morphological and syntactic behaviour. The verb GIVE and the corresponding GIVE-construction may not be as representative an example of a ditransitive verb or construction in a given language as is commonly assumed.

The next theme, discussed in section 3.2, is a typological overview of the morphology and syntax of DOCs across languages. We are particularly interested in distinguishing the objects, and in identifying the more monotransitive object-like

object, which is commonly referred to as the ‘primary object’. The object that patterns more closely with the monotransitive object in terms of case-marking, object agreement, passivization, relativization and question formation, for instance, is considered the primary object. The one that does not is the secondary object.

A previous theoretical analysis of DOCs, that in Larson (1988), has been discussed at length in section 3.3. The key assumption in the study is that the double object structure is derived from an underlying prepositional dative structure. This assumption is highly questionable, as pointed out in section 3.3.6.

Larson’s account is further weakened by the many non-standard assumptions that he has adopted. Of these, the most problematic one is perhaps the rule that he has labelled ‘Argument Demotion’. Through the application of this rule, the theme argument in a DOC is expressed in an adjunct configuration on constituent structure. In a theory where grammatical functions are represented by means of structural configurations on constituent structure and this being the only means to do so, such a representation has a far-reaching implication that there is no distinction between the theme role, which is undoubtedly an argument, and true adjuncts. This, of course, is undesirable, as shown in section 3.3.5. If arguments and adjuncts were the same, they would not have been distinguished in the first place. The distinction is necessary to reflect their syntactic differences.

In the next chapter, we shall present a very different representation of DOCs, one that is couched within Lexical Functional Grammar. As we shall soon see, the representation clearly shows (i) all the semantic roles in a trivalent predicate, without any preferential treatment of any of the complement roles; (ii) the constituency of the double object structure in a much more straight-forward manner; and, (iii) the different status of the objects in a DOC, which are definitely distinguished from adjuncts.

## Chapter 4

### The Object Functions in Lexical Functional Grammar

It has been observed in the literature that in a construction where there are two objects, one of them tends to share more similarities with the object in a monotransitive clause than the other. As we have seen in chapter 3, the one that is more similar to the object in a monotransitive construction in terms of grammatical behaviour is the ‘primary object’. The other object which has fewer common properties with the monotransitive object is the secondary object (Dryer 1986). In Lexical Functional Grammar (LFG), a similar distinction is made among the objects in a double object construction (and in a multiple object construction as we shall soon see). The object in a monotransitive construction is the unrestricted object, abbreviated as OBJ. The object in a ditransitive construction that patterns with this object is also an unrestricted object OBJ, while the object that behaves differently is a restricted object OBJ<sub>θ</sub>.

This chapter focuses on these two object functions in LFG. The chapter is organized as follows. It begins with an introduction to the architecture of LFG in section 4.1. This will be followed by a discussion of grammatical function classification in section 4.2. Sections 4.3 and 4.4 concentrate on the OBJ and OBJ<sub>θ</sub>

functions respectively. How double object constructions (DOCs) are represented within this framework is outlined in section 4.5. Section 4.6 ends the chapter with a summary.

#### **4.1 The Architecture of Lexical Functional Grammar (LFG)**

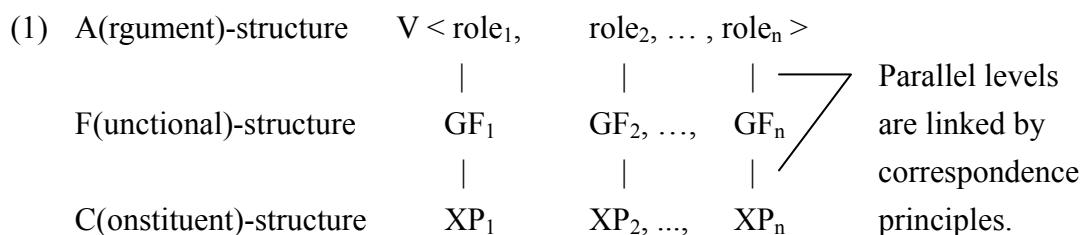
LFG (Bresnan 2001, Dalrymple 2001, Falk 2001, Kroeger 2004) is a non-derivational, constraint-based theory of grammar. It is non-derivational in two senses. First, related structures such as the active and the passive forms are in a relation with one another, but one is not assumed to be ‘more basic’ than the other, i.e. the passive is not *derived* from an underlying active structure. Second, considering the case of the passive again, its relation to the active is not obtained by a series of movements of constituents at constituent structure. Rather, because of the difference in lexical forms, i.e. verbal morphology in this case, the mapping between one level of representation to another is different for the active and the passive forms. Lexical items and the lexicon have an important role to play in this framework.

LFG is also constraint-based, in that a linguistic structure at each level of representation is subject to a set of constraints. The linguistic structure is licensed if and only if it satisfies all of the constraints at all levels of representation. Some of

the constraints are universal, while languages may also impose language-specific constraints on the structures.

LFG describes a linguistic structure by making use of parallel levels of representation. The most widely adopted, and perhaps the best developed, ones are the argument structure (a-structure), the functional structure (f-structure) and the constituent or phrase structure (c-structure). A number of other levels of representation have also been proposed, including, the information structure (i-structure), the morphological structure (m-structure), the phonological structure ( $\rho$ -structure) and the semantic structure ( $\sigma$ -structure). See Asudeh (2007:369) for a comprehensive list and a diagram illustrating how the various levels correspond with one another.

A level is mapped to another via a set of mapping principles. Schematically:



The next three sections outline each of these three levels of representation.

Section 4.1.4 summarizes this section.

#### 4.1.1 Argument Structure (a-structure)

The a-structure indicates the number and type (e.g. semantic role) of the arguments that a predicate takes. The English verb *break*, for example, takes two arguments, as in:

- (2) John broke the window.

The two arguments, each referred to by its semantic role, are represented in the a-structure. The order of the roles in the a-structure must observe that on the Thematic Hierarchy, which is a hierarchy of relative prominence of semantic roles.

The order of the semantic roles has consequences for the a- to f-structure mapping:

- (3) Thematic Hierarchy (Bresnan 2001:307)  
agent > beneficiary > experiencer/goal > instrument > patient/theme > locative

The a-structure for the verb *break* is given below:

- (4) A-structure of the verb *break*  
*break* < Agent, Patient >

#### 4.1.2 Functional Structure (f-structure)

The functional structure shows the predicate, and the grammatical functions that it subcategorizes, such as SUBJ(ECT) and OBJ(ECT). The features for each function, such as TENSE (abbreviated as TNS), NUM(BER), GEND(ER), and PRED(ICATE) are all included as well. The f-structure is a language-independent level of representation. Languages, regardless of how different they may appear at

c-structure, are very similar at f-structure by sharing the basic f-structure vocabulary.

The figure in (5) shows the f-structure of the structure in (2):

(5)

PRED	‘break < SUBJ, OBJ >’						
TNS	pst						
SUBJ	<table style="border-collapse: collapse; border: none;"> <tr> <td style="border-right: 1px solid black; padding-right: 5px;">PRED</td> <td style="padding-left: 5px;">‘John’</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 5px;">PERS</td> <td style="padding-left: 5px;">3</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 5px;">NUM</td> <td style="padding-left: 5px;">SG</td> </tr> </table>	PRED	‘John’	PERS	3	NUM	SG
PRED	‘John’						
PERS	3						
NUM	SG						
OBJ	<table style="border-collapse: collapse; border: none;"> <tr> <td style="border-right: 1px solid black; padding-right: 5px;">PRED</td> <td style="padding-left: 5px;">‘window’</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 5px;">SPEC</td> <td style="padding-left: 5px;">‘the’</td> </tr> </table>	PRED	‘window’	SPEC	‘the’		
PRED	‘window’						
SPEC	‘the’						

An f-structure is an attribute-value matrix (AVM). Attribute names are shown on the left-hand side in the matrix, and the values are shown on the right. Values can be of three types. A value can be a semantic form, which includes a representation of the meaning of a PRED and the argument functions that it subcategorizes. The values for all the PRED attributes in (5) are of this type. A value can also be a subsidiary f-structure, as the values for the SUBJ and OBJ attributes show. The last type is a simple value, like the values for the TNS, PERS, NUM, and GEND attributes. Typical simple values also include ‘+’ or ‘-’, e.g. for a DEFINITENESS attribute.

The well-formedness of an f-structure is subject to three constraints. They are (i) the Principle of Completeness, (ii) the Principle of Coherence, and (iii) the Uniqueness Condition. These are universal constraints that apply to all languages.

The Principle of Completeness requires that each and every function subcategorized by the PRED be present in the local f-structure (Bresnan 2001:63). In other words, there cannot be extra arguments. The Principle of Coherence is the reverse of the Principle of Completeness - each and every function present at f-structure must be subcategorized by the PRED (Bresnan 2001:63). Consider these examples:

- (6) a. \*She devoured.  
b. \*She devoured a sandwich a steak.

The verb *devour* requires two arguments. More specifically, these arguments have to be realized as SUBJ and OBJ. In example (6a), however, only the SUBJ function is present in the f-structure in which the PRED *devour* appears. The OBJ function that is also required by the verb is missing in the f-structure. The Principle of Completeness is violated and this results in the ungrammaticality of (6a).

Example (6b), on the other hand, has a SUBJ, an OBJ, and another function which is not required by the verb *devour* in the f-structure. This, again, results in ungrammaticality, as the principle of Coherence is violated.

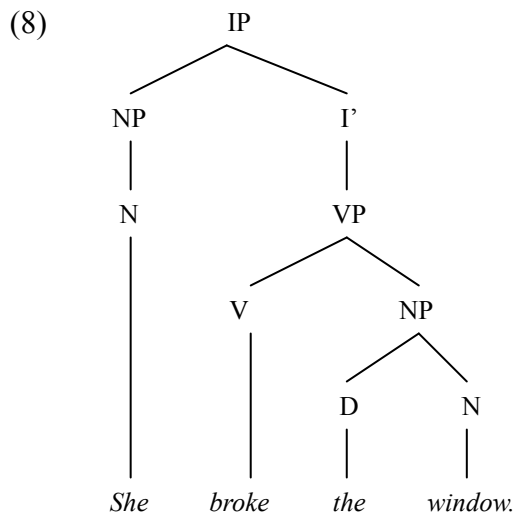
The third constraint on f-structure, the Uniqueness Condition, which is also known as the Consistency Condition (Dalrymple 2001, Falk 2001), states that 'every attribute has a unique value' (Bresnan 2001:47). Consider the following example:

(7) \*She broke a windows.

The determiner *a* provides the value SG to the attribute NUM in subsidiary f-structure labelled OBJ. The plural form *windows*, however, contributes the value PL to the same attribute. The attribute NUM has two conflicting values, which is a violation of the Uniqueness Condition. Example (7) is ungrammatical.

#### 4.1.3 Constituent Structure (c-structure)

The c-structure is a tree diagram which shows the phrase structure of a string. More specifically, the constituents and their constituency are represented at this level of representation. Precedence and dominance relations among constituents are also represented here. The tree in (8) is the (unannotated) c-structure for the example in (2):



There are several points to note about c-structures. First, c-structures are licensed by phrase structure rules (PSRs). PSRs can thus be regarded as constraints on c-structure. A c-structure in a language is only well-formed if and only if it has satisfied the requirements imposed by the PSRs for that language. C-structure, then, is the level of representation at which language-specific variations, e.g. word order, are captured.

With reference to the PSRs, X' theory is adopted to show constituency. In the c-structure in (8), most bar-levels have been omitted because of the principle of Economy of Expression, which eliminates the presence of unnecessary nodes as much as possible. Unnecessary nodes are those non-terminal c-structure nodes that neither contribute (i) semantic content, nor (ii) functional information:

(9) Economy of Expression (Bresnan 2001:91)

All syntactic phrase structure nodes are optional and are not used unless required by independent principles (completeness, coherence, semantic expressivity).

The bar-levels that have been omitted in (8), if they were present, would not contribute any semantic content, which comes from the lexical items in their terminal daughter nodes. They would not contribute any functional information, either, because they will map to the same f-structure as their mother nodes. By the principle of Economy of Expression, they have to be omitted.

The principle of Economy of Expression also has the effect of preventing empty nodes, which will only be licensed ‘as a “last resort” in highly configurational languages which lack other means of specifying functions’ (Bresnan 2001:92).

Second, LFG assumes an exocentric category S (Bresnan 2001, Dalrymple 2001, Falk 2001). S, being exocentric, does not have a c-structure head. If there is no evidence for a phrase to be headed, empty heads will not be posited. In fact, they are strongly dispreferred according to the principle of Economy of Expression. The string will be dominated by S instead. The exocentric category S is preferred to empty-headed phrases.

#### **4.1.4 Section Summary**

LFG makes use of three basic, parallel levels to represent the structure of a language. These levels are the a-structure, f-structure and c-structure. These structures are subject to different kinds of requirements and are related to each other by sets of correspondence principles.

## 4.2 Grammatical Function Classification in LFG

Grammatical functions (GFs) are considered ‘primitives’ in the architecture of LFG. They are ‘primitive’ in the sense that they are not defined or derived in terms of concepts at other levels. At f-structure, syntactic structures are represented in terms of grammatical functions, and grammatical processes are stated in terms of these functions. Grammatical functions, and the inventory of possible grammatical functions, are assumed to be universal:

- (10) Grammatical functions assumed in LFG (Dalrymple 2001:9):  
SUBJ, OBJ, OBJ<sub>θ</sub>, COMP, XCOMP, OBL<sub>θ</sub>, ADJ, XADJ

It is beyond the scope of this dissertation to discuss each and every function in the inventory in detail. See Bresnan (2001, Chapter 6.1) and Dalrymple (2001, Chapter 2) for a comprehensive introduction to these grammatical functions. We will only focus on the object functions, namely the OBJ and the OBJ<sub>θ</sub> functions.

The grammatical functions listed in (10) can be classified in a number of ways (Dalrymple 2001) - into (i) governable ones and modifiers (section 4.2.1); (ii) terms and non-terms (section 4.2.2); and (iii) semantically restricted and unrestricted ones (section 4.2.3). Grammatical functions may also be grouped into (iv) objective and non-objective ones (section 4.2.4).

#### **4.2.1 Governable Functions and Modifiers**

Grammatical functions may be classified into governable functions, which are arguments of the verb, and modifiers, which are not subcategorized by the verb. Governable functions include SUBJ, OBJ, OBJ <sub>$\theta$</sub> , COMP, XCOMP and OBL <sub>$\theta$</sub> . ADJ and XADJ are modifiers. For a discussion on how governable functions and modifiers are distinguished, see Dalrymple (2001:11-13). A brief discussion is also available in section 3.3.5 of this dissertation.

#### **4.2.2 Terms and Non-terms**

Of the six governable functions, some of them are terms, or core functions (Bresnan 2001), while others are non-terms, or non-core functions. The functions SUBJ, OBJ and OBJ <sub>$\theta$</sub>  have traditionally been considered as central, core participants of an event, and are thus labelled core functions or terms. OBL <sub>$\theta$</sub> , COMP and XCOMP are the oblique, non-core functions, or non-terms. Refer to Dalrymple (2001:13-15) for a list of tests for distinguishing terms and non-terms.

#### **4.2.3 Semantically Restricted and Unrestricted Functions**

The theta  $\theta$  symbol on the functions OBJ <sub>$\theta$</sub>  and OBL <sub>$\theta$</sub>  indicates that these are semantically restricted functions. In other words, these grammatical functions can

only be associated with a restricted set of semantic roles. Consider, for instance, the semantic roles that the function  $OBL_{\theta}$  can take in English<sup>1</sup>:

(11) Semantic roles that may be associated with the semantically restricted function  $OBL_{\theta}$  in English:

- a. Goal: He pushed the box *into the garage*.
- b. Locative: He put the book *on the table*.

SUBJ and OBJ, on the other hand, are semantically unrestricted, i.e. any semantic role can be associated with these functions.

(12) Semantic roles that may be associated with the semantically unrestricted function SUBJ in English:

- a. Agent: *He* kicked the ball.
- b. Recipient: *He* received a letter.
- c. Experiencer: *He* likes chocolate.
- d. Theme: *He* is a student.
- e. No role: *It* is raining.

We will consider the range of semantic roles that may be associated with the unrestricted function OBJ in section 4.3, and that with the restricted function  $OBJ_{\theta}$  in section 4.4.

Not all governable functions can be classified into restricted and unrestricted functions. The functions COMP and XCOMP are arguments of the verb, but by their nature they are not associated with a particular semantic role standardly assumed in LFG (refer to the thematic hierarchy in (3)).

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<sup>1</sup> In earlier versions of LFG (e.g. Kaplan and Bresnan 1982), the  $OBL_{\theta}$  function may be associated with the agent role in passives. The agent role which is linked to the SUBJ function in an active sentence is linked to the  $OBL_{\theta}$  function in the corresponding passive construction. The current view, however, is to associate the agent role with the ADJ function. Under this view, the  $OBL_{\theta}$  function is even more semantically restricted in that it can no longer bear the agent role.

The restricted/ unrestricted function dichotomy is, in fact, more complicated. It has been shown that the dichotomy may not be solely semantic in nature, but considerations from other levels of representation, particularly those from the information structure, are also relevant. We shall consider two such proposals in the following sections.

#### **4.2.3.1 Butt and King's (1996) Proposal**

Butt and King's (1996) proposal makes use of the unrestricted/ restricted object dichotomy in LFG to refer to different object types in a language. In languages like Urdu and Turkish, an object may have either a specific or non-specific interpretation depending on its structural position in the sentence and its case value. Butt and King have found that these properties correlate, and each object type is associated with a set of morphosyntactic and semantic properties:

(13) Morphosyntactic and semantic properties of OBJ and OBJ<sub>θ</sub> in Urdu and Turkish (modified from Butt and King 1996:12, e.g. 26)

	<b>OBJ</b>	<b>OBJ<sub>θ</sub></b>
Structural position	immediately preverbal	anywhere
Case	Nom	Acc/ Nom
Specificity	non-specific	specific or non-specific

The grammatical functions OBJ and OBJ<sub>θ</sub> represent two object types. This classification is not solely based on the range of semantic roles that each function may be associated with. Furthermore, the OBJ<sub>θ</sub> is not considered semantically

(more) restricted, but is regarded as ‘semantically enriched’ instead. OBJ<sub>θ</sub> is ‘semantically enriched’ in that it may have either a specific or non-specific semantic interpretation, while OBJ may only have a non-specific one.

The two functions have other contrasting grammatical properties. In terms of structural position, the OBJ is licensed in the spec-VP position (Butt and King 1996:5), and is therefore immediately preverbal. The OBJ<sub>θ</sub>, on the other hand, may appear in any position within the sentence. In terms of case-marking, the OBJ has nominative case, while the OBJ<sub>θ</sub> has either accusative or nominative case (Butt and King 1996:8).

There is, however, one exception that overrides this alignment of morphosyntactic and semantic properties with grammatical functions. This is concerned with the distribution of the discourse focus. The object functions, and therefore their interpretation as being specific or non-specific, interact in an interesting way with the discourse focus. In particular, the focus and the OBJ are in complementary distribution, and are assumed to be licensed in the same spec-VP position (Butt and King 1996:13). Consider the following examples as for an illustration:

(14) Urdu (Butt and King 1996:12-13, e.g. 27)

- a. naadyaa=ne    [xat]                    [Hassan=ko]<sub>F</sub>    di-yaa  
Nadya.F=Erg    letter.M.Nom    Hassan.M=Dat    give-Perf.M.Sg  
‘Nadya gave Hassan a particular letter.’ (specific reading of ‘letter’)

- b. naadyaa=ne      Hassan=ko      [xat]<sub>F</sub>      di-yaa  
 Nadya.F=Erg      Hassan.M=Dat      letter.M.Nom      give-Perf.M.Sg  
 ‘Nadya gave Hassan a particular letter.’ (specific reading of ‘letter’)
- c. [xat]<sub>T</sub>      naadyaa=ne      [Hassan=ko]<sub>F</sub>      di-yaa  
 letter.M.Nom      Nadya.F=Erg      Hassan.M=Dat      give-Perf.M.Sg  
 ‘The letter Nadya gave Hassan.’ (specific reading of ‘letter’)

In (14a), the NP *Hassan=ko* ‘Hassan’, which is an oblique (Butt and King 1996:13, e.g. 29b), is in focus. This NP, being a focus, is licensed in the spec-VP position, and hence an OBJ cannot be licensed in the same position. The NP *xat* ‘letter’, being in a position which is not immediately preverbal, cannot be associated with OBJ. It is associated with the OBJ<sub>θ</sub> function instead, and thus has a specific interpretation.

In (14b), even though the NP *xat* is immediately preverbal, i.e. in spec-VP position, and has nominative case, the only reading that is possible with this NP is a specific one. Being in focus, it cannot bear the OBJ function at the same time, as both the focus and the OBJ are licensed in the same spec-VP position. The NP is linked to the OBJ<sub>θ</sub> instead, and has a specific interpretation.

The example in (14c), like (14a), has the NP *hassan=ko* in the spec-VP position and is in focus. The NP *xat* ‘letter’ is in the sentence-initial spec-IP topic position (Butt and King 1996:6, e.g. 11), bears the OBJ<sub>θ</sub> function, and has a specific interpretation as in the other examples.

It is worth mentioning that grammatical functions are usually not characterized in terms of structural positions at c-structure. However, languages like Urdu and Turkish have been found to be discourse configurational (E. Kiss 1995, in Butt and King 1996:1), and, as we have just seen, there is a fairly straight-forward association between structural positions, case values of nominals, specificity interpretation, discourse roles and grammatical functions. The OBJ and OBJ<sub>θ</sub> functions, are not distinguished with reference to semantic (role) restrictedness only, but are regarded as distinct object types, each of which displays a unique set of morphosyntactic, semantic and pragmatic properties.

#### ***4.2.3.2 Dalrymple and Nikolaeva's (2005) Proposal***

Based on data from Northern Ostyak, Dalrymple and Nikolaeva (2005) have reached a similar conclusion - the OBJ and OBJ<sub>θ</sub> functions to refer to different *types* of objects with distinct grammatical properties, one of these being the discourse role that each function may have. As an illustration, the verb KILL in the following example requires the same semantic roles, namely an agent and a patient:

(15) Northern Ostyak (Dalrymple and Nikolaeva 2005:82-83, e.g. 19, 21):

- a. ma tam kalaŋ we:l-s-ŋm  
 I this reindeer kill-pst-1SgSubj  
 'I killed this reindeer.'

- b. ma tam kalaŋ we:l-s-e:m  
 I this reindeer kill-pst-Obj.1SgSubj  
 ‘I killed this reindeer.’

In (15a), the verb only shows agreement with the first person singular subject. The verb does not agree with the object. In (15b), however, not only does the verb show agreement with the subject, there is also object agreement. These examples are not free variants of each other - each is associated with a specific information-structural interpretation. The object in example (15a), which does not trigger agreement, is a focus at i(nformation)-structure. This example can serve as a response to a question such as ‘What did you kill?’, in which the object NP has a focus role. In fact, in such a case, object agreement is disallowed. The object in example (15b) which triggers agreement, on the other hand, has the i-structure role of ‘secondary topic’. A secondary topic is ‘an entity such that the utterance is construed to be ABOUT the relationship between it and the primary topic’ (Nikolaeva 2001:26, in Dalrymple and Nikolaeva 2005:73). Consider the following examples:

(16) Northern Ostyak (Dalrymple and Nikolaeva 2005:78, e.g. 12):

- a. What did you do to this reindeer?
- b. (ma)tam kalaŋ we:l-s-e:m / \*we:l-s-[]m  
 I this reindeer kill-pst-Obj.1SgSubj / kill-pst-1SgSubj  
 ‘I killed this reindeer.’

- c. (ma) we:l-s-e:m / \*we:l-s-∅m  
 I kill-pst-Obj.1SgSubj / kill-pst-1SgSubj  
 ‘I killed it.’

In question (16a), the topic and secondary topic status of the two NP referents is established. The subject is the topic. While the reindeer is not the (primary) topic, it stands in a relation to the topic ‘you’ in that some change was effected on the reindeer and this change is related to, indeed was caused by, the topic ‘you’. Being the secondary topic, the overt object in (16b) and the omitted object in (16c) triggers obligatory agreement on the verb.

Although the object that triggers agreement (15b, 16b, 16c) and the one that does not (15a) are both objects, they need to be distinguished because they exhibit different syntactic properties. Other than verbal agreement, the agreeing object and the nonagreeing object behave differently in other syntactic aspects, summarized in the table below.

(17) Syntactic properties of subjects and objects in Oystak (Nikolaeva 1999:346, in Dalrymple and Nikolaeva 2005:79):

	Subject	Agreeing object	Nonagreeing object
Verbal agreement	+	+	-
Control of coreference in participial clauses with subject agreement	+	+	-
Control of possessive reflexivization	+	+	-
Quantifier float	+	+	-
Possessor topicalization	+	+	-

All these are evidence for the two types of object being different grammatical functions. Dalrymple and Nikolaeva treat the agreeing object as the unrestricted

object OBJ, while the nonagreeing object is considered the restricted object OBJ<sub>θ</sub>.

The mapping between grammatical functions and discourse roles, and the agreement patterns of these functions on the verb are summarized in the table below:

(18) Grammatical functions, discourse roles and agreement in Northern Ostyak (Dalrymple and Nikolaeva, 2005:79, e.g. 14):

Grammatical function	Discourse role	Agreement
SUBJ	TOPIC	subject agreement
OBJ	TOPIC2 [secondary topic]	object agreement
OBJ <sub>θ</sub>	nontopic	no agreement

The non-subject argument of a transitive predicate, therefore, depending on its discourse status, may be linked to different grammatical functions. Dalrymple and Nikolaeva (2005:82-83, e.g. 20, 22) propose the following lexical entries for the different forms of the verb ‘kill’ as shown in examples (15a) and (15b) respectively:

- (19) a. Lexical entry for the verb *we:l-s-∅m* ‘kill (no object agreement)’
- we:l-s-∅m*      (↑PRED) = ‘kill < SUBJ, OBJ<sub>θ</sub> >’
- (↑SUBJ)<sub>i</sub> = (↑<sub>i</sub> TOPIC)
- (↑OBJ<sub>θ</sub>)<sub>i</sub> ≠ (↑<sub>i</sub> {TOPIC | TOPIC2} )
- ((↑SUBJ PRED) = ‘pro’
- ((↑SUBJ)<sub>i</sub> PRED) = ‘pro’)
- (↑SUBJ PERS) = 1
- (↑SUBJ NUM) = SG

- b. Lexical entry for the verb *we:l-s-e:m* ‘kill (with object agreement)’

*we:l-s-e:m*    (↑PRED) = ‘kill < SUBJ, OBJ >’  
 (↑SUBJ)<sub>i</sub> = (↑<sub>i</sub> TOPIC)  
 (↑OBJ)<sub>i</sub> = (↑<sub>i</sub> TOPIC2 )  
 ((↑SUBJ PRED) = ‘pro’  
 ((↑SUBJ)<sub>i</sub> PRED) = ‘pro’)  
 (↑SUBJ PERS) = 1  
 (↑SUBJ NUM) = SG  
 ((↑OBJ PRED) = ‘pro’  
 ((↑OBJ)<sub>i</sub> PRED) = ‘pro’)  
 (↑OBJ NUM) = SG

The first line in each entry shows the predicate feature of the verb form. What is particularly important to the current discussion is that, given the same predicate at a-structure KILL which subcategorizes for an agent and a patient, the predicate features (i.e. semantic forms) of the two verb forms differ. Different grammatical functions are subcategorized. While the agent role is linked to the SUBJ function in both cases, in (19a), the patient role is associated with the restricted OBJ<sub>θ</sub> function, while in (19b), it is associated with the unrestricted OBJ function. In this language, the OBJ and OBJ<sub>θ</sub> functions may not be semantically different. Neither has to be more semantically (un)restricted than the other. They differ in terms of the discourse roles that they are associated with.

The second and third lines in the lexical entries in (19) provide information about this. More specifically, they describe the mapping between f-structure and i-structure. The second line states that the SUBJ function is always linked to the

topic role at i-structure. The  $OBJ_{\theta}$  function cannot be associated with a topic or a secondary topic role (19a). In other words, it can only be linked to a nontopic role, which is the focus role. The OBJ function, on the other hand, is linked to the secondary topic TOPIC2 role (19b).

The remaining lines in (19a, b) are all agreement features and contribute information about the SUBJ function, including the person and number values of SUBJ. The optional feature  $(\uparrow SUBJ \text{ PRED}) = \text{'pro'}$  is only relevant if the subject of the clause is pro-dropped. As can be seen in (16c), Ostyak allows subject and object pro-drop. In such cases, since there is no full NP to contribute a PRED value, the PRED feature of the pro-dropped function is assigned the value 'pro'. The feature  $((\uparrow SUBJ)_i \text{ PRED}) = \text{'pro'}$  assigns the value 'pro' to the corresponding PRED attribute at i-structure. Similarly, the last three lines in the lexical entry in (19b) are concerned with object agreement and object pro-drop<sup>2</sup>.

#### ***4.2.3.3 Section Summary***

This section, reviewing previous studies including Butt and King (1996) and Dalrymple and Nikolaeva (2005), has clearly shown that the distinction between the OBJ and  $OBJ_{\theta}$  functions does not only lie in their varied degrees of semantic

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<sup>2</sup> See Bresnan (2001) for a more detailed discussion on the treatment of pro-drop within the LFG framework.

restrictedness. Information at i-structure may contribute to the distinction of these functions as well. The functions are different grammatical functions, each of which has a different set of syntactic, semantic and pragmatic properties.

We shall consider another type of grammatical function classification in the next section.

#### 4.2.4 Objective and Non-objective functions

Grammatical functions can also be classified into objective and non-objective ones. Non-objective [-o] functions are those which can appear with intransitive predicators such as N or A, and include SUBJ and OBL<sub>θ</sub>. The functions OBJ and OBJ<sub>θ</sub> are objective [+o] functions, as they ‘appear as arguments of transitive categories of predicators (Verb and Preposition) but not of intransitive categories Noun and Adjective’ (Bresnan and Kanerva 1989:76). Together with the feature [+/-restricted] for the semantic restrictedness of grammatical functions, the functions SUBJ, OBJ, OBJ<sub>θ</sub> and OBL<sub>θ</sub> can be further decomposed:

(20) Feature Decomposition of Argument Functions (Bresnan 2001:308)

		<i>-r</i>	<i>+r</i>
<i>-o</i>		SUBJ	OBL <sub>θ</sub>
<i>+o</i>		OBJ	OBJ <sub>θ</sub>

A hierarchy of grammatical functions is established by combining the different values for the [+/- r(estricted)] and [+/- o(bjective)] features. The function that has the most negative values, the SUBJ, is considered the most unmarked grammatical function. The function OBJ<sub>θ</sub>, on the other hand, is the most marked and is on the other end of the hierarchy:

(21) Partial Ordering of Argument Functions (Bresnan 2001:309):

SUBJ > OBJ, OBL<sub>θ</sub> > OBJ<sub>θ</sub>

The argument functions COMP and XCOMP are not classified by the features [+/- o] or [+/- r] and are therefore not included in the (partial) hierarchy of grammatical functions. In terms of the [+/- o] feature, they can be [+ o], as each is an argument of the transitive predicate V. The function COMP can be [-o], too. Nouns may take COMPs, as the structure *the fact that it is raining* shows. It is much more difficult to assign a value to the feature [+/- r] for these functions, as they are not normally assigned any semantic role on the thematic hierarchy that is assumed in LFG.

Because of the possibility to analyze (some) grammatical functions with combinations of features, some challenge the ‘primitive’ nature of grammatical functions in LFG. It should be pointed out that the primacy of grammatical functions lies in their status within the framework, not in their inability to be further analyzed. Each grammatical function is an abstraction of the cross-linguistic regularities in a-

to c-structure mappings (Bresnan 2001:96; Dalrymple 2001:8). Grammatical generalizations and processes are much better stated in terms of grammatical functions, and this is how they are expressed in LFG. Grammatical functions are, therefore, the most basic, ‘primitive’ in this sense, units through which linguistic generalizations are stated within this framework.

We have shown how grammatical functions may be classified in LFG in this section. In the next two sections, we will consider the object functions, OBJ and OBJ<sub>θ</sub>, in more detail.

### **4.3 The Unrestricted Object OBJ**

The unrestricted object OBJ is a governable, core, semantically unrestricted and objective grammatical function. It is an argument required by the verb. It is a core function, or a term, in that it is usually associated with one of the core participants in the event expressed by the verb. It is objective [+o] as it is a complement of the transitive predicators V and P. The OBJ function may be associated with a wider range of semantic roles. It is also possible for OBJ to not have any semantic role at all, i.e. to be expletive, as illustrated by the pronoun *it* in (22d). The OBJ function is therefore semantically unrestricted:

(22) Semantic roles that may be associated with OBJ:

- a. Benefactive/ recipient: John gave *David* the book.
- b. Experiencer: The noise frightened *the baby*.
- c. Theme: John kicked *the ball*.
- d. No semantic role: John believes *it* to be raining.

See chapter 2 for a more thorough discussion of object properties, and also Andrews (1985:120-6) for some of the problems in identifying OBJ (which he terms ‘direct object O’).

In a ditransitive construction, the OBJ function is identified in similar ways as the primary object (cf. Dryer 1986) is identified. The basic idea is that the grammatical function which patterns with the monotransitive object morphologically and syntactically is the unrestricted object OBJ, while the one that behaves differently is the restricted object OBJ<sub>θ</sub>. Refer to section 3.2 for a more thorough discussion on the distinction between primary and secondary objects, and to section 4.3.2 for a related discussion of symmetric and asymmetric objects.

#### **4.3.1 Applicativization**

Highly relevant to the notion of objecthood and to the distinction between the OBJ and OBJ<sub>θ</sub> functions is applicativization. Applicativization is a process by which, through the affixation of an applicative affix, an additional non-subject argument is introduced into the argument structure of the verb. The applicative affix thus

increases the valency of the verb by one (non-subject) argument. More specifically, the argument that is newly introduced is linked to some object function. Applicativization can therefore be regarded as a transitivizing process, and makes intransitive verbs transitive, monotransitive verbs ditransitive and so on. Here are some examples from the Bantu language Chichewa<sup>3</sup>:

(23) a. Making an intransitive verb monotransitive (Simango 1995:30, e.g. 2)

Joza a-na-vin-ir-a                      mfumu<sup>4</sup>  
 J    SB-pst-dance-appl-fv    chief  
 ‘Joza danced for the chief.’

b. Making a transitive verb ditransitive (Simango 1995:30, e.g. 1)

Joyce a-na-phik-ir-a                      mwana nyemba  
 J            SB-pst-cook-appl-fv    child    beans  
 ‘Joyce cooked beans for the child.’

In (23a), the originally intransitive verb root *-vina-* ‘dance’ has now become the transitive *-vin-ir-a-* which takes *mfumu* ‘chief’ as its (unrestricted) object. In (23b), the verb root *-phika-* is monotransitive and requires only one object, but upon the affixation of the applicative morpheme, it is now ditransitive and takes two objects, *mwana* ‘child’ and *nyemba* ‘beans’. In this case, *mwana* ‘child’ is the unrestricted object OBJ, while *nyemba* ‘beans’ is the restricted object OBJ<sub>θ</sub>. Note

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<sup>3</sup> There are quite a number of languages which allows applicativization. In this dissertation, however, we will focus primarily on the applicative construction in Chichewa.

<sup>4</sup> In earlier works on Chichewa (e.g. Simango 1995), the allophones of the applicative affix are represented as *-ir-* and *-er-*. We will keep these forms if these are the forms in the examples that are cited. Otherwise, we will follow Mchombo (2004) and represent such forms as *-il-* and *-el-* respectively. According to Mchombo (p.c.), the aim of the change in the orthographic representation of these allophones is to reflect their phonological realization of more accurately.

that it is not always the case that the introduced argument is linked to the unrestricted object function OBJ. We will discuss this further in chapter 6.

#### **4.3.2 Symmetric and Asymmetric Objects**

In double, and in some languages multiple<sup>5</sup>, object constructions where there is more than one object, one of the objects may be more object-like than the other(s). The object which displays more morphosyntactic similarities to the single object in a monotransitive construction is considered ‘the’ object. Dryer (1986) uses the term ‘primary object’ to refer to this object, and in LFG, this is the unrestricted object OBJ. The most common diagnostics used to identify the unrestricted object OBJ include - (i) passivizability; (ii) adjacency to the verb; and (iii) verb agreement or case-marking. It is the unrestricted object that can be passivized, is adjacent to the verb in the canonical order, and shows agreement on the verb or is case-marked like the monotransitive object. Refer to section 3.2 for a more thorough discussion of Dryer’s distinction of primary and secondary objects, and of the diagnostics which are frequently used in the literature to identify the more monotransitive-object-like object.

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<sup>5</sup> A multiple object construction is possible in some languages where there is applicativization. For instance, a three-object construction is licensed by the affixation of an applicative morpheme to a ditransitive verb root. See chapter 6 for more discussion.

With reference to the behaviour of objects, languages may be classified into ones with symmetric or asymmetric objects. In languages with asymmetric objects, only one of the objects behaves like the monotransitive object OBJ in a double/multiple object construction. Only one of the objects may become the subject of the corresponding passive construction, for instance. Contrarily, in languages whose objects in a double/multiple object construction are symmetric, any object in the series may have monotransitive object properties; for example, any object may be passivized. It is, of course, not the case that all objects can be passivized simultaneously, with the corresponding passive structure having more than one subject. At any one point, only one of the objects in the series has monotransitive object properties. All of the objects, however, have the potential of possessing these properties and becoming the OBJ. Refer to Bresnan and Moshi (1990) for a list of symmetric and asymmetric languages among the Bantu languages, and for an extensive discussion of symmetric and asymmetric objects in these languages. See also chapter 6 for an illustration of the Asymmetric Object Parameter (AOP), which was first proposed in the same paper to account for object asymmetries in Bantu languages.

In the next section, we will focus on the grammatical function for the non-monotransitive-like object(s) in double/multiple object constructions, the

restricted object  $OBJ_\theta$ .

#### 4.4 The Restricted Object $OBJ_\theta$

The restricted object as a grammatical function had its first appearance in Bresnan and Kanerva (1989). Four grammatical functions SUBJ, OBJ,  $OBJ_\theta$  and  $OBL_\theta$  are classified by the features [+/- restricted] and [+/- objective]. This classification is essential in their proposal to account for locative inversion in Chichewa. The theta  $\theta$  symbol on the grammatical function label  $OBJ_\theta$  indicates the semantic restrictedness that is associated with this function, and is a variable that is to be instantiated by semantic roles (the same is true of the  $\theta$  symbol on the  $OBL_\theta$  function label). Thus, the label  $OBJ_\theta$  encompasses a set of restricted object functions, all differentiated by unique semantic roles (Bresnan and Kanerva 1989:76). The  $OBJ_\theta$  function label also replaces OBJ2 in earlier work in LFG (e.g. Kaplan and Bresnan 1982).

The function  $OBJ_\theta$  is a governable, core, objective but semantically restricted function. It is similar to the unrestricted object in every aspect of the classification of grammatical functions, and differs only in terms of semantic restrictedness. Compared to the  $OBJ_\theta$  function, the OBJ function allows a much wider range of semantic roles to be associated with it, including the possibility of being

semantically null, as in the case of the expletive object *it* in the following example:

(24) Repeating (22d)

John believes *it* to be raining.

There are some variations in the semantic roles that may be associated with the OBJ<sub>θ</sub> function across languages, but within each language, these roles are fixed.

In English, for instance, the OBJ<sub>θ</sub> is only found in double object constructions, and is confined to bearing the theme role:

(25) John gave *David the book*.

OBJ    OBJ<sub>θ</sub>  
Ben/Rpt Th

In Bantu languages, however, the OBJ<sub>θ</sub> function may bear a number of other semantic roles.

(26) Benefactive role introduced by the applicative affix

Mkango    u-ku-phik-il-a                    ana                    nyemba  
lion(3)    3SM-pres-cook-appl-fv    children(2)    beans(10)  
'The lion cooked the children beans.'

In the case of a benefactive applicative construction, the benefactive role is linked to the OBJ function. The OBJ<sub>θ</sub> function bears the role of theme.

(27) Instrument role introduced by applicative affix (Mchombo 2004:87, e.g. 48b)

Kalulu    a-ku-phik-il-a                    mkondo    maungu  
Hare(1a) 1SM-pres-cook-appl-fv    spear(3)    pumpkins(6)  
'The hare is cooking pumpkins with (using) a spear.'

In an instrumental applicative construction, either the applied instrument role or the theme role may be associated with OBJ. In other words, the OBJ<sub>θ</sub> function

may be associated with one of these two roles. The same is true of a locative applicative construction – either the theme or the locative role may be mapped to the OBJ. The OBJ<sub>θ</sub> function may be linked to either of these roles:

- (28) Locative role introduced by applicative affix (Mchombo 2004:87, e.g. 49b)
- Kalulu a-ku-phik-il-a pa chulu maungu  
Hare(1a) 1SM-pres-cook-appl-fv on(16) anthill(7) pumpkins(6)  
‘The hare is cooking on the anthill the pumpkins.’

The OBJ<sub>θ</sub> function in Chichewa, therefore, may be associated with the instrument, theme or locative roles. We will further investigate the more complex details of the object functions and the various types of applicative construction in this language in chapter 6.

The OBJ<sub>θ</sub> function exhibits different grammatical properties from OBJ. While the OBJ function patterns with the monotransitive object, the OBJ<sub>θ</sub> function includes all the other object(s) that pattern differently. The OBJ<sub>θ</sub> is the one which cannot passivize and is encoded morphologically differently, for example. There are other contrasts between the two functions, which are often used as tests to distinguish them. See chapter 3 for a review of the criteria that are frequently used to distinguish, more generally, primary and secondary objects in the literature.

## 4.5 The Representation of Double Object Constructions in LFG

In a double, or even multiple, object construction, the predicate has more than one complement. This has posed serious problems for some theories of grammar where binary branching is a requirement on constituent structure that must be met. Other problems (e.g. in theta-role assignment) arise as a consequence of this because a single level of representation is supposed to handle various kinds of linguistic information, each of a very different nature. See section 3.3 for a detailed discussion of this approach and the related problems.

In LFG where there are different levels of representation of linguistic information, c-structure is only one of the parallel levels and its only role is to represent the linear and hierarchical organization of a string of words as it appears. Whether there is binary branching or not has no significant consequence on other parts of the grammar. Binary branching is not a universally inviolable constraint at c-structure, and ternary branching is an acceptable means of representation provided that there is evidence for such an organization of constituents. There is such evidence in the case of double/multiple object constructions - each NP stands in the same hierarchical relation to the head verb as any other in the phrase. The NPs differ only in their linear order with reference to the verb. Furthermore, the whole VP is a constituent, with no subpart of it being a smaller constituent. The double object

construction in English in (29a) has the following a-structure (29b), c-structure (29c)

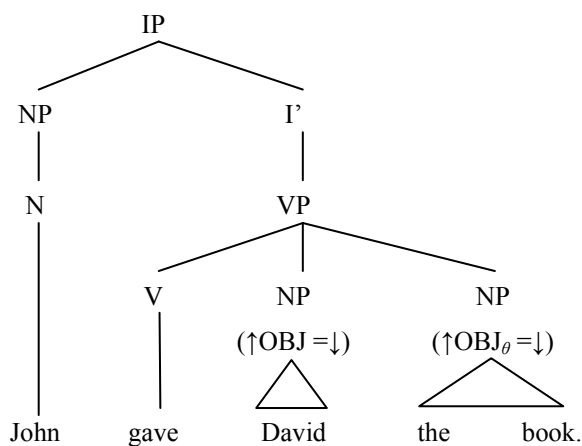
and f-structure (29d) representations:

(29) a. John gave David the book.

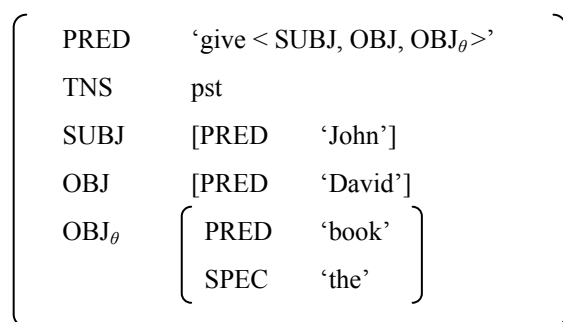
b. A-structure for (29a)

*give* < Ag, Rpt, Th >

c. C-structure for (29a) (for simplicity of representation, only the object functions are annotated)<sup>6</sup>:



d. F-structure for (29a):



<sup>6</sup> There is one exception to this representation of DOCs - when non-constituent coordination is involved. As is well known, in English at least, it is possible to co-ordinate parts of the DOC:

(i) John gave David the book and Peter the magazine.

A more complicated c-structure with some slightly non-standard apparatus is needed to represent a structure like (i). See Dalrymple (2001:368-72) for more details.

The a-structure in (29a) clearly shows that the verb *give* requires three arguments, including an agent, a recipient and a theme. In the c-structure in (29b), the first NP *David* is mapped to OBJ, while the second NP *the book* is mapped to OBJ<sub>θ</sub>. These NPs are represented as a sister to the head V. The corresponding VP has a flat structure with ternary branching. Both of these NPs, and their corresponding functions are of equal importance at both c- and f-structures. Their syntactic and other grammatical differences, e.g. that the OBJ function *David* can become the SUBJ of the passivized sentence but not the OBJ<sub>θ</sub> *the book*, are captured by their realization as different grammatical functions. Both of these functions are argument functions subcategorized by the predicate, as is indicated in the semantic form, i.e. the value of the PRED feature.

## 4.6 Chapter Summary

In this chapter, we have presented a review of the LFG literature on the object functions - the unrestricted object OBJ and the restricted object OBJ<sub>θ</sub>. The chapter begins with an introduction to the architecture of LFG in section 4.1, which highlights the fact that three parallel levels of representation are assumed in the framework. The three levels are the a(rgument) structure, the c(onstituent) structure and the f(unctional) structure. This is followed by a discussion of grammatical

function classification in LFG in section 4.2. We have shown that the OBJ function is a governable, core, objective and unrestricted function, while the OBJ<sub>θ</sub> is a governable, core, objective but restricted function.

Sections 4.3 and 4.4 provide an overview of the OBJ and OBJ<sub>θ</sub> functions respectively. While the two functions may differ in the range of semantic roles that each may be associated with, i.e. semantic (un)restrictedness, the most important distinction between them is that, being different grammatical functions, each function exhibits morphosyntactic, semantic and pragmatic properties that are unique to that particular function. They are perhaps best viewed as representing different object types, as illustrated in Butt and King (1996) and Dalrymple and Nikolaeva (2005). This is in line with what we have seen in chapter 3 concerning the distinction between primary and secondary objects as proposed by Dryer (1986).

The last section, section 4.5, provides an LFG representation of DOCs. That the verb in a DOC is trivalent is represented at a-structure. The semantic roles that are subcategorized by the verb are also given here. The constituency of the VP in the DOC and the linear order of the objects in the construction are represented at c-structure. The functional status of these objects is represented at f-structure. Being different grammatical functions, the objects OBJ and OBJ<sub>θ</sub> are expected to display different morphosyntactic, semantic and pragmatic properties.

Having reviewed the relevant literature, the next two chapters present two interesting case studies of DOCs. The languages of interest are Cantonese and Chichewa. With the basic assumptions outlined in this chapter as the basis, the DOC data to be discussed in the next two sections can be well accounted for, as we shall soon see. In particular, the assumption that there are multiple parallel but related levels of representation, and the availability of two distinct object functions in the inventory of grammatical functions, are crucial.

We begin by investigating the syntax of the DOCs in Cantonese in the next chapter.

## Chapter 5

### Double Object Constructions in Cantonese

The default definition for a double object construction (DOC) is almost invariably ‘a construction like the give-construction’. While the GIVE-construction may be a cross-linguistically representative example of such constructions, within Cantonese, the construction certainly displays syntactic behaviour that is anomalous (see also Kittilä 2006 for the anomalies of the GIVE-construction in other languages). In fact, in Cantonese, the give-construction is the *only* construction that deviates from other ditransitive constructions in terms of the structural order of non-subject arguments and the effect of weight on these arguments.

In this chapter, we will focus on the syntax of DOCs in Cantonese. Section 5.1 presents the syntactic properties of these constructions. In particular, effort is made to compare and contrast the syntax of the GIVE-construction with the syntax of other DOCs. Section 5.2 examines a previous analysis in the literature which is conducted within a different theoretical framework. Section 5.3 provides an LFG account of the similarities and differences noted in section 5.1. Section 5.4 explores the syntax of the GIVE-construction further, by considering the acquisition pattern of this construction in Cantonese and similar ditransitive constructions in other

languages which also display a peculiar order of objects. The last section in the chapter, section 5.5, concludes the chapter.

## **5.1 The Syntax of Double Object Constructions in Cantonese**

In this section, we will investigate in detail the syntax of ditransitive constructions in Cantonese. We will first provide a working definition of a DOC in the language in section 5.1.1. We will then look at the syntactic properties of DOCs – the structural order of objects in section 5.1.2; and the effect of grammatical weight on their order in section 5.1.3. We will also discuss how the objects behave under relativization in section 5.1.4; question formation in section 5.1.5; and pro-drop in section 5.1.6. Section 5.1.7 ends the section with a summary.

Throughout the section, effort is made to contrast the syntax of the GIVE-construction with that of other ditransitive constructions. We show that the GIVE-construction is the only construction whose syntactic behaviour deviates from that of other DOCs.

### **5.1.1 Double Object Constructions in Cantonese: A Definition**

As mentioned in section 3.1.2, we assume that a ditransitive construction is one with the following argument structure:

(1) V <Agent, Recipient, Theme>

There are two ways to code the recipient and theme arguments in this structure in Cantonese. The first is for them to be realized as objects, such that a double object construction results (2). Note that in such a construction, none of the NPs is formally marked:

(2) V < NP < NP (Double Object Construction)

ngo	gaau	keoi	zungman <sup>1</sup>
1.sg	teach	3.sg	Chinese
		Recipient	Theme

‘I teach him/her Chinese.’

The second is for the theme argument to map to an object, with the recipient argument preceded by *bei*<sup>2</sup> following it (3):

(3) V < Theme-NP < BEI < Recipient-NP

ngo	dai	bun	syu	bei	keoi
1.sg	pass	CL	book	BEI	3.sg
		Theme			Recipient

‘I passed him/her a/the book.’

The two types of constructions in (2) and (3) are not alternative constructions.

Each ditransitive verb is associated with one construction or the other, but not both.

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<sup>1</sup> All Cantonese examples are romanized using the rominization scheme proposed by LSHK (2003). However, all tones are omitted as they are not relevant to the discussion.

<sup>2</sup> There is no consensus in the literature as to the status of *bei* in these constructions. Some assume that it is a preposition (e.g. Tang 1998), while others argue against such a proposal (see Ross 1991 for instance). Still others coined a new term ‘co-verb’ when referring to *bei* and other similar items in other (non-ditransitive) constructions. Due to limitations of space and scope, we will not investigate this issue further, but will simply gloss *bei* in the ditransitive constructions as BEI. We take the position that it is a V, and a structure like (3) is therefore a serial verb construction (Bodomo et al. 2004; Lam 2003, 2004; Yip and Matthews 2007). It should also be pointed out that the *bei* here is phonologically identical to the verb for GIVE in the language.

There does not seem to be any ditransitive verb which can freely appear in both constructions without causing any significant change in meaning, i.e. there is no dative alternation in the language.

A classification of ditransitive verbs is shown in (4). It is based on the syntactic realization of the recipient and theme roles:

- (4) a. Verbs which can only appear in the [V < NP < NP] structure (double object construction):

*Bei* ‘give’, *gaau* ‘teach’, *fat* ‘fine’, *sau* ‘collect’, *man* ‘ask’, *daap* ‘answer’, *him/zaang* ‘owe’

- b. Verbs which can only appear in the [V < Theme-NP < BEI < Recipient-NP] structure (serial verb construction)

*Dai* ‘pass’, *cyun* ‘pass’, *paai* ‘distribute’, *waan* ‘return’, *zaau* ‘refund’, *maai5* ‘buy’, *maai6* ‘sell’, *zou* ‘lease’, *ze* ‘lend’, *daai* ‘bring’, *lo* ‘take’, *gei* ‘mail/send’, *sung* ‘give as a gift’, *dinjau* ‘e-mail’, *cyunzan* ‘fax’, *deu/paau* ‘throw’, *ling* ‘carry’, *teoi* ‘push’, *gyun* ‘donate’

In the remainder of this chapter, we will only focus on the first type of ditransitive construction, i.e. double object constructions, which are formed with verbs in (4a).

### 5.1.2 Structural Order of Arguments (GIVE vs. Others)

Cantonese, and Chinese languages in general, do not have any case-marking or agreement morphology. The relation between the head verb and its dependent(s) is not morphologically coded in any way. An argument with a particular semantic role

has a relatively fixed canonical position within a structure. Without any case-marking or agreement morphology, it is not easy to formally distinguish the arguments. The structural order of the two arguments seems to be the only mechanism to tell the arguments apart.

This is, however, more complicated than it seems. The theme argument or the recipient argument cannot be associated with a fixed position with reference to the verb in ditransitive constructions. The main problem is that the order of the arguments in a GIVE-construction is *different* from that in other ditransitive constructions. The GIVE-construction in Cantonese is the *only* ditransitive construction that displays a peculiar order of arguments:

(5) GIVE

a. Theme-NP < Recipient-NP

ngo bei-zo bun syu ngo gaaze  
 1.sg give-perf CL book 1.sg elder.sister  
 ‘I gave the book to my elder sister.’

b. \*Recipient-NP < Theme-NP

\*ngo bei-zo ngo gaaze bun syu  
 1.sg give-perf 1.sg elder.sister CL book

(6) Other ditransitive constructions

a. TEACH

(i) Recipient-NP < Theme-NP

ngo gaau siupangjau zungman  
 1.sg teach children Chinese  
 ‘I teach children Chinese.’

- (ii) \*Theme-NP < Recipient-NP  
 \*ngo gaau zungman siupangjau  
 1.sg teach Chinese children

b. OWE

- (i) Recipient-NP < Theme-NP  
 ngo zaang ngo go tungsi 3000 man  
 1.sg owe 1.sg CL colleague 3000 dollar  
 ‘I owe my colleague 3000 dollars.’

- (ii) \*Theme-NP < Recipient-NP  
 \*ngo zaang 3000 man ngo go tungsi  
 1.sg owe 3000 dollar 1.sg CL colleague

The verb *bei*<sup>3</sup> ‘give’ is the only ditransitive verb whose theme argument is adjacent to it (5a). The recipient-NP, cross-linguistically quite surprisingly, is the argument that is the furthest away from the verb. Typical ditransitive verbs like *gaau* ‘teach’ (6a) and *zaang* ‘owe’ (6b) are immediately followed by the recipient-NP, which is in turn followed by the theme-NP. For all ditransitive verbs, the recipient-NP and the theme-NP must be in a fixed order, as can be seen from the ungrammaticality of (5b), (6a(ii)) and (6b(ii)).

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<sup>3</sup> Since this chapter is about the syntax of the ditransitive construction in which this verb appears, it is worth providing the full phonological realization (including the tone) and the non-romanized forms of the verb. The verb *bei* has tone 2 in Cantonese (according to the romanization scheme by LSHK (2003)), and is usually represented by the characters 俾 *bei2* ‘give’ or 畀 *bei2* ‘give’.

### 5.1.2.1 *Nominal Status and Animacy of Post-Verbal Arguments in the GIVE-construction*

The nominal status (i.e. whether the argument is a full NP or a pronoun) or the animacy of an NP has no effect on the rigid structural order of objects in these constructions.

Consider first the GIVE-construction. The examples in (7a) show that the nominal status of the post-verbal arguments does not affect their relative order. Example (7a(i)) exhibits the canonical order in which a full theme-NP precedes a full recipient-NP. Pronominalizing the recipient argument as in (7a(ii)) does not change the order. In this example, what is particularly interesting, and cross-linguistically peculiar, is that a pronominal recipient argument is still the one that is the furthest away from the verb.

Examples (7a(iii)) and (7a(iv)) are both unacceptable. This is because, in a ‘giving’ event, themes tend to be non-human or inanimate. It is, however, generally quite difficult to pronominalize non-human animate or inanimate arguments in Cantonese. The third person pronouns in Cantonese, *keoi* ‘him/her’ for singular number and *keoidoi* ‘they’ for plural number, are not coded for animacy, but by default, pronouns are interpreted to have a human antecedent or referent. Example (7a(iv)), with two pronouns co-occurring, is unacceptable.

(7) GIVE

a. Nominal Status

- (i) When both the recipient and the theme are expressed by full NPs

[Repeating (5a)]:

Theme-NP < Recipient-NP

ngo bei-zo bun syu ngo gaaze

1.sg give-perf CL book 1.sg elder.sister

‘I gave the book to my elder sister.’

- (ii) When the recipient is expressed by a pronoun and the theme a full NP:

Theme-NP < Recipient-NP

ngo bei-zo bun syu keoi

1.sg give-perf CL book 3.sg

‘I gave him/her the book.’

- (iii) When the theme is expressed by a pronoun and the recipient a full NP:

\*ngo bei-zo keoi ngo gaaze

1.sg give-perf 3.sg 1.sg elder.sister

- (iv) When both the theme and the recipient are expressed by pronouns:

\*ngo bei-zo keoi keoi

1.sg give-perf 3.sg 3.sg

A natural question that arises from the ungrammaticality of examples like (7aiv) is how the proposition can be expressed in the language. By virtue of their ability to be realized as pronouns, both of the non-subject arguments are topical. A topical argument is very frequently pro-dropped in Cantonese. As a result, a structure with two pronominal objects which are adjacent to each other can be avoided.

A typical ‘giving’ event involves the transfer of possession of an inanimate theme to an animate recipient, as (7b(i)) shows. The order of arguments is such that the animate recipient follows the inanimate theme. An example cannot be found in which the theme is animate while the recipient is inanimate. The difficulty perhaps does not lie in syntax - the meaning of such a construction is hard to construe. Giving an animate entity to an animate recipient is possible, but in highly restricted contexts such as the one given in (7b(iii)). In this construction, the canonical order in a GIVE-construction with the recipient argument following the theme argument is still observed. Similarly, when both the theme and the recipient arguments are inanimate, the same order of post-verbal arguments is found (7b(iv)).

b. Animacy

- (i) When the recipient is animate and the theme inanimate [Repeating (5a)]:

Theme-NP < Recipient-NP

ngo bei-zo bun syu ngo gaaze  
 1.sg give-perf CL book 1.sg elder.sister  
 ‘I gave the book to my elder sister.’

- (ii) When the theme is animate and the recipient inanimate: N/A

(iii) When the both the theme and the recipient are animate:

Theme-NP < Recipient-NP

ngo bei-zo gam do jan go san boumun,  
1.sg give-perf so many person CL new department,

keoi-dei dou hai m munji  
3-PL still be NEG satisfied

‘I gave the new department so many people, but they are still not satisfied.’ [Imagine a situation where department A has to transfer a number of people to department B.]

(iv) When both the theme and the recipient are inanimate:

Theme-NP < Recipient-NP

ngo bei-zo di seoi po faa  
1.sg give-perf some water CL flower

‘I gave the flowers some water.’

The recipient-NP always follows the theme-NP in a give-construction, regardless of their nominal status and their animacy.

### ***5.1.2.2 Nominal Status and Animacy of Post-Verbal Arguments in Other DOCs***

What about the order of post-verbal arguments in other DOCs? In these constructions, the theme-NP canonically follows the recipient-NP when both NPs are full NPs (8a, 9a). Pronominalizing the recipient-NP does not affect the canonical order (8b, 9b). The unacceptability of (8c) and (9c) is due to the general difficulty to pronominalize a non-human NP. Examples (8d) and (9d) are unacceptable because of the co-occurrence of pronouns.

(8) TEACH – nominal status of post-verbal arguments

- a. When both the recipient and the theme are expressed by full NPs:

[Repeating (6a)]

Recipient-NP < Theme-NP

ngo gaau siupangjau zungman

1.sg teach children Chinese

‘I teach children Chinese.’

- b. When the recipient is expressed by a pronoun and the theme a full NP:

Recipient-NP < Theme-NP

ngo gaau keoi-dei zungman

1.sg teach 3.pl Chinese

‘I teach them Chinese.’

- c. When the theme is expressed by a pronoun and the recipient a full NP:

\*ngo gaau siupangjau keoi

1.sg teach children 3.sg

- d. When both the theme and the recipient are expressed by pronouns:

\*ngo gaau-zo keoi-dei keoi

1.sg teach-perf 3-pl 3.sg

(9) OWE – nominal status of post-verbal arguments

- a. When both the recipient and the theme are expressed by full NPs

[Repeating (6b)]:

Recipient-NP < Theme-NP

ngo zaang ngo go tungsi 3000 man

1.sg owe 1.sg CL colleague 3000 dollar

‘I owe my colleague 3000 dollars.’

- b. When the recipient is expressed by a pronoun and the theme a full NP:

Recipient-NP < Theme-NP

ngo zaang keoi 3000 man

1.sg owe 3.sg 3000 dollar

‘I owe him/her 3000 dollars.’

- c. When the theme is expressed by a pronoun and the recipient a full NP:

\*ngo    zaang   ngo    go    tungsi    keoi  
 1.sg    owe    1.sg    CL    colleague    3.sg

- d. When both the theme and the recipient are expressed by pronouns:

\*ngo    zaang   keoi    keoi  
 1.sg    owe    3.sg    3.sg

Animacy, like the nominal status of the post-verbal arguments in typical DOCs, does not affect the order of these arguments. In all cases, it is the theme-NP that follows the recipient-NP. In terms of animacy, in a ‘teaching’ event, not only does the recipient have to be animate, it has to be volitional as well. The theme, on the other hand, cannot be animate. For these reasons, a situation like the one expressed in (10a) seems to be the only one possible. In this case, the inanimate theme follows the animate recipient, which is the canonical order regardless of the animacy of these arguments. All other situations with either an inanimate recipient (10b, d), or an animate theme (10b, c) are simply implausible.

(10) TEACH - animacy of post-verbal arguments

- a. When the recipient is animate and the theme inanimate [Repeating (6a)]:

Recipient-NP < Theme-NP

ngo    gaau    siupangjau    zungman  
 1.sg    teach    children    Chinese  
 ‘I teach children Chinese.’

- b. When the theme is animate and the recipient inanimate: N/A  
 c. When the both the theme and the recipient are animate: N/A  
 d. When both the theme and the recipient are inanimate: N/A

Similarly, the meaning of the verb ‘owe’ imposes restrictions on the possible combinations of animate and inanimate entities. The recipient must be animate, as it is impossible to owe inanimate entities anything. This makes situations in (11b) and (11d) implausible. The theme can be either animate (11c) or inanimate (11a), although it is much less likely for it to be animate. In these cases, regardless of the animacy of the arguments, the theme argument always follows the recipient argument, which is the canonical order of post-verbal arguments in an OWE-construction.

(11) OWE – animacy of post-verbal arguments

- a. When the recipient is animate and the theme inanimate [Repeating (6b)]

Recipient-NP < Theme-NP

ngo zaang ngo go tungsi 3000 man  
 1.sg owe 1.sg CL colleague 3000 dollar  
 ‘I owe my colleague 3000 dollars.’

- b. When the theme is animate and the recipient inanimate: N/A

- c. When the both the theme and the recipient are animate:

Recipient-NP < Theme-NP

ngo zaang ngo go haak loeng zek maau  
 1.sg owe 1.sg CL customer two CL cat  
 ‘I owe my customer two cats.’ [Imagine a pet shop situation.]

- d. When both the theme and the recipient are inanimate: N/A

The order of post-verbal arguments in DOCs in Cantonese is very rigid. In a GIVE-construction and in this construction only, it is always the recipient argument which is the furthest away from the verb and follows the theme argument. In all

other DOCs, the recipient argument precedes the theme argument. The nominal status and animacy of the post-verbal arguments in these constructions do not change the order of these arguments.

It is, however, possible to alter the order of the recipient and theme arguments in a GIVE-construction. We shall see in the next section that grammatical weight has exactly this effect.

### **5.1.3 Grammatical Weight of Post-verbal Arguments**

The post-verbal arguments in a *bei* GIVE-construction behave differently under the effect of weight<sup>4</sup>.

#### ***5.1.3.1 Heavy Theme-NP***

We shall first investigate the effect of weight on the ordering of post-verbal arguments in a GIVE-construction:

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<sup>4</sup> That *bei* ‘give’ might behave differently under the effect of weight was pointed out by Tom Wasow.

(12) GIVE + heavy theme-NP

- a. Heavy NP remains in the same position

ngo bei-zo            **jat bun jau cung jau hau**  
1.sg give-perf    one CL    also    heavy also thick

**ge        jyujinhok        gaafosyu        keoi**  
GE<sup>5</sup>    linguistics        textbook        3.sg  
'I gave him/her a thick, heavy linguistics textbook.'

- b. Heavy NP becomes phrase-final

ngo bei-zo        keoi **jat bun jau cung jau hau**  
1.sg give-perf    3. sg one CL also heavy also thick

**ge        jyujinhok        gaafosyu**  
GE        linguistics        textbook  
'I gave him/her a thick, heavy linguistics textbook.'

- c. Heavy NP remains in the same position, with another instance of *bei* following it

ngo bei-zo        **jat bun jau cung jau hau**  
1. sg give-perf    one CL    also    heavy also thick

**ge        jyujinhok        gaafosyu        bei        keoi**  
GE        linguistics        textbook        BEI    3. sg  
'I gave him/her a thick, heavy linguistics textbook.'

From (12), it can be observed that the weight of the theme-NP does have an effect on its position relative to the recipient-NP in a give-construction. When it is heavy, it may remain in its unmarked position, which is adjacent to the verb (12a), or it may switch positions with the recipient-NP and becomes phrase-final (12b). It

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<sup>5</sup> There is no consensus as to how *ge* is glossed. Very generally, it can be considered a kind of associative marker. In this example, for instance, the noun 'linguistics textbook' is associated with the property of being heavy and thick. The whole phrase *jat bun jau cung jau hau ge jyujinhok gaafosyu* 'a thick, heavy linguistics textbook' should be analyzed as an NP.

*Ge* also marks possession, as in *keoi ge si* 'his/her matter/story'. When it does, the structure can be interpreted as a noun being associated with a possessor.

should be noted that both constructions seem roughly equally likely. The preference of one over the other appears to be a choice made by an individual speaker.

There is a third possibility if there is a heavy theme-NP in a give-construction. There may be another instance of *bei* which is inserted between the heavy theme-NP and the recipient-NP (12c). This option is not available if the theme-NP is not heavy:

- (13) \*ngo    bei-zo        bun    syu    bei    keoi  
       1.sg    give-perf    CL    book    BEI    3.sg

For other ditransitive verbs, the weight of the theme-NP does not, however, affect the order of the two post-verbal arguments. Because the theme-NP is already phrase-final in an unmarked construction, its weight does not change its position within the phrase (compare (14a) with (14b), and (15a) with (15b)):

(14) TEACH + heavy theme-NP

- a. Heavy NP remains in the same position

ngo gaau keoi **jat cin lin cin ge gudoi honjyu**  
 1.sg teach 3.sg one thousand year ago GE ancient Chinese  
 ‘I teach her the kind of ancient Chinese which was used 1000 years ago.’

- b. Heavy theme-NP switches position with recipient-NP

\*ngo gaau **jat cin lin cin ge gudoi honjyu** keoi  
 1.sg teach one thousand year ago GE ancient Chinese 3.sg

(15) OWE + heavy theme-NP

- a. Heavy NP remains in the same position

ngo zaang keoi **gei bun soeng nin sap jyut ceotbaan**  
1.sg owe 3.sg few CL last year ten month publish

**gwaanjyu gingzaihok ge syu**  
about economics GE book

‘I owe him/her a few books about economics which were published in October last year.’

- b. Heavy theme-NP switches position with recipient-NP

\*ngo zaang **gei bun soeng nin sap jyut ceotbaan**  
1.sg owe few CL last year ten month publish

**gwaanjyu gingzaihok ge syu keoi**  
about economics GE book 3.sg

### 5.1.3.2 Heavy Recipient-NP

What about the weight of the recipient argument? This is not a factor that affects the ordering of post-verbal arguments in a ditransitive construction. The recipient-NP has to be in its default position regardless of its weight – phrase-final in a GIVE-construction (16a) and adjacent to the verb in other ditransitive constructions (17a, 18a). But once again, the verb *bei* ‘give’ is unique in that there may be another instance of *bei* preceding the heavy recipient argument in the construction (16c):

(16) GIVE + heavy recipient-NP

- a. Heavy recipient-NP remains in the same position

ngo bei-zo bun syu **go go ngaamngaam**  
1.sg give-perf CL book that CL just

**haang jap lai ge leoizai**  
walk enter come GE girl

‘I gave a book to the girl who just walked in.’

- b. Heavy recipient-NP in non-canonical position

\*ngo bei-zo **go go ngaamngaam**  
1.sg give-perf that CL just

**haang jap lai ge leoizai** bun syu  
walk enter come GE girl CL book

- c. Heavy recipient-NP in canonical position, preceded by another instance of *bei*

ngo bei-zo bun syu bei **go go**  
1.sg give-perf CL book BEI that CL

**ngaamngaam haang jap lai ge leoizai**  
just walk enter come GE girl

‘I gave a book to the girl who just walked in.’

(17) TEACH + heavy recipient-NP

- a. Heavy recipient-NP in canonical position

ngo gaau **go go ngaamngaam haang jap lai ge**  
1.sg teach REL CL just walk enter come GE

**leoizai** honjyu  
girl Chinese

‘I teach the girl who just walked in Chinese.’

- b. Heavy recipient-NP in non-canonical phrase-final position

\*ngo gaau honjyu **go go ngaamngaam haang jap**  
 1.sg teach Chinese REL CL just walk enter

**lai ge leoizai**  
 come GE girl

- (18) OWE + heavy recipient-NP

- a. Heavy recipient-NP in canonical position

ngo zaang **co ngo gaaklei san lai go go tungsi**  
 1.sg owe sit 1.sg side new come REL CL colleague

gei bun syu  
 few CL book

‘I owe the new colleague who sits next to me a few books.’

- b. Heavy recipient-NP in non-canonical phrase-final position

\*ngo zaang gei bun syu **co ngo gaaklei san lai**  
 1.sg owe few CL book sit 1.sg side new come

**go go tungsi**  
 REL CL colleague

### 5.1.3.3 Heavy Recipient-NP and Heavy Theme-NP

When both the theme-NP and the recipient-NP are heavy, the give-construction once again behaves differently from a typical ditransitive construction. With the verb ‘give’, either of the two arguments can be adjacent to the verb (19a, b). A construction with another instance of *bei* in between the theme-NP and the recipient-NP is also perfectly natural (19c). But, in such a construction, the arguments can only appear in fixed positions – the first instance of

*bei* must be followed by the theme-NP, while the second instance of *bei* must be followed by the recipient-NP.

(19) GIVE + heavy theme-NP + heavy recipient-NP

a. Heavy NPs remain in canonical positions

ngo bei-zo [jat bun jau cung jau hau  
1.sg give-perf one CL also heavy also thick

ge jyujinhok gaufosyu] [go go  
GE linguistics textbook that CL

ngaamngaam haang jap lai ge leozai]  
just walk enter come GE girl

‘I gave a thick, heavy linguistics textbook to the girl who just walked into the room.’

b. Heavy NPs switch positions

ngo bei-zo [go go ngaamngaam haang  
1.sg give-perf that CL just walk

jap lai ge leozai] [jat bun jau cung jau  
enter come GE girl one CL also heavy also

hau ge jyujinhok gaufosyu]  
thick GE linguistics textbook

‘I gave a thick, heavy linguistics textbook to the girl who just walked into the room.’

- c. Inserting another instance of *bei* between a heavy theme-NP and a heavy recipient-NP

ngo bei-zo [jat bun jau cung jau hau  
 1.sg give-perf one CL also heavy also thick

ge jyujinhok gaaufosyu] bei [go go  
 GE linguistics textbook BEI that CL

ngaamngaam haang jap lai ge leozai]  
 just walk enter come GE girl

‘I gave a thick, heavy linguistics textbook to the girl who just walked into the room.’

In other ditransitive constructions, the recipient-NP must be the argument that is adjacent to the verb, with the theme-NP following it (20a, 21a). This is the only order of arguments that is allowed (20b, 21b):

(20) TEACH + heavy theme-NP + heavy recipient-NP

- a. Heavy NPs remain in canonical positions (same behaviour as TEACH + heavy theme-NP and TEACH + heavy recipient-NP)

ngo gaau [go go ngaamngaam haang jap lai ge  
 1.sg teach REL CL just walk enter come GE

leozai] [jat cin lin cin ge gudoi honjyu]  
 girl one thousand year ago GE ancient Chinese

‘I teach the girl who just walked in the kind of ancient Chinese which was used 1000 years ago.’

- b. Heavy NPs switch positions (same behaviour as TEACH + heavy theme-NP and TEACH + heavy recipient-NP)

\*ngo gaau [jat cin lin cin ge gudoi honjyu]  
 1.sg teach one thousand year ago GE ancient Chinese

[go go ngaamngaam haang jap lai ge leoizai]  
 REL CL just walk enter come GE girl

(21) OWE + heavy theme-NP + heavy recipient-NP

- a. Heavy NPs remain in canonical positions (same behaviour as OWE + heavy theme-NP and OWE + heavy recipient-NP)

ngo zaang [co ngo gaaklei san lai go go tungsi]  
 1.sg owe sit 1.sg side new come REL CL colleague

[gei bun soeng nin sap jyut ceotbaan gwaanjyu]  
 few CL last year ten month publish about

gingzaihok ge syu]  
 economics GE book

‘I owe the new colleague who sits next to me a few books about economics which were published in October last year.’

- b. Heavy NPs switch positions (same behaviour as OWE + heavy theme-NP and OWE + heavy recipient-NP)

\*ngo zaang [gei bun soeng nin sap jyut ceotbaan]  
 1.sg owe few CL last year ten month publish

gwaanjyu gingzaihok ge syu] [co ngo gaaklei san lai  
 about economics GE book sit 1.sg side new come

go go tungsi]  
 REL CL colleague

#### 5.1.4 Relativization

Example (22b) shows how the theme-NP in a monotransitive construction is relativized in Cantonese. A gap is left in the canonical position of the argument, and the relative clause is pre-nominal. The head is preceded by (i) the gapped clause, (ii) the relativization marker *go*, and (iii) the classifier of the head noun.

(22) a. A monotransitive construction

Ngo kamjat gin-dou go jan  
1.sg yesterday see-able CL person  
'I saw a person yesterday.'

b. Relativization of the theme-NP in a monotransitive construction

ngo kamjat gin-dou go go jan lai-zo  
1.sg yesterday see-able REL CL person come-perf  
'The person that I saw yesterday came.'

With respect to relativization, the arguments in a GIVE-construction behave just like those in any other ditransitive construction. In all ditransitive constructions, it is the theme argument that patterns with the theme argument in a monotransitive construction – when the theme argument is relativized on, the gap strategy is employed (23b, 24b, 25b).

The recipient argument, however, cannot be relativized using the gap strategy. A resumptive pronoun must fill the canonical position of the recipient argument, which is after both the verb and the theme-NP in the case of 'give', and immediately following the verb in all other cases, in order for the construction to be acceptable

(compare the (c) and (d) examples in (23)-(25)). The structure becomes ungrammatical if the resumptive pronoun is omitted, as shown in all of the (d) examples.

(23) a. The GIVE-construction

ngo kamjat bei-zo bun syu keoi  
 1.sg yesterday give-perf CL book 3.sg  
 ‘I gave a book to him/her yesterday.’

b. Relativisation of the theme-NP in a GIVE-construction

[ngo kamjat bei keoi go bun syu] laan-zo  
 1.sg yesterday give 3.sg REL CL book break-perf  
 ‘The book that I gave him yesterday is torn/damaged.’

c. Relativisation of the recipient-NP in a GIVE-construction

[ngo kamjat bei bun syu **keoi** go go jan] lai-zo  
 1.sg yesterday give CL book 3.sg REL CL person come-perf  
 ‘The person who I gave a book to came.’

d. Relativisation of the recipient-NP in a GIVE-construction without any resumptive pronoun

\*[ngo kamjat bei bun syu go go jan] lai-zo  
 1.sg yesterday give CL book REL CL person come-perf

(24) a. A ditransitive construction – TEACH [Repeating (6ai)]

ngo gaau siupangjau zungman  
 1.sg teach children Chinese  
 ‘I teach children Chinese.’

- b. Relativization of the theme-NP in a TEACH-construction

[ngo gaau go baan siupangjau go di zungman]hou  
 1.sg teach CL group children REL CL Chinese very

sam  
 difficult

‘The (kind of) Chinese that I teach that group of children is very difficult.’

- c. Relativization of the recipient-NP in a TEACH-construction

[ngo gaau **keoi-dei** zungman go baan siupangjau] hou  
 1.sg teach 3-pl Chinese CL group children very

cungming  
 smart

‘The group of children to whom I teach Chinese are very smart.’

- d. Relativization of the recipient-NP in a TEACH-construction without any resumptive pronoun

\*[ngo gaau zungman go baan siupangjau] hou cungming  
 1.sg teach Chinese CL group children very smart

- (25) a. A ditransitive construction – OWE [Repeating (6b(i))]

ngo zaang ngo go tungsi 3000 man  
 1.sg owe 1.sg CL colleague 3000 dollar

‘I owe my colleague 3000 dollars.’

- b. Relativization of the theme-NP in an OWE-construction

[ngo zaang ngo go tungsi go 3000 man] hai toi-min  
 1.sg owe 1.sg CL colleague REL 3000 dollar be table-top

‘The 3000 dollars which I owe my colleague are on the table.’

- c. Relativization of the recipient-NP in an OWE-construction

[ngo zaang **keoi** 3000 man] go go tungsi zau-zo  
 1.sg owe 3.sg 3000 dollar REL CL colleague

leave-perf

‘The colleague to whom I owe 3000 dollars has left.’

- d. Relativization of the recipient-NP in an OWE-construction without any resumptive pronoun

\*[ngo zaang 3000 man] go go tungsi zau-zo  
 1.sg owe 3000 dollar REL CL colleague leave-perf

### 5.1.5 Question-Formation

Both the theme and recipient arguments in a ditransitive construction can be questioned. In all cases, the question words are in situ and they appear in the position of the questioned phrase. This is why the question word *bingo* ‘who’ is phrase-final in a give-construction, while in other ditransitive constructions, the same question word is not phrase-final. Similarly, the question word *matje* ‘what’ is phrase-final in all typical ditransitive constructions, but non-phrase-final in a give-construction.

- (26) a. The GIVE-construction

ngo bei-zo bun syu keoi  
 1.sg give-perf CL book 3.sg  
 ‘I gave a book to him/her.’

- b. Questioning the theme-NP in a GIVE-construction

nei bei-zo bun syu **bingo**?  
 2.sg give-perf CL book who  
 ‘Who did you give the book to?’

- c. Questioning the recipient-NP in a GIVE-construction

nei bei-zo **matje** keoi?  
 2.sg give-perf what 3.sg  
 ‘What did you give him/her?’

(27) a. A ditransitive construction – TEACH [Repeating (6a(i))]

ngo gaau siupangjau zungman  
1.sg teach children Chinese  
'I teach children Chinese.'

b. Questioning the theme-NP in a TEACH-construction

nei gaau siupangjau **matje?**  
2.sg teach children what  
'What do you teach the children?'

c. Questioning the recipient-NP in a TEACH-construction

nei gaau **bingo** zungman?  
2.sg teach who Chinese  
'Who do you teach Chinese to?'

(28) a. A ditransitive construction – OWE [Repeating (6b(i))]

ngo zaang ngo go tungsi 3000 man  
1.sg owe 1.sg CL colleague 3000 dollar  
'I owe my colleague 3000 dollars.'

b. Questioning the theme-NP in an OWE-ditransitive construction

nei zaang nei go tungsi **matje?**  
2.sg owe 2.sg CL colleague what  
'What do you owe your colleague?'

c. Questioning the recipient-NP in an OWE-construction

nei zaang **bingo** 3000 man?  
2.sg owe who 3000 dollar  
'Who do you owe 3000 dollars to?'

### 5.1.6 Pro-drop

Cantonese allows pro-drop, even though the head verb is never cross-referenced with any of its arguments. The pro-dropped phrase has to be one that has been referred to in previous discourse. In other words, it must have topic

status.

We will first look at pro-drop in a GIVE-construction. In the (i) examples in (29) to (31), a question is given. This acts as the context for the responses in (ii) to (iv). A context is important because only the phrase that has been mentioned, or has topic status, can be pro-dropped. In (29ai), the recipient-NP is questioned and thus has focus status. The theme-NP *di syu* ‘books’, referred to in the question, becomes a topic in the responses in (29aii) to (29aiv). The answer in (29aii) is the shortest answer – only the new information, which is the recipient-NP that is being questioned in (29ai) is provided. This answer is perfectly acceptable. The clause in (29aiii) in isolation is ungrammatical because it is incomplete. But given the context in (29ai), it is acceptable as the theme-NP, which has topic status, is pro-dropped. Example (29aiv) gives the most complete answer. It is also acceptable. The examples in (29a) show that the theme-NP can be pro-dropped in a give-construction.

(29) a. Pro-drop in a give-construction – theme-NP

(i) nei bei-zo di syu bingo aa?  
2.sg give-perf CL book who prt  
‘Who did you give the books to?’

(ii) go pangjau  
CL friend  
‘(My) friend’

(iii) ngo bei-zo go pangjau  
1.sg give-perf CL friend  
'I gave (them) to a friend.'

(iv) ngo bei-zo di syu go pangjau  
1.sg give-perf CL book CL friend  
'I gave the books to a friend.'

Another context is given in (29bi). Here, the questioned phrase is the theme-NP, which has focus status. The recipient-NP, mentioned in the question, becomes a topic in (29bii) to (29biv), which are responses to this question. Once again, (29bi) is the shortest answer. Only the information that is wanted, a theme-NP, is provided. The answer in (29biii), omitting the recipient-NP which has topic status, is unacceptable. Acceptability is restored in (29biv), with the topical recipient-NP explicitly expressed. The set of examples in (29b) show that the recipient-NP cannot be pro-dropped in a give-construction.

b. Pro-drop in a give-construction – recipient-NP

(i) nei bei-zo matje keoi aa?  
2.sg give-perf what 3.SG prt  
'What did you give him/her?'

(ii) ngo di gau syu  
1.sg CL old book  
'My old books'

(iii) \*ngo<sup>6</sup> bei-zo ngo di gau syu  
1.sg give-perf 1.SG CL old book

(iv) ngo bei-zo ngo di gau syu keoi  
1.sg give-perf 1.SG CL old book 3.sg  
'I gave him/her my old books.'

We will now look at some pro-drop phenomena in other ditransitive constructions.

The examples in (30) illustrate the pro-drop possibilities for the theme and recipient arguments in a ditransitive construction with the verb *gaau* 'teach'. Similar to (29), the questions in (i) are intended to create a context for the responses in (ii) to (iv). In (30ai), the recipient-NP is the focus as it is the questioned phrase. In (30aii) to (30aiv), the theme-NP *zungman* 'Chinese' has topic status and is one of the candidates for pro-drop. Example (30aii) only provides the new information, which is the target recipient-NP, and the structure is acceptable. In (30aiii), the topical theme-NP is omitted. This does not affect the acceptability of the clause. In (30aiv), all the arguments are overtly expressed, and this response is also acceptable. The theme-NP in a ditransitive construction with the verb *gaau* 'teach' can be pro-dropped.

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<sup>6</sup> Pro-dropping the subject pronoun slightly increases the acceptability of the structure, but the structure is still not perfectly acceptable.

- (30) a. Pro-drop in a ditransitive construction – theme-NP
- (i) nei gaau bingo zungman aa?  
2.sg teach who Chinese prt  
'Who do you teach Chinese to?'
  - (ii) jat baan m sei ge siupangjau  
one CL five year-old GE children  
'A group of five-year-old children'
  - (iii) ngo gaau jat baan m sei ge siupangjau  
1.sg teach one CL five year.old GE children  
'I teach a group of five-year-old children (Chinese).'
  - (iv) ngo gaau jat baan m sei ge siupangjau zungman  
1.sg teach one CL five year.old GE children Chinese  
'I teach a group of five-year-old children Chinese.'

The context given in (30bi) is such that the theme-NP is in focus and the recipient-NP in (30bii) to (30biv) becomes a topic. Providing only the information wanted, that is, the theme-NP, in (30bii) is fine, so is expressing all the arguments in the answer in (30biv). Example (30biii) is grammatical, but it cannot serve as an acceptable answer to the question in (30bi). The only possible meaning for this example is 'I am a teacher of Chinese', with no specific reference made to who it is that the speaker teaches the language to. The meaning 'I teach them Chinese' cannot be obtained, even in the given context. From this, it can be seen that the recipient-NP cannot be pro-dropped in a ditransitive construction with the verb *gaau* 'teach'.

b. Pro-drop in a ditransitive construction – recipient-NP

- (i) nei gaau di siupangjau matje aa?  
2.sg teach CL children what prt  
'What do you teach the children?'
- (ii) zungman  
Chinese  
'Chinese'
- (iii) #ngo gaau zungman  
1.sg teach Chinese  
'I teach Chinese.' (but not 'I teach (them) Chinese.')
- (iv) ngo gaau di siupangjau zungman  
2.sg teach CL children Chinese  
'I teach the children Chinese.'

The exact same set of facts can be observed for the owe-construction. Once again, it is possible to pro-drop the theme-NP, but not the recipient-NP. The same meaning cannot be retained if the recipient-NP is omitted (31biii):

(31) a. Pro-drop in a ditransitive construction – theme-NP

- (i) lei zaang bingo 3000 man?  
2.sg owe who 3000 dollar  
'Who do you owe 3000 dollars to?'
- (ii) ngo go tungsi  
1.sg CL colleague  
'My colleague'
- (iii) ngo zaang ngo go tungsi  
1.sg owe 1.sg CL colleague  
'I owe my colleague (3000 dollars).'

(iv) ngo    zaang    ngo    go    tungsi    3000    man  
       1.sg    owe        1.sg    CL    colleague 3000    dollar  
       'I owe my colleague 3000 dollars.'

b. Pro-drop in a ditransitive construction – recipient-NP

(i) lei    zaang    lei    go    tungsi    matje?  
       2.sg    owe    2.sg    CL    colleague what  
       'What do you owe you colleague?'

(ii) 3000 man  
       3000 dollar  
       '3000 dollars'

(iii) #ngo    zaang    3000    man  
       1.sg    owe        3000    dollar  
       'I need 3000 dollars more.' (but not 'I owe (him/her) 3000 dollars.')

(iv) ngo    zaang    ngo    go    tungsi    3000    man  
       1.sg    owe        1.sg    CL    colleague 3000    dollar  
       'I owe my colleague 3000 dollars.'

### 5.1.7 Section Summary

This section has investigated the syntax of the theme argument and the recipient argument in Cantonese DOCs. We have looked at the structural order of the arguments and the effect of weight on the arguments. We have also discussed whether the two non-subject arguments in a ditransitive construction can be relativized on, questioned and pro-dropped.

The observations made in this section are summarized in the table below:

(32) Summary of All Properties

<b>Property</b> \ <b>Verb</b>	<i>bei</i> ‘give’	<i>gaau</i> ‘teach’	<i>zaang</i> ‘owe’
<b>Linear Order of Arguments</b>	Th < Rpt	Rpt < Th	
<b>Effect of Weight on Post-verbal Arguments</b>	Heavy NP (regardless of semantic role) in phrase-final position	No effect; all arguments remain in canonical positions	
<b>Relativization</b>	Th – gap (primary strategy) Rpt – resumptive pronoun		
<b>Question-Formation</b>	Either Th or Rpt		
<b>Pro-drop</b>	Th only	Th; Rpt can be omitted syntactically, but meaning changes	

Throughout the section, the syntax of the GIVE-construction is contrasted with that of other DOCs. This is because the GIVE-construction is not the prototypical DOC in Cantonese. In fact, in two respects, it is the *only* exception to DOCs in the language. First, it is the theme argument, but not the recipient argument, that immediately follows the verb ‘give’. Cantonese as a language does *not* have an exceptional order of non-subject arguments in DOCs, the verb *bei* ‘give’ in this language, and this verb *only*, does. In all other DOCs, the recipient argument is the argument that is adjacent to the verb. The theme argument is in a phrase-final position. This order is just as the one identified for DOCs in most other languages. Second, under the effect of weight, the arguments in a GIVE-construction are the only ones that can switch positions such that the heavy NP is in the final position in

the clause. Weight does not seem to matter in other DOCs.

In terms of relativization, question formation and pro-drop, the give-construction behaves in similar ways to other DOCs. The difference is between the theme argument and the recipient argument in a DOC, rather than between the GIVE-construction and all other DOCs. In terms of relativization, the theme argument in a DOC is relativized using the gap strategy, just as the theme argument in a monotransitive construction is relativized. The recipient argument, on the other hand, can only be relativized if there is a resumptive pronoun filling its canonical position. In terms of question-formation, either the theme argument or the recipient argument can be questioned. With pro-drop, it is the theme argument that can be omitted, but not the recipient argument.

In the discussion that follows, we assume that the theme argument is mapped to the unrestricted object function OBJ, while the recipient argument is mapped to the restricted object function  $OBJ_{\theta}$ .

In the next section, we present a critique of a previous analysis of Cantonese DOCs.

## 5.2 Tang (1993) - A Study on Dative Constructions in Cantonese

This section discusses a number of issues in Tang (1993), which is one of the few formal studies on dative constructions in Cantonese. In this work, Tang first categorizes dative verbs in the language into six groups. This is achieved by considering the syntactic behaviour of these verbs in the five structures listed below (Tang 1993:37):

- (33) a. V NP1 *bei* NP2 (S1)  
b. V NP1 *gwo* NP2 (S2)  
c. V NP1 NP2 (S3)  
d. V *bei* NP2 NP1 (S4)  
e. V NP2 NP1 (S5)

In each of these cases, ‘NP1’ is the ‘direct object’ and ‘NP2’ is the ‘indirect object’<sup>7</sup>. He adopts a semantic definition of ‘objects’, and for him, the ‘direct object usually refers to the inanimate object’, while the indirect object usually refers to ‘the animate object’ (Tang 1993:29).

The six groups of dative verbs that result are:

- (34) a. Group 1 (Tang 1993:37)<sup>8</sup>:
- Verbs in this group can appear in all five structures in (33).
  - Either object can be topicalized/ fronted.
  - Examples include *sung* ‘give as a gift’ and *bei* ‘give’.

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<sup>7</sup> *Bei* in (33a) and (33d) and *gwo* in (33b) are said to function as dative markers and are treated as prepositions in Tang’s analysis. The NP2 in such cases should perhaps be called ‘oblique objects’ instead of ‘indirect objects’ as Tang calls them.

<sup>8</sup> It must be pointed out that these results are derived from Tang’s acceptability judgments.

- b. Group 2 (Tang 1993:39):
  - Verbs in this group can appear in structures (33a), (33b) and (33d).
  - Only the ‘direct object’ NP1 can be topicalized.
  - Examples include *fanpui* ‘distribute’ and *zyunsung* ‘transfer’.
  
- c. Group 3 (Tang 1993:40):
  - Verbs in this group can appear in structures (33a), (33b), (33c) and (33d).
  - Only the ‘direct object’ NP1 can be topicalized.
  - Examples include *gei* ‘send/mail’ and *gaau* ‘submit’.
  
- d. Group 4 (Tang 1993:41)
  - Verbs in this group can appear in structures (33a) and (33c).
  - Only the ‘direct object’ NP1 can be topicalized.
  - Examples include *se* ‘write’ and *zyu* ‘cook’.
  
- e. Group 5 (Tang 1993:42)
  - Verbs in this group can appear in structures (33a) and (33c).
  - Verbs can appear in the structure in (33e), but the meaning is changed.
  - Only the ‘direct object’ NP1 can be topicalized.
  - Examples include *tau* ‘steal’ and *maai* ‘buy’.
  
- f. Group 6 (Tang 1993:42)
  - Verbs in this group can only appear in structure (33e).
  - Only the ‘direct object’ NP1 can be topicalized.
  - Examples include *man* ‘ask’ and *gaau* ‘teach’.

Tang then attempts to provide a theoretical account of the dative constructions in Cantonese, adopting the assumptions of Government & Binding theory (Chomsky 1981). But before we move on to his analysis, problems with the data, which serve as building blocks of this account, need to be pointed out. This will be done in section 5.2.1. Section 5.2.2 outlines the theoretical analysis proposed in

Tang (1993), and also the challenges that the analysis faces. Section 5.3.3 ends the section with a summary.

### **5.2.1 Problems with the Data**

The data presented in Tang (1993) on which his analysis is based (to be outlined in section 5.2.2) is not without problems. We consider two such problems in the following sections.

#### **5.2.1.1 *Gwo* as a ‘dative marker’**

As mentioned previously, the categorization of dative verbs depends on their ability to occur in the various structures in (33). The structure in (33b) is [V NP1 *gwo* NP2], and *gwo* is considered a dative marker like *bei*. As an independent verb, *gwo* means roughly ‘pass/ transfer’. Structure (33a) [V NP1 *bei* NP2] thus differs from (33b) only in the dative marker that is used.

It is, however, greatly questionable how widely used the dative marker *gwo* is in contemporary Cantonese. Examples such as the following are claimed to be perfectly acceptable, and further claims about the language are built on the reported acceptability of such examples:

(35) An acceptable structure according to Tang's judgment with *gwo* as the dative marker (Tang 1993:40, e.g. 14b):

ngo    gei-zo    jat    fan    laimat    gwo    keoi  
1.sg   send-perf   one   CL   present   GWO   3.sg  
(Intended meaning: 'I sent him/her a present.')

Interestingly, Tang, who does recognize the fact that the judgments are the author's own (Tang 1993:28), is not unaware of the unnaturalness of these 'acceptable' structures for some speakers (Tang 1993:36-37). The fact that similar structures with *gwo* are much less readily accepted, especially by the younger generation, is acknowledged. We conducted a search in the Hong Kong Cantonese Adult Language Corpus<sup>9</sup> (HKCAC; Leung and Law 2001), but not a single token of the structure in (35) could be found. Chin and T'sou (2005), after an investigation of older corpora in Cantonese<sup>10</sup>, find that the use of *gwo* as a dative marker has become rare after about 1910.

One of the shortcomings of using corpus data has always been the inability to show conclusively that a structure which is absent in the corpus is unacceptable or is

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<sup>9</sup> The Hong Kong Cantonese adult language corpus (HKCAC) is a corpus of transcribed spoken Cantonese. Radio programs were recorded from November 1998 to February 2000 and all the spoken data collected was transcribed. The programs were about 8 hours in length, and the transcription added up to approximately 170,000 characters (Leung and Law 2001).

<sup>10</sup> The oldest source of data that Chin and T'sou (2005) have investigated dates back to 1877. It is very difficult to obtain Cantonese sources that are significantly older than this. Cantonese was never a written variety. Even to date, all official documents are recorded in standard written Chinese, the syntax and lexicon of which perhaps resemble Putonghua more closely. The GIVE-construction, for instance, is not supposed to be represented by the Cantonese *bei*-construction in written form in the more serious genres. The standard written Chinese *kap*-construction, which is identical to the the Putonghua *ge*-construction, has to be used. In this construction, the order of objects is such that the recipient-object precedes the theme-object, unlike the order of objects in Cantonese.

unavailable in the language. But disagreeing judgments from other speakers of the language together with the corpus findings do certainly raise questions about the acceptability of a certain structure. Such a structure, then, should really be excluded from the data, especially if these data are to serve as the basis of other linguistic claims. It is, therefore, questionable whether structure (33b) should figure in the syntactic argumentation in the rest of the study.

#### **5.2.1.2 The Structure [V NP1 NP2]**

Another problem with the data in Tang (1993) is concerned with the acceptability of structures like the following, with the ‘direct object’ NP1 immediately following the verb, and the ‘indirect object’ NP2 in the phrase-final position. The judgments reported are Tang’s:

(36) Tang (1993:37, e.g. 3c)

ngo sung-zo            jat   bun   syu   keoi  
1.sg give.as.a.gift-perf one CL book 3.sg  
(Intended meaning: ‘I gave him/her a book as a gift.’)

(37) Tang (1993:40, e.g. 14c)

ngo gei-zo    jat    fan    laimat    keoi  
1.sg send    one    CL    present    3.sg  
(Intended meaning: ‘I sent him/her a present.’)

Native speakers strongly disprefer these examples<sup>11</sup>. The only verb in the language which has this structure and this structure only is the verb *bei* ‘give’:

- (38) ngo bei-zo jat bun syu keoi  
1.sg give one CL book 3.sg  
‘I gave him/her a book.’

The recipient argument, or the ‘indirect object’ using Tang’s terminology, of verbs like *sung* ‘give as a gift’ and *gei* ‘send’ must be preceded by *bei*:

- (39) ngo sung-zo jat bun syu **bei** keoi  
1.sg give.as.a.gift-perf one CL book BEI 3.sg  
‘I gave him/her a book as a gift.’

- (40) ngo gei-zo jat fan laimat **bei** keoi  
1.sg send one CL present BEI 3.sg  
‘I sent him/her a present.’

If these verbs are categorized according to their (in)ability to occur in different structures, based on the contrast in examples (38) and (39), the verbs *bei* and *sung* should belong to different categories, unlike the claim made by Tang that both belong to the same category (i.e. Group 1).

That (36) is indeed unacceptable has important consequences for the theoretical analysis that Tang proposes. This will be further discussed in the next section.

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<sup>11</sup> In a footnote in a later paper, Tang (1998) notes that, according to Bruche-Schulz and Peyraube (1993), the structure in (36) is only accepted by some speakers in certain restricted contexts.

## 5.2.2 Problems with the Theoretical Analysis

This section discusses some of the major problems with the theoretical analysis proposed in Tang (1993). These include – (i) the status of the ‘dative marker’ *bei* (section 5.2.2.1); (ii) preposition deletion (section 5.2.2.2); (iii) dative constructions and V'-reanalysis (section 5.2.2.3); and (iv) the structure of the *bei*-construction (section 5.2.2.2).

### 5.2.2.1 The Status of *Bei* in a [V NP1 *bei* NP2] Structure

In structure (33a), *bei* as a marker of the recipient argument is treated as a preposition in Tang (1993). He provides two pieces of evidence to support this view, both of which can be argued to be evidence for the view that *bei* in this case is a verb and the [V NP *bei* NP] structure constitutes a serial verb construction (SVC).

The first piece of evidence that is proposed is that the subcategorization frame of *bei* in such a structure is different from that of *bei* as a main verb, which means ‘give’. Tang argues that if ‘dative marker’ *bei* was a verb, it should subcategorize for two non-subject arguments and the following structure should be acceptable:

(41) Tang (1993:52, e.g. 4b)

\*ngo gei-zo jat fan laimat bei [jat hap tong] [keoi]  
1.sg send-perf one CL present BEI one CL candy 3.sg

That (41) is unacceptable does not prove anything regarding the categorial status of *bei*. The alternative view, which analyzes the whole structure as an SVC and considers *bei* as a verb, can equally account for this. It has been shown and is quite widely recognized that in an SVC, the overall a-structure is not the same as the individual a-structures contributed by the individual verbs in the series (see, for instance, Alsina 1994, 1996 among many others). Furthermore, the total number of arguments does not have to be the sum of the number of arguments subcategorized by the verbs. It is beyond the scope of the present study to go into the details of the a-structure of SVCs. See Alsina (1994, 1996), Andrews and Manning (1999), Bodomo (1997) and Butt (1995), for instance, for analyses of complex predicates (within the LFG framework). That the marker *bei* that precedes the recipient argument does not behave like the ‘ordinary’ ditransitive verb *bei* does not in any way show that it is a preposition rather than a verb in an SVC.

Another piece of evidence provided in Tang for the status of ‘dative marker’ *bei* as a preposition comes from examples like (42). The claim is that if *bei* was a verb, there would not be any reason why modifying a verb by the negation marker *m* would result in unacceptability, as in (42):

- (42) Tang (1993:53, e.g. 7a)
- |       |      |     |         |     |     |      |
|-------|------|-----|---------|-----|-----|------|
| *keoi | gei  | fuk | waa     | m   | bei | ngo  |
| 3.sg  | send | CL  | picture | NEG | BEI | 1.sg |

Once again, an SVC analysis also provides an explanation for this. As is commonly known of serializing languages, all the component ‘parts’ in an SVC have to be understood as being in the same polarity (Alsina 1994, 1996; Bodomo 1997). The structure in (42) is unacceptable because the first component *gei fuk waa* ‘sent the picture’ is affirmative, while the second component *m bei ngo* ‘(did) not give me’ has the opposite polarity and is negative. That *bei* cannot be immediately preceded by a negation marker does not prove that it is not a verb – it could well be one of the verbs in an SVC and the polarity of the whole construction is signalled by the presence or absence of the negation marker which normally precedes the first verb in an SVC in Cantonese (Lam 2003, 2004).

To summarize, the two pieces of evidence which attempt to show that *bei* in a [V NP1 *bei* NP2] structure is not a verb and thus should be analyzed as a preposition are not valid. For the reasons given above, the possibility of *bei* as a verb in this structure cannot be eliminated<sup>12</sup>. Besides, even if it was not a verb, of all the syntactic categories available in the language, there does not seem to be any logical reason to assert that it is a preposition.

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<sup>12</sup> There is great controversy as to whether *bei* and other similar constituents should be analyzed as verbs or prepositions. Matthews and Yip (1994:60-62) give a general overview of the problem in Cantonese. Ross (1993) discusses the same problem in Mandarin in greater detail. McCawley (1992) supports the view that they should best be treated as verbs and structures like [V NP *bei* NP] are in fact SVCs in Mandarin.



The preposition *bei* can be deleted and replaced by the null preposition  $\emptyset$  because the NP *keoi* ‘him/her’ is assigned a theta role by both the preposition *bei* (before it is dropped) and the verb *sung*, which is ditransitive in nature and assigns two non-agent theta roles, one to the argument *jat bun syu* ‘a book’ and the other to the argument *keoi* ‘him/her’. The preposition *bei* then becomes ‘thematic[ally] redundant’ (Tang 1993:61) and can be freely omitted. The question, however, is why the structure would still (assumed to) be grammatical if the NP *keoi* ‘him/her’ does indeed receive *two* theta roles. This seems to be an obvious violation of the  $\theta$ -criterion.

Given this hypothesis, what is even more puzzling is the grammaticality of the structure with *bei* present, i.e. when it is not dropped:

(46) [Repeating (39)]

ngo	[ <sub>VP</sub>	sung-zo	jat	bun	syu	[ <sub>PP</sub>	<b>bei</b>	keoi	]]
1.sg	give.as.a.gift-perf	one	CL	book		BEI		3.sg	

‘I gave him/her a book as a gift.’

The structure of (46) is grammatical, even though (i) there is a violation of the  $\theta$ -criterion, *and* (ii) general economy constraints are not satisfied, i.e. there is a ‘thematic[ally] redundant’ constituent in the structure.

The hypothesis outlined in this section is implausible due to both formal reasons and problems with the data – the key example on which the hypothesis is built is simply an unacceptable structure in the language.

### 5.2.2.3 *V' Reanalysis Revisited - the Structure of Cantonese Dative Constructions*

Recall the *V'* Reanalysis rule proposed in Larson (1990) which aims at accounting for the structure of DOCs in English (refer back to section 3.3.4 for details). Tang (1993) assumes nearly identical (but slightly more complicated) structures for the following phrases:

- (47) a. Tang (1993:74, e.g. 8a)
- |                |     |     |            |     |      |
|----------------|-----|-----|------------|-----|------|
| sung           | jat | bou | zidin      | bei | keoi |
| give.as.a.gift | one | CL  | dictionary | BEI | 3.sg |
- ‘gave him/her a dictionary as a gift’
- b. Tang (1993:74, e.g. 8b)
- |                |     |      |     |     |            |
|----------------|-----|------|-----|-----|------------|
| sung           | bei | keoi | jat | bou | zidin      |
| give.as.a.gift | BEI | 3.sg | one | CL  | dictionary |
- ‘gave him/her a dictionary as a gift’

Adopting a similar analysis for the DOCs in Cantonese is implausible, as the original proposal by Larson (1990) is not without problems. Refer to section 3.3 for a detailed discussion of the rule, and the problems that that are associated with the rule and Larson’s analysis in general.

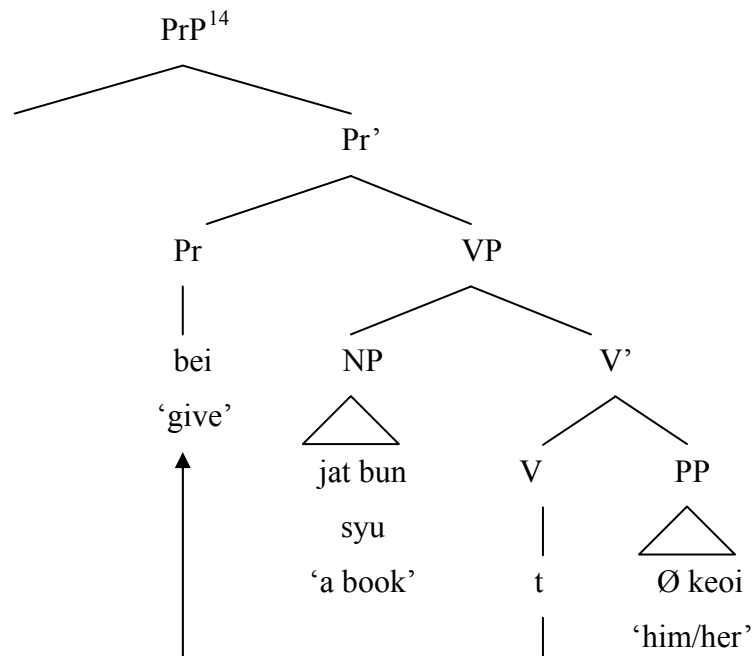
We shall focus on the structure of the dative construction with the verb *bei* ‘give’ in the next section.

#### 5.2.2.4 The Structure of the *Bei* ‘Give’ Construction

One apparent advantage for Tang (1993) to adopt Larson’s (1990) proposal of the D-structure of dative constructions is that the structure of the *bei*-construction can be accounted for fairly straight-forwardly. Recall from section 5.1 that the verb *bei* ‘give’ is the only verb in the language which is immediately followed by a theme argument, which is in turn followed by a recipient/ goal argument. Tang, however, claims that *bei* is in the same category as the verb *sung* ‘give as a gift’. Let us now extend the analysis for a structure with *sung* to the *bei*-construction, since the structure for such an anomalous verb has not been given in Tang.

The *bei*-construction would have the D-structure as shown in (48):

(48) Extending the structure in Tang (1993:74, e.g. 8a) to the *bei*-construction

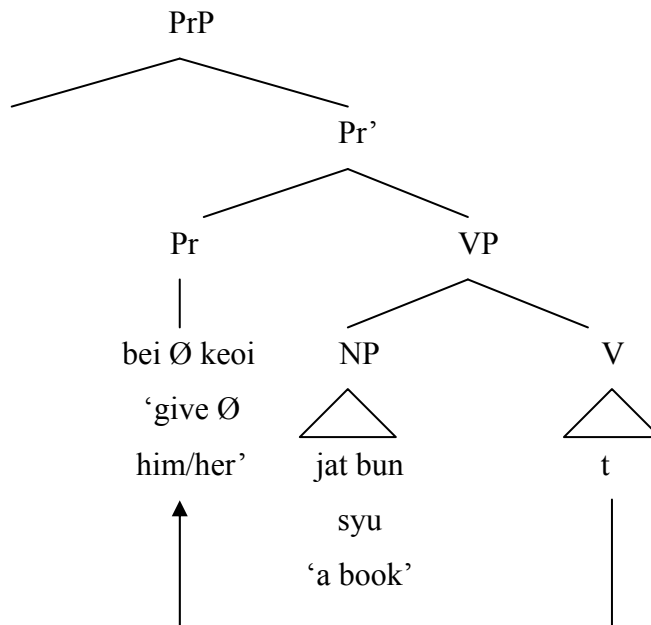


<sup>14</sup> A ‘pronoun phrase (PrP)’ is assumed and it dominates VP. The V moves into the head of PrP, which is Pr, instead of moving into another V. No justification, however, has been provided for this.

Similar to the verb *sung* ‘give as a gift’, the verb *bei* ‘give’ is assumed to originate in V, which takes a PP complement and an NP specifier. The PP in this case, however, must be headed by a null preposition because the string \*[<sub>VP</sub> *bei* [<sub>PP</sub> *bei* NP]] is rejected for phonological reasons – two identical syllables cannot be in close proximity with each other (Tang 1993:37). Since the preposition can be optionally omitted (see section 5.2.2.2), we will assume that the preposition must be dropped and replaced by a null preposition in this case for phonological considerations. The verb *bei* moves from V to Pr. The resulting structure *bei jat bun syu keoi* ‘give him/her a book’ is acceptable.

Another possibility is for the V’ reanalysis rule to apply.

(49) Extending the structure in Tang (1993:74, e.g. 8b) to the *bei*-construction



V', which consists of [V PP], is reanalyzed to V. V, again, moves to Pr. This structure is unacceptable (although it is not considered so according to Tang), and there does not seem to be any relevant constraints which would rule out this structure. Such a structure is not completely impossible, as the structure greatly increases in acceptability if the NP increases in weight (see section 5.1.3). The movement operation, if one adopts a transformational approach, seems to be sensitive to the (relative) weight of the NPs, but this has not been taken into consideration in Tang's analysis. Any plausible account of dative constructions must be able to account for this.

### 5.2.3 Section Summary

We have shown that there are a number of problems with the analysis of dative constructions proposed in Tang (1993). There are problems with both the data used and the theoretical analyses given. In terms of the data, the acceptability of many examples, some of which serve as exemplar examples for formal syntactic arguments, is greatly questioned. As for the formal analysis, at least four problems can be pointed out. First, the categorial status of *bei* in the structure [V NP1 *bei* NP2] is controversial. While Tang attempts to show that it is a preposition, the evidence that is given can equally be taken as evidence for *bei* as a verb in a serial verb

construction. The lack of convincing evidence to show that *bei* and other similar elements are indeed a preposition weakens the other theoretical arguments which build crucially on this assumption. Of course, analyses such as preposition deletion and V' reanalysis are not without weaknesses of their own. It is also greatly surprising to find that, in a piece of work dedicated to dative constructions in Cantonese, the *bei*-construction, which should be considered a dative construction and the only one with the structure [V NP1 Ø NP2] under Tang's assumptions, has received very little attention. Extending the analysis proposed to account for the facts of the *bei*-construction has also been shown to be unsatisfying, because of the inability of the analysis to take into account the effect of grammatical weight on the order of objects in this particular construction.

In the next section, we propose two more straight-forward alternatives which successfully capture the order of the objects in the DOCs in Cantonese, while taking into consideration the important impact that weight has on the order of objects in the *bei*-construction.

### 5.3 Capturing the Order of Non-Subject Arguments in DOCs

It has been shown in the section 5.1 how a GIVE-construction in Cantonese, the *bei*-construction, behaves similarly or differently from other typical DOCs. It is interesting to note that the *bei*-construction only differs from other DOCs in the canonical order of the post-verbal arguments and the order of these arguments under the effect of weight. Both of these are c(onstituent)-structure properties. In terms of f(unctional)-structure properties, such as relativization, question-formation and pro-drop, the *bei*-construction patterns with any other DOC in the language.

Since the differences are essentially c-structure differences, they should be captured at the level of c-structure. Consider again the possible orders of post-verbal arguments in DOCs (51). We assume that the restricted object OBJ bears the theme role, while the restricted object OBJ<sub>θ</sub> has the recipient role (50):

(50) a-structure:	< Ag,	Rpt,	Th>
f-structure:		OBJ <sub>θ</sub>	OBJ

(51) C-structure variations in Cantonese DOCs

a. The order of post-verbal arguments in typical DOCs (e.g. the TEACH-construction, the OWE-construction):

(i) Canonical order (the only possible order, regardless of the weight of the arguments):

V < OBJ<sub>θ</sub> < OBJ

- b. Possible orders of post-verbal arguments in the give-construction (the heavy constituent is shown in bold):
- (i) Canonical order:  
V < OBJ < OBJ<sub>θ</sub>
  
  - (ii) When the **OBJ** is heavy:  
V < **OBJ** < OBJ<sub>θ</sub>  
V < OBJ<sub>θ</sub> < **OBJ**
  
  - (iii) When the **OBJ<sub>θ</sub>** is heavy:  
V < OBJ < **OBJ<sub>θ</sub>**
  
  - (iv) When both **OBJ** and **OBJ<sub>θ</sub>** are heavy:  
V < **OBJ** < **OBJ<sub>θ</sub>**  
V < **OBJ<sub>θ</sub>** < **OBJ**

The order of post-verbal arguments in most DOCs is fixed. The GIVE-construction is the only exception not only in the canonical order of post-verbal arguments in the construction, but also in terms of the possible orders of these arguments under the effect of weight. When the c-structure node associated with OBJ (and similarly with OBJ<sub>θ</sub>) is not in its canonical position, it has to be heavy.

In the remainder of this section, we show how all of these facts can be accounted for within the LFG framework. There are two proposals - (i) by formulating a VP rule with specific functional annotations designed especially for the verb *bei* ‘give’ (section 5.3.1); or, (ii) by making relevant specifications in the lexical entry of the verb *bei* ‘give’ (section 5.3.2).

### 5.3.1 Formulating the VP Rule

One way to think about the c-structure variations observed is to say that, with reference to the c-structure position of the OBJ<sub>θ</sub>, the OBJ may have two positions, one preceding OBJ<sub>θ</sub> and the other following OBJ<sub>θ</sub>. This, of course, is not a type of alternation between two possible structures which express the same semantic content. The position of the OBJ is strictly a lexical property of the verb in question. For most typical verbs that allow double objects, OBJ follows OBJ<sub>θ</sub> at c-structure and the weight of the c-structure nodes associated with these GFs bears no significance to the positioning of the objects. This is the only order allowed. The partial VP rule in (52) captures this:

(52) Partial VP rule for most DOCs (excluding the give-construction)

$$\begin{array}{cccc} \text{VP} & \rightarrow & \text{V} & \text{NP} & \text{NP} \\ & & \uparrow=\downarrow & (\uparrow\text{OBJ}_\theta)=\downarrow & (\uparrow\text{OBJ})=\downarrow \end{array}$$

The rule has to be modified in order to take into account the facts associated with the GIVE-construction. Two peculiarities distinguish the GIVE-construction from all other DOCs in Cantonese. First, its OBJ must precede the OBJ<sub>θ</sub> at c-structure. This motivates the inclusion of another OBJ-NP position in the rule in

(53):

(53) Partial VP rule for most DOCs

$$\begin{array}{cccccc} \text{VP} & \rightarrow & \text{V} & \text{NP} & \text{NP} & \text{NP} \\ & & \uparrow=\downarrow & (\uparrow\text{OBJ})=\downarrow & (\uparrow\text{OBJ}_\theta)=\downarrow & (\uparrow\text{OBJ})=\downarrow \\ & & & (\uparrow\text{PRED FN}) = \text{bei} & & (\uparrow\text{PRED FN}) \neq \text{bei} \end{array}$$

This position is, however, reserved for the OBJ of the GIVE-construction. The constraint  $((\uparrow\text{PRED FN}) = \text{bei} [\text{'give'}])$  specifies this. The OBJ of all other DOCs is linked to the NP that follows  $\text{NP-OBJ}_\theta$ , as indicated by the constraint  $((\uparrow\text{PRED FN}) \neq \text{bei})$ . The rule guarantees that for any given verb which occurs in a DOC, the OBJ function has one and only one possible position, i.e. there is no alternation. There is not any verb that would satisfy the constraints  $((\uparrow\text{PRED FN}) = \text{bei})$  and  $((\uparrow\text{PRED FN}) \neq \text{bei})$  at the same time, and thus the OBJ in a DOC will be in one of the two possible positions, but not both. Besides, the more general well-formedness constraint on f-structure, the Uniqueness Condition, ensures that any grammatical function, including OBJ, will not have more than one value for its PRED feature.

The other peculiarity is related to weight. The phrase-final OBJ position is available to the OBJ in the GIVE-construction, provided that the NP linked to this OBJ function is heavy (51b). Providing a precise or formal definition of the notions of ‘weight’ or ‘heaviness’ would be beyond the scope of this thesis. These terms are merely used as cover terms to refer to much more complicated notions. See Wasow (2002) a comprehensive overview of the issues related to the definition of ‘weight’ and ‘heaviness’.

To incorporate the fact that the OBJ of a *bei*-construction may follow  $\text{OBJ}_\theta$  when it is heavy, the rule in (53) is further modified as follows:



(55) Partial lexical entry for the verb GIVE in Cantonese

bei      V    ( $\uparrow$ PRED) = 'bei < -, -, - >'

( $\uparrow$ PRED ARGS  $\varepsilon$ ) = %arg<sub>a</sub>

(%arg<sub>a</sub> role) = Rpt

(%arg<sub>a</sub> GF) = OBJ <sub>$\theta$</sub>

CAT (%arg<sub>a</sub>) = { NP, N', N }

( $\uparrow$ PRED ARGS  $\varepsilon$ ) = %arg<sub>b</sub>

(%arg<sub>b</sub> role) = Th

(%arg<sub>b</sub> GF) = OBJ

CAT (%arg<sub>b</sub>) = { NP, N', N }

{ %arg<sub>b</sub> <<sub>f</sub> %arg<sub>a</sub> |

%arg<sub>a</sub> <<sub>f</sub> %arg<sub>b</sub>

(%arg<sub>b</sub> weight) = heavy }

ARGS = { ARG1 | ARG2 | ... | ARG<sub>n</sub> }

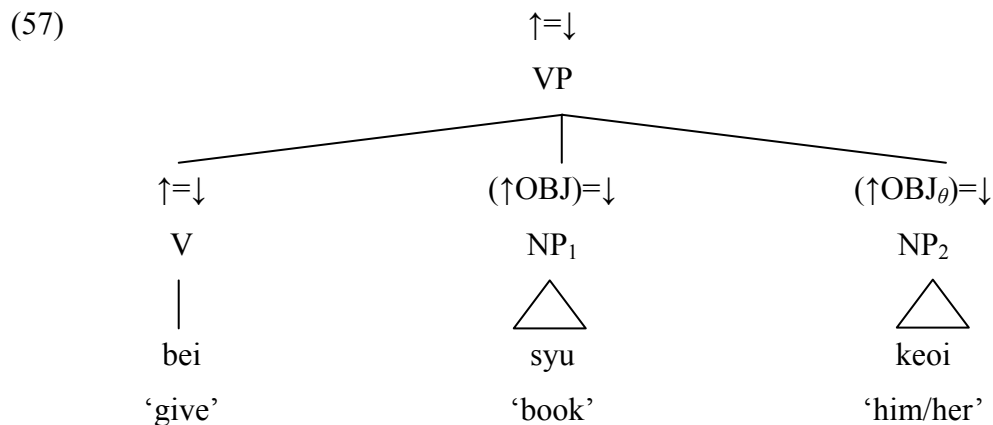
The word *bei* is a verb which requires three arguments. One of the arguments in the unordered set of arguments ARGS is labelled 'arg<sub>a</sub>'. This argument has a semantic role of recipient, and a GF of OBJ <sub>$\theta$</sub> . The equation (CAT (%arg<sub>a</sub>) = { NP, ... }) specifies that the set of c-structure nodes that may link to this GF includes NP, N' and N. Similarly, another argument in ARGS is labelled 'arg<sub>b</sub>', which has a semantic role of Th, a GF of OBJ and may be mapped onto by the set of nodes { NP, N', N }.

The most crucial equation in the lexical entry of the verb *bei* 'give' is (%arg<sub>b</sub> <<sub>f</sub> %arg<sub>a</sub>), which states that 'arg<sub>b</sub> f-precedes arg<sub>a</sub>'. More straightly-forwardly, in a DOC whose verb is *bei* 'give', the OBJ must f-precede OBJ <sub>$\theta$</sub> , i.e. all the c-structure

nodes linked to OBJ have to precede those linked to OBJ<sub>θ</sub> at c-structure. It is the presence of this constraint which distinguishes the verb *bei* ‘give’ from all other ditransitive verbs. A definition of functional precedence is given below:

- (56) Functional precedence (Kaplan and Zaenen 1989, in Dalrymple 2001:172)<sup>15</sup>:  
*ff-precedes g* ( $f <_f g$ ) if and only if for all  $n_1 \in \emptyset^{-1}(f)$  and for all  $n_2 \in \emptyset^{-1}(g)$ ,  $n_1$  c-precedes  $n_2$ .

Only a *bei*-construction with the following order of objects at c-structure would satisfy the constraint ( $\%arg_b <_f \%arg_a$ ) – all the nodes linked to  $arg_b$  whose GF is OBJ, namely the nodes NP<sub>1</sub> and its head N<sub>1</sub>, precede those linked to  $arg_a$  whose GF is OBJ<sub>θ</sub>, i.e. the nodes NP<sub>2</sub> and N<sub>2</sub>:



The effect of weight on the objects in a *bei*-construction is specified by the constraints ( $\%arg_a <_f \%arg_b$ ) and ( $(\%arg_b \text{ weight}) = \text{heavy}$ ), which have to be satisfied together if the constraint ( $\%arg_b <_f \%arg_a$ ) is not satisfied. All the nodes

<sup>15</sup> Bresnan (2001) has a slightly different definition of functional precedence:

(i) Functional precedence (Bresnan 2001, in Dalrymple 2001:174):

*ff-precedes g* if the rightmost node in  $\emptyset^{-1}(f)$  precedes the rightmost node in  $\emptyset^{-1}(g)$ .

In the present discussion, the choice of definition does not have any effect on the analysis.

associated with  $\text{arg}_a$  whose GF is  $\text{OBJ}_\theta$  may precede those linked to  $\text{arg}_b$  whose GF is OBJ if and only if  $\text{arg}_b$  is heavy in grammatical weight. The word ‘heavy’ here is merely taken as a label for the notion of the heaviness of a node at c-structure, the accurate formal formulation of which is not the focus of the current discussion.

The (partial) lexical entry for the other ditransitive verbs in the languages is given below as a lexical template, which can be instantiated by the different semantic forms associated with the verbs:

(58) Partial lexical template for ditransitive verbs other than GIVE in Cantonese

$V_{\text{Ditrans}}$  V ( $\uparrow\text{PRED}$ ) = ‘V < -, -, - >’

$(\uparrow\text{PRED ARG}_s \varepsilon) = \%arg_a$

$(\%arg_a \text{ role}) = \text{Rpt}$

$(\%arg_a \text{ GF}) = \text{OBJ}_\theta$

$\text{CAT} (\%arg_a) = \{ \text{NP}, \text{N}', \text{N} \}$

$(\uparrow\text{PRED ARG}_s \varepsilon) = \%arg_b$

$(\%arg_b \text{ role}) = \text{Th}$

$(\%arg_b \text{ GF}) = \text{OBJ}$

$\text{CAT} (\%arg_b) = \{ \text{NP}, \text{N}', \text{N} \}$

$\%arg_a <_f \%arg_b$

$\text{ARGS} = \{ \text{ARG}_1 \mid \text{ARG}_2 \mid \dots \mid \text{ARG}_n \}$

The last constraint  $\%arg_a <_f \%arg_b$  states that, for each of these verbs, it is the recipient-object that precedes the theme-object. The constraints on weight are omitted, as the issue of grammatical weight has no bearing on the syntax of ditransitive constructions formed by these verbs.

### 5.3.3 Section Summary

We have presented in this section two analyses within the LFG framework to account for the anomalous order of objects in a *bei* GIVE-construction in Cantonese. Both seem to work equally well, and are able to capture the observations accurately. At this point, neither can be said to be a better analysis than the other. We will not make a choice between them now, but will simply treat them as alternative analyses of the same phenomenon. Perhaps in future research, a better-informed choice can be made when we learn more about the *bei*-construction and the other ditransitive constructions in the language.

In the next section, we shall see that Cantonese is not alone in displaying a peculiar order of objects in its GIVE-construction. This has been observed in a number of other languages as well. We shall consider the GIVE-construction in each of these languages.

## 5.4 More on the Order of Objects in a GIVE-Construction

In this section, we explore a number of facts that may contribute to our understanding of the order of objects in a Cantonese GIVE-construction, where it is the theme-object that is adjacent to the verb, not the recipient-object. We first report on a study on the acquisition of the anomalous GIVE-construction in section 5.4.1.

We then show that the same order of objects is also attested in other languages in section 5.4.2.

#### **5.4.1 Facts from Language Acquisition**

Yip and Matthews (2007) discuss the acquisition pattern of the *bei*-construction in Cantonese (see also Chan 2003). Their data is obtained by considering the constructions in which *bei* can be found, which they term ‘*bei*2 datives’, in eight monolingual Cantonese-speaking children in Cancorp (Lee et al. 1996). Their findings reveal that the canonical order of objects in the GIVE-construction in Cantonese, in which the theme-object precedes the recipient-object, is difficult for children to acquire.

First, of the eight monolingual Cantonese-speaking children, only five have produced a full *bei*-construction, i.e. a construction with the verb *bei* ‘give’, the recipient argument and the theme argument overtly expressed, during their periods of study. A total of thirty-three tokens of this construction have been found, but in the majority of them (63.6%), the order of objects is non-canonical, i.e. the recipient-object precedes the theme-object (Yip and Matthews 2007:205-208, based on Chan 2003). The canonical order of objects with the theme-object preceding the recipient-object is attested less frequently (36.4%).

Furthermore, not only is the non-canonical order attested more frequently, it is also almost invariably the order that first emerges in children's speech. Considering the five children who have produced a full *bei*-construction, two children have never produced a single token of the construction with the objects in the target order during their periods of study. For the other three children, in the speech of two of them, the non-canonical order of objects in the *bei*-construction is attested before the canonical order, while in the third child's speech, both orders are attested at the same time.

The large number of tokens and the almost invariably earlier emergence of the *bei*-construction with the non-canonical order of objects found in children's speech are quite surprising, given the fact that this particular pattern is rare even in adults' speech, i.e. the input. Chan (2003:55, in Yip and Matthews 2007:209) has found that the order of objects with the recipient-object preceding the theme-object is attested in only 9.33% of the *bei*-constructions in the Hong Kong Cantonese Adult Language Corpus (HKCAC, Leung and Law 2002).

Yip and Matthews (2007:209-212) suggest that one of the possible reasons for this may be the 'input ambiguity' that is triggered by the structure of relative clauses. As mentioned in section 5.1.4, in Cantonese, the relative clause is prenominal and the theme argument is relativized with the gap strategy. As a result, when the theme



anomalous (as we have shown in section 5.1) and children tend to overgeneralize the order of objects in this particular construction from the more prototypical order that they encounter in all other ditransitive constructions. It would be interesting to verify this by considering the order of objects in other ditransitive constructions in Cancorp, and compare the frequencies and structures in these DOCs with those which have been observed for the *bei*-construction. We leave this as an area for future research.

In the next section, we show that the order of objects with the theme-object preceding the recipient-object, although cross-linguistically non-prototypical, is attested in (varieties of) languages other than Cantonese.

#### **5.4.2 The Cross-linguistically Non-prototypical Order of Objects in Other Languages**

The order of objects as observed in the Cantonese GIVE-construction, where it is the theme argument that immediately follows the verb and the recipient argument is the argument that is furthest away from the verb, is cross-linguistically unusual. Interestingly, this particular order of objects is also attested in a number of other (varieties of) languages. In this section, we consider the DOCs which exhibit this non-prototypical order of objects in five different varieties of languages. These

include - (i) Ancient Chinese (section 5.4.2.1); (ii) Zhuang (section 5.4.2.2); (iii) Thai (section 5.4.2.3); (iv) Ewe (section 5.4.2.4); and, (v) Lancashire English (section 5.4.2.5).

#### **5.4.2.1 Ancient Chinese**

Phua (2005) has conducted an extensive study on dative constructions in Ancient Chinese. In the study, four patterns of dative constructions have been identified, which the author attributes to Peyraube (1986, 1987, 1988). Of these, two are ditransitive constructions (59c, 59d):-

(60) Dative constructions in Ancient Chinese (Phua 2005:4-5)

- a. Verb + Direct Object + *yu* + Indirect Object<sup>16</sup>
- b. *yi* + Direct Object + Verb + Indirect Object<sup>17</sup>
- c. Verb + Indirect Object + Direct Object
- d. Verb + Direct Object + Indirect Object

The following examples have been provided as an illustration of the pattern in (60d)<sup>18</sup>:

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<sup>16</sup> The word *yu* is glossed as ‘dative’ in Phua’s work. The word is no longer in use in modern day Chinese. Some (e.g. Peyraube 1997) gloss it as ‘give’ when it is used as a full lexical verb.

<sup>17</sup> Phua glosses *yi* as ‘instrumental’. Similar to *yu*, it is no longer found in modern day Chinese and a contemporary lexical meaning is not available.

<sup>18</sup> See also Peyraube (1997:120-121, e.g. 36-38) for similar examples.

(61) Ditransitive constructions in Ancient Chinese with the theme-object preceding the recipient-object

a. Example from *Zuozhuan:Ding.3*<sup>19</sup> (Phua 2005:5, e.g. 4)

qie ma er xian zhi zichang  
steal horse and offer prn Zichang  
'To steal a horse and offer it to Zichang.'

b. Example from *Hanfeizi:Yulao*<sup>20</sup> (Phua 2005:160, e.g. 8)

de pu yu er xian zhi zihan  
receive uncut jade and offer prn Zihan  
'He offered the uncut jade to Zihan after receiving it.'

The second conjunct in these two examples have the same structure. The verb in the second conjunct *xian* 'offer' has two objects. The theme argument is realized by the pronoun *zhi*, and this NP immediately follows the verb. The recipient argument is expressed as a full NP (a proper noun), and this object follows both the ditransitive verb and the theme-NP. This is precisely the order of objects that is found in the *bei*-construction in present day Cantonese<sup>21</sup>.

The similarity between the OFFER-construction in Ancient Chinese and the GIVE-construction in Cantonese is that this order of objects was also anomalous in Ancient Chinese, with this order being seemingly peculiar to the verb *xian* 'offer'

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<sup>19</sup> *Zuozhuan* is a historical text in Ancient Chinese and was compiled in around 400 B.C. The romanization of this example is based on its Putonghua pronunciation, as found in Phua's work.

<sup>20</sup> *Hanfeizi* is a collection of the works written by Han Fei in around 250 B.C. on the philosophy of law (very generally).

<sup>21</sup> It must, however, be pointed out that this particular of objects in the OFFER-construction may be a result of a syntactic constraint in Ancient Chinese on pronominal arguments that such NPs must be adjacent to the verb. Given that only two examples of this type have been found, and both do involve a pronominal theme which immediately follows the ditransitive verb, this possibility cannot be completely eliminated. Future research is needed on the distribution of the pronoun *zhi* in Ancient Chinese.

(Peyraube 1988, in Phua 2005:165-166). The two constructions differ, however, in that the OFFER-construction itself was rare (Phua 2005:167-168), unlike the GIVE-construction in Cantonese. Thus, the anomaly of the order of objects in an OFFER-construction might partly be due to the rarity of the construction itself - a peculiar pattern of objects was observed in a construction that was not found frequently. In the Cantonese GIVE-construction, however, the peculiar order of objects is found more frequently in the language because of the high frequency of this construction.

Although the ditransitive verb whose objects exhibit an anomalous order in Ancient Chinese was not GIVE, and the OFFER-construction was not frequently found in the classical texts, that the pattern with the theme-object preceding the recipient-object was attested is significant.

#### **5.4.2.2 *Zhuang***

Zhuang is a Tai-Kadai language that is spoken by the largest ethnic minority group, which is also referred to as Zhuang, in the southern province of China Guangxi. There are a number of varieties within the Zhuang language, and are usually broadly classified into the northern Zhuang ones and the southern Zhuang ones. In this section, we briefly survey the order of objects in the GIVE-construction

and other DOCs in a northern Zhuang variety, which is spoken in areas in and around the town Mashan, and a southern Zhuang variety, which is spoken in and around the town Qinzhou<sup>22</sup>.

Consider first the DOCs in Mashan Zhuang:

(62) DOCs in the variety of Zhuang spoken in and around Mashan

a. With the verb *haengj* ‘give’

(i) When the recipient is animate and the theme is inanimate

de haengj [gou][song bwnj saw]  
3.sg give 1.sg two CL book  
‘S/he gives me two books.’

(ii) When both the recipient and the theme are animate

de haengj [aebaq de] [daeglwg de]  
3.sg give father 3.sg child.m 3.sg  
‘S/he gives his/her father his/her baby boy.’

(iii) When both the recipient and the theme are animate, and the recipient is pronominal

de haengj [gou][daeglwg de]  
3.sg give 1.sg child.m 3.sg  
‘S/he gives me his/her baby boy.’

With the verb *haengj* ‘give’, the recipient-object always precedes the theme-object, regardless of the (relative) animacy and the nominal status of the two objects. Even in examples like (62a<sub>ii</sub>) and (62a<sub>iii</sub>), where the two objects are equally animate, the only interpretation that is available is for the NP that is immediately following the verb to be interpreted as bearing the recipient role, and

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<sup>22</sup> I thank Adams Bodomo, Yanhong Pan and Yanqin Pan for their help with the data in Zhuang.

the one that is further away from the verb bears the theme role.

In other DOCs, the same order of objects is attested:

b. With the verb *son* ‘teach’

de son [gou][hivwnh]

3.sg teach 1.sg Chinese

‘S/he teaches me Chinese.’

c. With the verb *cam* ‘ask’

de cam [lauxsae][song ndaen vwnxdih]

3.sg ask teacher two CL question

‘S/he asks the teacher two questions.’

In the DOCs in the variety of Zhuang spoken in Mashan, only one order of objects is possible. It is for the recipient-object to precede the theme-object. The (relative) animacy and nominal status of the objects do not have any effect on the order of objects.

In the other variety of Zhuang which is spoken in and around Qinzhou, however, not all DOCs display the same order of objects:

(63) DOCs in the variety of Zhuang spoken in and around Qinzhou

a. With the verb *haengj* ‘give’

(i) When the recipient is animate and the theme is inanimate

dez haeq [song bongj sui] [guz]

3.sg give two CL book 1.sg

‘S/he gives me two books.’

(ii) When both the recipient and the theme are animate

dez haeq [tuzngungzij de] [badez]

3.sg give baby 3.sg father

‘S/he gives his/her father his/her baby.’

- (iii) When both the recipient and the theme are animate, and the recipient is pronominal

dez haeq [tuzngungzij de] [guz]

3.sg give baby 3.sg 1.sg

‘S/he gives me his/her baby.’

In the GIVE-construction in this variety, it is the theme-object that immediately follows the verb. This object precedes the recipient-object, which appears in the phrase-final position. There does not seem to be any exception to this order of objects. In (63aii), the two objects have the same animacy value. The NP that is adjacent to the verb is interpreted as the object that bears the theme role, while the other NP is the object that bears the recipient role. In (63aiii), even though the recipient-object is realized by a pronoun, it is still in the phrase-final position. Similar to what has been observed for the other variety of Zhuang, the (relative) animacy and the nominal status of the objects do not have any role to play on their order. However, unlike the other variety, the order of objects in the GIVE-construction is such that the theme-object precedes the recipient-object.

The order of the objects in the other DOCs in the variety as spoken in Qinzhou patterns differently. In the DOCs with the verbs *son* ‘teach’ and *cam* ‘ask’ for instance, it is the recipient-object that is adjacent to the verb. The theme-object follows both the verb and the recipient-object:

- b. With the verb *gauq* ‘teach’  
 Dez    gauq    [guz]    [nyuqwenz]  
 3.sg    teach    1.sg    Chinese  
 ‘S/he teaches me Chinese.’
- c. With the verb *zam* ‘ask’  
 Dez    zam    [lauzsae]    [aen menhtaetz]  
 3.sg    ask    teacher    one    question  
 ‘S/he asks the teacher a question.’

We have seen that, in the variety spoken in Qinzhou, the GIVE-construction displays a peculiar order of objects, and this order is anomalous to this particular construction. In the other DOCs in this variety and in all of the DOCs in the Mashan variety of the language, the objects are in the cross-linguistically prototypical order with the recipient-object preceding the theme-object.

The GIVE-construction in the Qinzhou variety of Zhuang is anomalous in terms of the order of its objects. This is very similar to what has been observed for Cantonese, although future work is needed to explore the syntax of the DOCs in Zhuang further.

#### **5.4.2.3 Thai**

Thai, which is also a Tai-Kadai language and is typologically related to Zhuang, is another language in which the objects in the GIVE-construction are in the order with the theme-NP preceding the recipient-NP:

(64) The GIVE-construction in Thai<sup>23</sup>: V < Th-NP < Rpt-NP

kao      hai   [nangsi] [chan]  
3.sg.m   give   book      1.sg  
'He gives me the book.'

The recipient-object may optionally be preceded by the marker *kae*<sup>24</sup> (Smyth

2002:80-81):

(65) The GIVE-construction in Thai: V < Th-NP < *kae* < Rpt-NP

kao      hai   [nangsi] [kae   chan]  
3.sg.m   give   book      KAE   1.sg  
'He gives me the book.'

The GIVE-construction seems to be the only construction that allows the order of objects as observed in (64). In the other DOCs in our data<sup>25</sup>, it is the recipient-object that is adjacent to the verb. The theme-object follows the recipient-object:

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<sup>23</sup> I thank Natthapong Jirakajorn for the Thai data. All the tones have been omitted as they do not contribute to the current discussion.

<sup>24</sup> We will not make any claims about the status of the marker *kae*. Whatever its status, the structure in (70) is no longer a DOC. According to Smyth (2003:80), the structures in (64) and (65) alternate freely in most cases, but '[...] in some instances, [the marker *kae*] must be omitted'. Very little has been mentioned about what these instances might be. We will only take note of the fact that the two structures may be in alternation with one another.

<sup>25</sup> The DOCs given in (66) are perhaps not the typical DOCs that come to mind. It seems that there are not many ditransitive verbs in this language. Constructions which tend to be DOCs in other languages like the TEACH-construction and the BUY-construction are expressed as serial verb constructions:

(i) The TEACH-construction in Thai

ter      son      pasa.thai      hai      chan  
3.sg.f   teach   Thai      give   1.sg  
'She teaches me Thai.'

(ii) The BUY-construction in Thai

kao      sue      nangsi      song      lem      hai      chan  
3.sg.m   buy   book      two      CL   give   1.sg  
'He buys me two books.'

(66) a. With the verb *tam* ‘ask’  
 kao tam [chan] [nueng kamtam]  
 3.sg.m ask 1.sg one question  
 ‘He asks me one question.’

b. With the verb *bok* ‘tell’  
 kao bok [chan] [rueng nueng rueng]  
 3.sg.m tell 1.sg matter one CL  
 ‘He tells me (about) one incident.’

The cross-linguistically non-prototypical order of objects in a DOC in which the ditransitive verb is followed by first the theme-object and then the recipient-object is attested in Thai. This peculiar order of objects, however, seems to be possible in the GIVE-construction only. The GIVE-construction is anomalous with respect to the order of objects in Thai DOCs.

#### 5.4.2.4 Ewe

Yet another language in which a non-prototypical order of objects in a ditransitive construction can be found is the Kwa language Ewe<sup>26</sup>. Ameka (2006:126, e.g. 1) provides the following examples as illustration:

(67) a. V < Theme-NP < Recipient-NP  
 Kofi fiá akónta eví-á-wó  
 Kofi teach arithmetic child-def-pl  
 ‘Kofi taught arithmetic (to) the children.’

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<sup>26</sup> I thank Stephen Matthews for pointing this out.

- b. V < Recipient-NP < Theme-NP  
 Kofi fiá eví-á-wó akónṭa  
 Kofi teach child-def-pl arithmetic  
 ‘Kofi taught the children arithmetic.’

In the ditransitive construction in (67a), the verb is immediately followed by the theme-object, which is in turn followed by the recipient-object. In (67b), the position of the two objects is switched, with the recipient-object preceding the theme-object. Example (67a) has the cross-linguistically peculiar order of objects, while the order found in (67b) is much more prototypical.

The examples in (67) do not seem to be alternative structures participating in a dative alternation. The two structures do differ, but they are not involved in a dative alternation. The NPs receive the same kind of morphological encoding, which suggests that the non-agent arguments are realized by the same grammatical functions. It seems only to be the case that the same grammatical functions may be associated with different c-structure positions. In other words, the examples in (67) may be an instance of object functions swapping positions at c-structure, rather than an example of an alternative set of grammatical functions expressing the same arguments, as is found in a dative alternation. This needs to be verified in the future by considering more data and the syntax of the objects.

Ameka (2006:126) notes that such word order variation is not common. Of all the ditransitive verbs in the language, only three allow its objects to be in either

order. The first is *fiá* ‘teach/show’, as we have seen in (67). The other two are *tsyé* ‘donate’ and *ná* ‘give’. The verb ‘give’ *ná* is, once again, on the list. The objects of all the other ditransitive verbs must obligatorily appear in the cross-linguistically prototypical order, with the theme-object preceding the recipient-object.

#### **5.4.2.5 Lancashire English**

Siewierska and Hollmann (2007) have conducted a corpus study on the encoding of objects in ditransitive constructions in Lancashire English. This study is relevant to the current discussion as it has been found that some DOCs in this variety of English also display the order of objects in which the theme-object immediately follows the verb and precedes the recipient-object.

The key findings in their study are summarized below. The table in (68) shows the number of DOCs and the total number of trivalent constructions found in the Lancashire texts in the following corpora - (i) the British National Corpus; (ii) the Survey of English Dialects Incidental Recordings Corpus; (iii) the Freiburg English Dialect Corpus; and, (iv) the Helsinki Corpus of British English Dialects. (For details of these corpora, refer to Siewierska and Hollmann (2007:11-12)). As observed by Siewierska and Hollmann, the majority of trivalent constructions are expressed as DOCs.

(68) Trivalent constructions found in corpora (summarizing the findings in Siewierska and Hollmann (2007:12-15))

Type of structure Nominal status of arguments	Total no. of trivalent constructions	No. of DOCs
Both nominal	34	25 (73%)
A nominal and a pronominal	338	292 (86%)
Both pronominal	77	57 (74%)
TOTAL	449	374 (83%)

Here are some examples to illustrate the various patterns of DOCs in Lancashire

English:

(69) Examples of DOCs in Lancashire English

- a. With the objects in the canonical Rpt-NP < Th-NP order
  - (i) When both objects are nominal  
John gave Mary a book.
  - (ii) When one of the objects is nominal and the other pronominal  
(Siewierska and Hollmann 2007:14, e.g. 19a)  
Show your father them.
  - (iii) When both objects are pronominal (Siewierska and Hollmann 2007:8,  
e.g. 16)  
She gave him it.
- b. With the objects in the non-canonical Th-NP < Rpt-NP order
  - (i) When both objects are nominal (Hughes & Trudgill 1996:16; in  
Siewierska and Hollmann 2007:5, e.g. 5)  
She gave a book the man.

(ii) When one of the objects is nominal and the other pronominal (Siewierska and Hollmann 2007:14, e.g. 20a)

I'll give it your sister.

(iii) When both objects are pronominal (Siewierska and Hollmann 2007:18, e.g. 21e)

I'll give it you.

Not all of these patterns are attested equally frequently. Indeed, it has been found that the non-canonical order of objects with the theme-object preceding the recipient-object is not common at all. Of the 374 DOCs found, only 6% of the constructions display this order. Such an order is most commonly attested in a DOC in which both objects are realized as pronouns:

(70) The order of objects in DOCs (summarizing the findings in Siewierska and Hollmann (2007:12-15))

Order of objects Nominal status of arguments	Rpt-NP < Th-NP	Th-NP < Rpt-NP	TOTAL
Both nominal	25 (100%)	0 (0%)	25
A nominal and a pronominal	286 (98%)	6 (2%)	292
Both pronominal	42 (73%)	15 (27%)	57
TOTAL	353 (94%)	21 (6%)	374

Upon investigating the types of pronouns more closely, Siewierska and Hollmann suggest that the non-canonical order of objects is indeed more likely than

the canonical order when both objects are realized as personal pronouns<sup>27</sup>:

(71) The order of objects in a DOC when both objects are pronominal - a breakdown (summarizing the findings in Siewierska and Hollmann (2007:12-15))

Order of objects Type of pronouns included	Rpt-NP < Th-NP	Th-NP < Rpt-NP	TOTAL
All pronouns e.g. <i>some, one, any, anything, this, that</i>	42 (73%)	15 (27%)	57
Personal pronouns only	8 (25%)	15 (65%) <sup>28</sup>	23 (out of a total of 57)

Another very interesting finding concerns lexical verbs whose double objects have been found to display the non-canonical order. There are three such verbs, which are *give* (69b), *send* (72) and *show* (Siewierska and Hollmann 2007:17). No example has been given for the verb *show*.

(72) So send it me. (Siewierska and Hollmann 2007:18, e.g. 21d)

In the DOCs in Lancashire English, two orders of objects are attested. For some verbs, including *give*, *send* and *show*, the theme-object may either follow or

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<sup>27</sup> This is only a suggestion on their part, as the number of DOCs with both objects expressed as pronouns is not large enough for the relevant figures to be statistically significant (Siewierska and Hollmann 2007:15).

<sup>28</sup> The percentages in this row are given in Siewierska and Hollmann (2007:15), but they do not add up to 100%. The correct percentages should be 35% and 65% for the Rpt-NP < Th-NP order and the Th-NP < Rpt-NP order respectively.

precede the recipient-object. The canonical and non-canonical orders result respectively. Although the non-canonical order is not attested frequently, it is interesting to note that more than one order of objects is possible in this variety of English. Even more intriguing is the fact that a peculiar order of objects is, once again, associated with the GIVE-construction.

### **5.4.3 Section Summary**

We have surveyed the DOCs in a number of languages in this section. These DOCs are of particular interest to us because a cross-linguistically uncommon order of objects with the verb immediately followed by the theme-object and then the recipient-object is attested. In some languages, e.g. Ancient Chinese and the variety of Zhuang as spoken in Qinzhou, the peculiar order of objects is anomalous to one particular DOC - the GIVE-construction, or the highly semantically related OFFER-construction in Ancient Chinese. Furthermore, this order is the only order that is allowed for the DOC in question. In other languages, e.g. Thai, Ewe and Lancashire English, the theme-object occurring before the recipient-object is one of the two possible orders of objects in the GIVE-construction. In these languages, this order is still atypical in that it is restricted to a very limited number of ditransitive constructions within a language (the maximum number is three for Ewe and

Lancashire English), and the GIVE-construction is invariably among these DOCs.

These observations echo our findings in Cantonese that the GIVE-construction shows anomaly and that this construction is quite often not a good representative of the DOCs in a language.

## 5.5 Chapter Summary

We have explored the syntax of DOCs in Cantonese in great detail in this chapter. Section 5.1 discusses the syntactic behaviour of these constructions in terms of the structural order of post-verbal arguments, the effect of grammatical weight on these arguments, and the behaviour of these arguments under relativization, question formation and pro-drop. We have shown clearly that the *bei* ‘give’- construction is the only one in the language which has anomalous c-structure properties, namely, the relative order of post-verbal arguments and the effect of weight on these arguments. The *bei*-construction, however, patterns with any other DOC in f-structure phenomena such as relativization, question formation and pro-drop.

Section 5.2 examines a Government and Binding analysis of dative constructions in Cantonese (Tang 1993). The analysis is not a convincing one for quite a number of reasons, which we presented in the same section. The most compelling reason is perhaps the fact that the analysis fails to treat the verb *bei*

'give' as unique. The movement-based approach adopted in Tang is also faced with theoretical problems.

A formal analysis of Cantonese DOCs adopting the theoretical assumptions of LFG is presented in section 5.3. More specifically, we have proposed two alternative analyses for the facts that have been observed in section 5.1 for the DOCs in Cantonese. The first is to formulate a VP rule which captures the possible orders of objects in all DOCs. The other analysis is for the anomalous c-structure properties of the *bei*-construction to be lexically specified in the lexical entry of the verb *bei* 'give'.

The architecture of LFG accounts for the fact that the GIVE-construction is similar to other DOCs in some ways while different in other ways straight-forwardly. The similarities belong to one level of representation, namely the f-structure, while the differences concern a different level, the c-structure.

The idea of lexical entries is also crucial to the present analysis. Lexical idiosyncrasies can be stated easily in lexical entries, as we have done for the verb *bei* 'give'. This is the only ditransitive verb in the language which exhibits peculiarities which are not shared by any other verb in the language. Additional constraints in its lexical entry capture this. The similarities that this verb shares with others can also be explained straight-forwardly - all ditransitive constructions in

the language have very similar argument and functional structures.

Section 5.4 investigates the syntax of the non-prototypical GIVE-construction further, by considering the language acquisition patterns of the Cantonese *bei*-construction, and the GIVE-constructions which also display an anomalous order of objects in other languages. Contrary to what is commonly believed, the GIVE-construction may not be as ‘prototypical’ as one might think.

## Chapter 6

### More Objects: The Case of Chichewa Applicatives

There are at least two types of double/ multiple object constructions in Chichewa. One involves an inherently ditransitive verb root such as *-patsa* ‘to give’, while in the other type, one of the two objects is an applied object:

- (1) a. DOC with an inherently ditransitive verb root

Mkango u-na-pats-a fisi nyemba<sup>1</sup>  
lion(3) 3SM-pst-give-fv hyena(1) beans(10)  
‘The lion gave the hyena beans.’

- b. DOC with one of the objects being an applied object

Mkango u-ku-phik-il-a ana nyemba  
lion(3) 3SM-pres-cook-appl-fv children(2) beans(10)  
‘The lion cooked the children beans.’

We will first consider the applicative affix in section 6.1, before moving on to the syntax of the applied type of double object construction in section 6.2. Section 6.3 focuses on the other type of double object construction where the two objects are licensed by an inherently ditransitive verb. Section 6.4 presents a formal analysis of the effect that the applicative affix has on argument structure within the LFG framework. Section 6.6 ends the chapter with a summary.

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<sup>1</sup> All the examples are from Chichewa unless otherwise specified. I thank Sam Mchombo for all the discussions that we had on Bantu/ Chichewa morphosyntax, and for many of the Chichewa examples and their corresponding grammaticality judgments reported here.

## 6.1 The Applicative Affix

The applicative affix introduces a non-agentive phrase/ clause that is not directly associated with the SUBJ function, unlike the causative affix, for instance (Mchombo 2004). It is an argument-structure-augmenting verbal affix, and most frequently introduces a benefactive, instrument or locative role into the a-structure. In Chichewa, this affix has two allomorphs: *-il-* and *-el-*. Which allomorph is selected and affixed to the verb is constrained by rules of vowel harmony. The phrase/ clause introduced by the applicative affix may have one of the following five thematic roles: benefactive, instrumental, locative, circumstantial and malefactive<sup>2</sup>. Among these roles, the benefactive role seems to be the role that is most commonly associated with the applied argument cross-linguistically and historically. If the applicative morpheme introduces one type of semantic role only in a language, it is invariably be the benefactive role (Trithart 1983, in Mchombo 2004).

Furthermore, even in languages where more than one type of semantic role can be licensed by the applicative affix, it is not the case that each verb root allows the full range of possible applied semantic roles to be introduced into the clause/

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<sup>2</sup> In this chapter, we will only consider the range of semantic roles that are commonly assumed in LFG, and leave aside the applied roles labelled ‘circumstantial’ and ‘malefactive’. Furthermore, in the case of the ‘circumstantial’ role, it has been shown in Mchombo (2004:88) that the grammatical function that realizes this role does not display object properties. It cannot, for instance, become the subject under passivization, and it cannot be object-marked on the verb root.

argument structure. Independently, the applicative affix does not contribute semantic content<sup>3</sup> (Thwala 2006). Rather, it introduces an additional semantic role into the argument structure. It is the semantics of this extra role that is added to the meaning of the clause. The semantics of the applied argument must therefore be compatible with the lexical semantics of the verb root.

Consider now the following examples in Chichewa:

- (2) a. With the underived verb root *-pika* ‘cook’:  
 mkango u-ku-phik-a nyemba  
 lion(3) 3SM-pres-cook-fv beans(10)  
 ‘The lion cooked beans.’
- b. A-structure: *-phika* < Ag, Pt >
- (3) a. Benefactive role introduced by the applicative affix  
 Mkango u-ku-phik-il-a ana nyemba  
 lion(3) 3SM-pres-cook-appl-fv children(2) beans(10)  
 ‘The lion cooked the children beans.’
- b. A-structure: *-phik-il-a* < Ag, **Ben**, Pt >
- (4) a. Instrument role introduced by the applicative affix (Mchombo 2004:87, e.g. 48b)  
 Kalulu a-ku-phik-il-a mkondo maungu  
 hare(1) 1SM-pres-cook-appl-fv spear(3) pumpkins(6)  
 ‘The hare is cooking pumpkins with (using) a spear.’
- b. A-structure: *-phik-il-a* < Ag, **Instr**, Pt >

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<sup>3</sup> See Simango (1995), however, for an analysis that treats the applicative affix as a ‘predicate’ and the affixation of the applicative affix to a verb as ‘predicate union’. It seems that the term ‘predicate’ used in his work is quite different from the LFG-typical ‘semantic content’ sense of the term. Simango has never attributed, or attempted to attribute, any semantic content to his applicative affix ‘predicate’. His assumption that it is a ‘predicate’ seems to be couched within the Relational Grammar framework and is based on his claim that it is capable of assigning grammatical functions.

- (5) a. Locative role introduced by the applicative affix (Mchombo 2004:87, e.g. 49b)

Kalulu a-ku-phik-**il-a**                    **pa**        **chulu**        maungu  
hare(1) 1SM-pres-cook-appl-fv on(16) anthill(7) pumpkins(6)  
‘The hare is cooking the pumpkins on the anthill.’

- b. A-structure: *-phik-il-a*        < Ag, Pt, **Loc** >

In (2a), the verb root is in its most basic form, without any a-structure-changing morpheme affixed to it. The verb root *-phika* ‘cook’ is (mono)transitive, and subcategorizes for one object. The a-structure of the verb *-phika* is shown in (2b). Examples (3) to (5) show that an extra argument is licensed by the affixation of the applicative morpheme. In each of these cases, with the applicative affix *-il-* attached to the verb root *-phika*, the applied verb form becomes *-phik-il-a*, which subcategorizes for two objects. In (3), a benefactive argument *ana* ‘children’ is introduced. In (4), an instrument argument *mkondo* ‘spear’ is added, while in (5), the additional argument that is licensed is a locative argument *pa chulu* ‘on anthill’.

Which semantic role is introduced into the argument structure has a direct bearing on the object status of the postverbal arguments. It is not always the case that the introduced argument maps invariably to the unrestricted object function OBJ or to the restricted object function OBJ<sub>θ</sub>. The relative prominence of the non-agentive semantic roles in the a-structure, as observed on the thematic

hierarchy assumed in LFG, is crucial. In the next section, we will consider in detail the complicated issue of unrestricted/ restricted objecthood in the applied type of double object constructions in Chichewa.

## **6.2 The Object Status of the Applied Argument - Restricted or Unrestricted?**

It is not at all easy to identify the unrestricted object OBJ and the restricted object  $OBJ_{\theta}$  in an applicative construction. Standard tests for unrestricted/ restricted objecthood (or primary/ secondary objecthood in the more general literature) in Bantu languages, including adjacency to the head verb, object-marking, extraction/relativization and passivizability give different results depending on the semantic role of the applied argument. As a quick summary and as mentioned in sections 3.2, 4.4 and 4.5, the object that behaves like the monotransitive object is the unrestricted object. The other object(s) is/ are the restricted object(s). We shall consider a few studies on the object status of the postverbal arguments in an applicative construction in Chichewa. These include Alsina and Mchombo (1990, 1993) and Simango (1995). Let us begin with a summary of the observations in Alsina and Mchombo (1990, 1993):

- (6) How the applied argument behaves under tests for objecthood (assuming the object of the verb without the applicative affix bears the theme role)

Semantic Role of Applied Argument Test	Benefactive (Ben)	Instrument (Instr)	Locative (Loc)
Word order	Ben-NP < Th-NP	Instr-NP < Th-NP/ Th-NP < Instr-NP	Loc-NP < Th-NP/ Th-NP < Loc -NP
Object-marking	Ben only	either Instr or Th	either Loc or Th
Extraction/relativization	Not without an incorporated resumptive pronoun	OK	OK
Passivization	Ben   SUBJ	Instr   SUBJ	Loc / Th   SUBJ

### 6.2.1 Adjacency to Verb

We will first look at the position of the applied argument:

- (7) Word order of the applied argument and the theme argument in three types of applicative constructions
- a. In an applied benefactive construction (Alsina and Mchombo 1993:21, e.g. 3)
    - (i) The benefactive argument is adjacent to the verb:
 

chitsiru chi-na-gul-ir-a atsikana mphantso  
fool(7) 7SM-pst-buy-appl-fv girls(2) gift(9)  
'The fool bought a gift for the girls.'
    - (ii) The theme argument is adjacent to the verb:
 

\*chitsiru chi-na-gul-ir-a mphantso atsikana  
fool(7) 7SM-pst-buy-appl-fv gift(9) girls(2)

b. In an applied instrumental construction (Alsina and Mchombo 1993:21, e.g. 4)

(i) The instrument argument is adjacent to the verb:

anyani a-ku-phwany-ir-a mwala dengu  
baboons(2) 2SM-pres-break-appl-fv stone(3) basket(5)  
'The baboons are breaking the basket with a stone.'

(ii) The theme argument is adjacent to the verb:

anyani a-ku-phwany-ir-a dengu mwala  
baboons(2) 2SM-pres-break-appl-fv basket(5) stone(3)  
'The baboons are breaking the basket with a stone.'

c. In an applied locative construction (Simango 1995:37, e.g. 13)

(i) The locative argument is adjacent to the verb:

Joyce a-ku-phik-ir-a mu nyumba nyemba  
J SM-prog-cook-appl-fv in house beans  
'Joyce is cooking beans in the house.'

(ii) The theme argument is adjacent to the verb:

Joyce a-ku-phik-ir-a nyemba mu nyumba  
J SM-prog-cook-appl-fv beans in house  
'Joyce is cooking beans in the house.'

Of the three types of applied arguments, only the one that bears a benefactive role has to immediately follow the verb. An applied argument that has an instrument or locative role is free to be either in between the verb and the theme argument, or to follow both the verb and the theme argument. Given the SVO word order of Chichewa, the benefactive argument seems more likely to be the unrestricted object, since it has to be adjacent to the verb and behaves like a monotransitive object in this respect. This, however, cannot be maintained for an applied argument that bears an instrument or locative role. In some cases, they do pattern with the

monotransitive object in that they are the argument that is adjacent to the verb. But in others, it is the object that bears the theme role that is closer to the verb and thus behaves more like the monotransitive object.

### **6.2.2 Object-Marking**

Object-marking is a common diagnostic for objecthood in natural languages. It is often applied to Bantu languages, too. The idea is that object-marking targets the unrestricted object. In other words, in a construction where there is more than one object, the object which can have a corresponding object marker on the verb is the unrestricted object. In languages which have symmetric objects, any of the objects may trigger agreement on the verb.

The term ‘object-*marking*’ is indeed quite misleading if the language under consideration is Chichewa. This is because, as shown convincingly by Bresnan and Mchombo (1987:745), what is commonly regarded as an ‘object marker’ in other languages is indeed a functionally unambiguous incorporated object pronoun in Chichewa. The NP that is co-referential with the incorporated object pronoun is not an argument, but is a phrase that lies outside the minimal clause and is related to the pronoun by anaphoric binding. This analysis successfully accounts for the acceptability of (8a), and the unacceptability of (9a):

- (8) a. Alenje        a-ku-wa-phik-il-a                                zitumbuwa    anyani  
           hunters(2) 2SM-pres-2OM-cook-appl-fv pancakes(8) baboons(2)  
           ‘The hunters are cooking for them (the baboons) some pancakes.’

b. [NP<sub>AG</sub> OM<sub>Ben</sub>-APPL-V NP<sub>Th</sub>] NP<sub>Ben</sub>

- (9) a. \*Alenje        a-ku-wa-phik-il-a                                anyani        zitumbuwa  
           hunters(2) 2SM-pres-2OM-cook-appl-fv baboons(2) pancakes(8)

b. \*[NP<sub>AG</sub> OM<sub>Ben</sub>- APPL-V NP<sub>Ben</sub> NP<sub>Th</sub>]

Example (8a) has the structure shown in (8b). The verb root *-phika* ‘cook’, whose argument structure has been augmented by the applicative affix, requires two non-agent arguments - a theme and a benefactive. That the full NP that bears the benefactive role appears not in its canonical position but after the verb and the theme-NP, which clearly marks the clause boundary in a benefactive applicative construction, shows that the benefactive-NP in fact lies outside of the minimal clause that contains the verb and its arguments. The a-structure requirements of the verb are satisfied by the theme-NP and the object affix, which are both inside the minimal clause structure as shown in (8b). This constitutes evidence for the status of the ‘object marker’ *-wa-* as an incorporated pronoun, and not an agreement marker. If *-wa-* was an agreement marker, and was triggered by the benefactive NP argument, the unacceptability of (9a) would be left unaccounted for. There would not be any reason why the benefactive-NP in (9a) cannot be in its canonical position, which is immediately after the verb and before the theme-NP (c/f (7a)), and be

adjacent to the verb that is affixed with its agreement marker.

The benefactive-NP appears after the theme-NP and therefore lies outside the minimal clause. The a-structure requirements of the verb, i.e. that the verb requires an agent and two other arguments, are satisfied clause internally, namely by the theme argument and the incorporated pronoun *-wa-* that is in an anaphoric binding relation with the benefactive-NP. Having the benefactive-NP inside the minimal clause by placing it before the theme-NP would violate the subcategorization requirements of the verb. There would be three non-subject arguments, one of which would be left unsubcategorized by the verb. This explains the unacceptability of (9a).

Only one object pronoun can be incorporated into the verb root in Chichewa. Of the two postverbal NPs, the one whose anaphorically linked pronoun can be incorporated is the unrestricted object OBJ (Alsina and Mchombo 1993, Bresnan and Moshi 1990).

In a benefactive applicative construction, only the pronoun that is anaphorically linked to a benefactive argument can be incorporated (10a). If the incorporated pronoun is associated with a theme argument, the construction becomes ungrammatical (10b). The benefactive argument is therefore the unrestricted object:

(10) Object-marking in a benefactive applicative construction (Mchombo 2004:83, e.g. 41)

a. The benefactive argument is object-marked:

Alenje      a-ku-wa-phik-il-a                      zitumbuwa      (anyani)  
Hunters(2) 2SM-pres-2OM-cook-appl-fv pancakes(8) baboons(2)  
'The hunters are cooking (for) them (the baboons) some pancakes.'

b. The theme argument is object-marked:

\*Alenje      a-ku-zi-phik-il-a                      anyani              (zitumbuwa)  
Hunters(2) 2SM-pres-8OM-cook-appl-fv baboons(2) pancakes(8)

Instrumental and locative arguments, once again, behave differently.

According to Alsina and Mchombo (1993), in an instrumental or locative applicative construction, the incorporated pronoun may be one that is anaphorically linked to the applied argument, or one that is linked to the theme argument. This shows that either of the postverbal arguments may be the unrestricted object. In this sense, it can be said the two objects behave symmetrically. See Bresnan and Moshi (1990) for a discussion of the parametric variation between symmetric vs. asymmetric object languages.

(11) Object-marking in an instrumental applicative construction (Alsina and Mchombo 1993:22, e.g. 6)

a. The instrumental argument is object-marked:

Anyani      a-ku-u-phwany-ir-a                      dengu      (mwala)  
Baboons(2) 2SM-pres-3OM-break-appl-fv basket(5) stone(3)  
'The baboons are breaking the basket with it (the stone).'

b. The theme argument is object-marked:

Anyani      a-ku-li-phwany-ir-a                      mwala      (dengu)  
Baboons(2) 2SM-pres-5OM-break-appl-fv stone(3) basket(5)  
'The baboons are breaking it (the basket) with the stone.'

(12) Object-marking in a locative applicative construction (Alsina and Mchombo 1990:504, e.g. 20)

a. The locative argument is object-marked:

Alenje a-ku-pa-luk-ir-a mikeka (pa-mchenga)  
hunters(2) 2SM-pres-16OM-weave-appl-fv mats(4) 16-3-sand  
'The hunters are weaving mats on it, the beach.'

b. The theme argument is object-marked:

Alenje a-ku-i-luk-ir-a pa-mchenga (mikeka)  
hunters(2) 2SM-pres-4OM-weave-appl-fv 16-3-sand mats(4)  
'The hunters are weaving mats on it, the beach.'

It should be noted that the set of observations regarding the phenomenon known as 'object-marking'<sup>4</sup> in the literature is much more complex. Simango (1995), for instance, in his discussion of the object-marking of the three types of applied arguments in Chichewa, presents a set of observations that contradict those reported in Alsina and Mchombo (1990, 1993) and Mchombo (2004). While all these studies mentioned agree on the observation that it is only the benefactive argument that can be object-marked in a benefactive applicative construction, Simango (1995) claims that in an instrumental or locative applicative construction, only the theme argument can be object-marked, in contrast to the judgments reported in Alsina and Mchombo (1990, 1993) and Mchombo (2004) that either the theme or the instrumental/locative argument can be object-marked. Consider the

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<sup>4</sup> A note on terminology is needed. The term 'object-marking' from this point onwards refers very generally to the phenomenon whereby an affix which shares the same noun class with an object can be found on the verb root. We do not intend for the term to reflect authors' opinions on the status of the affix, i.e. whether they think it is an incorporated pronoun anaphorically linked to another argument, or an agreement marker in the more traditional sense.

following examples:

(13) Object-marking in a instrumental applicative construction - when the verb root is transitive (Simango 1995:39-40, e.g. 16)

- a. Joza     a-na-**wa**-kwapul-ir-a     chikoti     **anyamata**  
J         SM-pst-OM-whip-appl-fv     cane         boys<sup>5</sup>  
'Joza whipped the boys with a cane.'
- b. \*Joza     a-na-**chi**-kwapul-ir-a     anyamata     **chikoti**  
J         SM-pst-OM-whip-appl-fv     boys         cane  
'Joza whipped the boys with a cane.'

In the examples in (13), the object *chikoti* 'cane' bears the instrument role, while the object *anyamata* 'boys' has the theme role. Example (13a) shows that a theme object can be object-marked, while example (13b) shows that an instrument object cannot be object-marked. Simango (1995) uses these examples as evidence to show that in an instrumental applicative construction, only the theme argument, but not the instrument argument, can be object-marked.

At first glance, Simango's observations seem to be in direct contradiction to those made in Alsina and Mchombo (1990, 1993) and Mchombo (2004) that, in an instrumental applicative construction, either the instrument or the theme argument can be object-marked<sup>6</sup>. Upon closer inspection, however, the difference in their claims about this type of applicative construction can be accounted for straight-forwardly. The postverbal arguments in the instrumental applicative

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<sup>5</sup> The noun classes are not available, as they have not been provided in Simango's glosses.

<sup>6</sup> I thank Stella Kachiwanda for providing additional native speaker judgments in cases where there seemed to be disagreement in judgments provided by different authors.

examples provided are very different. The two postverbal arguments in Simango's work have different animacy values - in (13a), the NP *chikoti* 'cane' is inanimate while the NP *anyamata* 'boys' is animate/human. In all of the relevant examples in Alsina and Mchombo, and Mchombo, however, the two postverbal NPs always have the same animacy value and are always inanimate (cf. (11)). Based on these two sets of observations, it may be the case that, when the two postverbal NPs in an instrumental applicative construction have the same animacy value, either can be object-marked. But when they have different animacy values, i.e. one animate and the other inanimate, only the argument that has a higher value on the animacy hierarchy can be object-marked.

Simango uses the example in (14) to lend further support to his claim that it is the instrument argument that is object-marked. When introducing an instrument argument to an intransitive verb like *-yenda* 'walk', the instrument argument becomes the only postverbal argument and thus the only possible candidate for object-marking:

(14) Object-marking in an instrumental applicative construction - when the verb root is intransitive (Simango 1995:40, e.g. 17)

Mbusa	a-na-i-yend-er-a	ndodo
Shepherd	SM-pst-it-walk-appl-fv	stick
'The child walked with a stick.'		

The construction in (14) does not pose any challenge to the relative animacy argument made above. While the example in (14) does confirm the possibility of instrument arguments being object-marked, it does not eliminate the possibility of theme arguments being object-marked in other similar constructions where a theme argument is present. Once again, what is of importance is the relative animacy of the two postverbal arguments in an instrumental applicative construction. If there is only one postverbal argument as in (14), there simply cannot be any comparison and the instrument argument is not prevented from being object-marked.

That it is the more animate of the two postverbal arguments in an instrumental applicative construction that can be object-marked can be well accounted for in terms of Bresnan and Mchombo's (1987) analysis in which the incorporated pronoun has been convincingly shown to be anaphorically linked to a topic. In Chichewa, an NP can be object-marked, i.e. be linked to an incorporated object pronoun, and be placed at the clause-final position if it bears the TOP(IC) function. Conversely, only an NP that is associated with the TOP function may have an incorporated object pronoun through anaphoric linking. Since animate entities have long been found to be more topical or 'topic-worthy' (Givón 1976) than inanimate entities, an animate NP will be more likely to serve as the topic than an inanimate entity.

There is some indication that grammaticization is at work here. The preference for animate entities over inanimate ones to serve as the topic seems to have been fossilized in the language. Inanimate entities can certainly act as discourse topics given the right context, but the morphosyntactic encoding of topics, i.e. by means of object-marking, is now exclusively reserved for animate entities. This explains the acceptability of (13a) but the unacceptability of (13b). In (13a), the NP *anyamata* ‘boys’ is structurally encoded as a topic - an incorporated object pronoun can be associated with it through anaphoric linking. On the other hand, the NP *chikoti* ‘cane’, being inanimate, cannot be morphosyntactically encoded as a topic. This accounts for the unacceptability of (13b). It would be helpful to consider historical or corpus data, if there is any available, in order to verify our hypothesis about the grammaticization of animate topics. We leave this as a topic for future research.

The case with object-marking in the locative type of applicative construction is slightly different. It seems that object-marking is rendered acceptable in some accounts but unacceptable in others simply because of the different grammaticality judgments provided by different authors. No alternative analysis, such as the one provided above with reference to topicality, seems to be possible for the varied judgments for (15) (cf. (12)).

(15) Object-marking in a locative applicative construction - when the verb root is transitive (Simango 1995:41, e.g. 18)

- a. Joyce a-ku-zi-phik-ir-a mu nyumba nyemba  
 J SM-prog-OM-cook-appl-fv in house beans  
 ‘Joyce is cooking beans in the house.’
- b. \*Joyce a-ku-mu-phik-ir-a nyemba mu nyumba  
 J SM-prog-OM-cook-appl-fv beans in house  
 ‘Joyce is cooking beans in the house.’

In (15a), the locative applied argument *mu nyumba* ‘in house’ is adjacent to the verb. The theme argument *nyemba* ‘beans’ is further away from the verb, and is indexed on the verb by the object marker *-zi-* which agrees in noun class with the theme. The structure is acceptable. In (15b), the order of the two postverbal arguments is switched. In this example, it is the theme argument, but not the locative argument, that is adjacent to the verb. The affix *-mu-* on the verb agrees in noun class with the locative argument *mu nyumba*, but the structure is unacceptable. The claim about locative arguments in general that they cannot be object marked in a locative applicative construction as Simango proposes seems to hold.

Simango also provides the following example to show that, in a locative applicative construction, the locative argument cannot be object-marked:

(16) Object-marking in a locative applicative construction - when the verb root is intransitive (Simango 1995:30-40, e.g. 20)

- \*John a-na-pa-khal-ir-a pa mpando  
 J SM-pst-loc-sit-appl-fv on chair  
 (To mean: ‘John sat on the chair.’)

The example in (16) alone does seem to suggest the locative applied argument in general cannot be object-marked. A locative argument is introduced to the argument structure of an intransitive verb such that the verb becomes monotransitive, but the example is not accepted. Alsina and Mchombo (1990) have not provided any examples in which a locative applicative is formed out of an intransitive verb, but additional native speaker judgments match Simango's for the examples in (15) and (16). We thus conclude that, in a locative applicative construction, it is the theme argument that is object-marked. The locative argument cannot be object-marked even if it is the only object in the structure (cf. (16)).

Given all the judgments reported above, it can be concluded that in Chichewa, in terms of object-marking alone, in an applicative construction where the applied argument bears a benefactive role, it is the benefactive argument, but not the theme argument, that can be object-marked. In an instrumental applicative construction, either the theme or the instrument argument can be object-marked. In the locative type of applicative construction, the theme argument is the only argument that can be object-marked.

### 6.2.3 Relativization

We will now turn our attention to the third diagnostic for objecthood in Chichewa - relativization. An applied instrument and an applied locative in a double object applicative construction are relativized in the same way as a theme object would be relativized in a monotransitive construction. An applied benefactive, however, cannot be relativized unless there is a resumptive pronoun incorporated into the verb. Let us first take a look at the primary relativization strategy:

(17) Primary relativization strategy in Chichewa (Mchombo 2004:40, e.g. 2)

- a. anyani            a-ku-b-a            mikanda  
baboons(2)    2SM-pres-steal-fv    beads(4)  
'The baboons are stealing beads.'
- b. [anyani        a-mene        a-ku-b-a            mikanda]  
baboons(2) 2SM-REL    2SM-pres-steal-fv    beads(4)
- a-ku-dz-ets-a            chisokonezo  
2SM-pres-come-caus-fv    confusion(7)

'The baboons that are stealing beads are bringing confusion.'

When the subject is relativized, the head N appears at the beginning of the phrase. The relative clause is post-nominal. The relative pronoun consists of the relative pronoun root *-mene*, which is prefixed by the corresponding subject marker of the relativized head noun (i.e. the relative pronoun has to agree in noun class with the head noun). The resulting relative pronoun is followed by the rest of the relative clause (17b). A gap is left in the position of the subject in a declarative clause, thus

the primary strategy for the relativization of subjects in the gap strategy. The form of the verb in a relative clause does not change compared to the form of the verb in a declarative clause (17).

The monotransitive object is also relativized with the primary gap strategy.

Consider the following:

(18) Relativization of the monotransitive object (Mchombo 2004:86, e.g. 46)

- a. anyani            a-na-b-a            maungu  
 baboons(2)    2SM-pst-steal-fv    pumpkins(6)  
 ‘The baboons stole some pumpkins.’
- b. maungu            a-mene            anyani            a-na-b-a  
 pumpkins        6SM-REL        baboons(2)        2SM-pst-steal-fv  
 ‘the pumpkins that the baboons stole’

In a construction where there are two objects, either of the objects can be relativized. In all three types of applicative constructions, the theme-object is always relativized in the same way as a theme-object would be relativized in a monotransitive construction:

(19) a. Relativization of the theme argument in a benefactive applicative construction (Mchombo 2004:86, e.g. 47b)

- chitumbuwa chi-mene anyani            a-na-phik-il-a            mbuzi  
 pancake(7) 7SM-REL baboons(2) 2SM-pst-cook-appl-fv goats(10)  
 ‘the pancake that the baboons cooked (for) the goats’

b. Relativization of the theme argument in an instrumental applicative construction (Alsina and Mchombo 1990:496, e.g. 3)

- dengu    li-mene            anyani            a-ku-phwany-ir-a            mwala  
 basket(5) 5SM-REL        baboons 2SM-pres-break-appl-fv stone(3)  
 ‘the basket that the baboons are breaking with a stone’

- c. Relativization of the theme argument in a locative applicative construction (Simango 1995:51, e.g. 36b)

apa ndi pa mwala pa-mene Mary a-na-chap-ir-a malaya  
 this is on rock which M SM-pst-wash-appl-fv shirt  
 ‘This is the rock on which Mary washed the shirt.’

In an instrument or locative applicative construction, the non-theme object, i.e. the instrument-object and the locative-object respectively, is also relativized like the theme-object in a monotransitive construction. This shows that, with respect to relativization, both the instrument and locative arguments behave in the exact same way as a theme argument would behave in (i) an applicative construction and (ii) an underived monotransitive construction. The unrestricted vs. restricted status of the two objects in an instrument or locative applicative construction cannot be distinguished:

- (20) Relativization of the instrument argument in an instrumental applicative construction (Alsina and Mchombo 1990:496, e.g. 3)

mwala u-mene anyani a-ku-phwany-ir-a dengu  
 stone(3) 5SM-REL baboons 2SM-pres-break-appl-fv basket(5)  
 ‘the stone that the baboons are breaking the basket with’

- (21) Relativization of the locative argument in an applicative construction (Alsina and Mchombo 1993:43, e.g. 49)

pa-mchenga pa-mene alenje a-na-luk-ir-a mikeka  
 16-3-sand 16SM-REL hunters(2) 2SM-pst-weave-appl-fv mats(4)  
 ‘the beach that the hunters wove mats on’

With the benefactive type of applicative construction, it is much easier to distinguish the unrestricted object from the restricted object in relation to

relativization. Only the theme argument can be relativized in the same way as the theme-object is relativized in a monotransitive construction. The benefactive argument cannot be relativized unless a resumptive pronoun is incorporated into the verb:

(22) Relativization of the benefactive argument in a benefactive applicative construction (Mchombo 2004:86, e.g. 47)

- a. \*mbuzi zi-mene anyani a-na-phik-il-a  
 goats(10) 10SM-REL baboons(2) 2SM-pst-cook-appl-fv

chitumbuwa  
 pancake(7)

- b. mbuzi zi-mene anyani a-na-zi-phik-il-a  
 goats(10) 10SM-REL baboons(2) 2SM-pst-10OM-cook-appl-fv  
 ‘the goats that the baboons cooked the pancake for’

chitumbuwa  
 pancake(7)

The theme argument in all types of applicative constructions clearly patterns with the monotransitive unrestricted object by being relativized with the primary gap strategy. The same is true for the instrument and locative arguments in the instrument and locative applicative constructions respectively. The benefactive argument behaves differently in terms under relativization, and can only be relativized if there is a resumptive pronoun in the relative clause.

#### 6.2.4 Passivization

Passivization gives yet different results regarding the unrestricted/restricted object status of each postverbal argument. Like all other tests for unrestricted/restricted objecthood, the argument that patterns with the monotransitive object is the unrestricted object.

According to Alsina and Mchombo (1990, 1993), the applied argument, if it bears the benefactive (23a) or instrument role (24a), is the only one that can be mapped onto the subject function under passivization and thus behaves like the monotransitive object. Mapping the theme argument onto the subject leads to ungrammaticality (23b, 24b):

(23) Passivization in a benefactive applicative construction (Mchombo 2004:82, e.g. 39)

a. Passivizing the benefactive argument

Anyani a-ku-phik-il-idw-a maungu (ndi alenje)  
baboons(2) 2SM-pres-cook-appl-pass-fv pumpkins(6) (by hunters)  
'The baboons are being cooked pumpkins (by the hunters).'

b. Passivizing the theme argument

\*Maungu a-ku-phik-il-idw-a anyani (ndi alenje)  
pumpkins(6) 2SM-pres-cook-appl-pass-fv baboons(2) (by hunters)

(24) Passivization in an instrumental applicative construction (Alsina and Mchombo 1993:23, e.g. 8)

a. Passivizing the instrument argument

Mwala u-ku-phwany-ir-idw-a dengu (ndi anyani)  
stone(3) 3SM-pres-break-appl-pass-fv basket(5) by baboons(2)  
'The stone is being used (by the baboons) to break the basket.'

b. Passivizing the theme argument

\*dengu li-ku-phwany-ir-idw-a mwala (ndi anyani)  
basket(5) 5SM-pres-break-appl-pass-fv stone(3) by baboons(2)

Passivization, however, cannot distinguish the two postverbal arguments in the locative type of applicative construction. Either of the arguments, i.e. the locative role (25a) or the theme role (25b), can become the SUBJ of the passivized sentence. Under passivization, neither can be said to pattern with the monotransitive restricted object:

(25) Passivization in a locative applicative construction (Alsina and Mchombo 1990:504, e.g. 21)

a. Passivizing the locative argument

Pa-mchenga pa-ku-luk-ir-idw-a mikeka  
16-sand(3) 16SM-pres-weave-appl-pass-fv mats(4)  
'The beach is being woven mats on.'

b. Passivizing the theme argument

Mikeka i-ku-luk-ir-idw-a pa-mchenga  
mats(4) 4SM-pres-weave-appl-pass-fv 16-sand(3)  
'The mats are being woven on the beach.'

Passive structures are another type of structure for which Simango (1995) has made different observations. While he agrees that in a benefactive applicative construction, only the benefactive argument can become the subject under passivization, he has different views regarding the instrumental and locative applicative constructions. For the instrumental type, the following examples are provided as evidence in support of his claim that only the theme argument (26a), but

not the instrument argument (26b), can be mapped onto SUBJ under passivization.

This is in contradiction to the observations made in (24) by Alsina and Mchombo,

where only the instrument (24a), but not the theme (24b), can become the SUBJ:

(26) Passivization in an instrumental applicative construction (Simango 1995:43-44, e.g. 22)

a. Passivizing the theme argument

Anyamata	a-na-kwapul- <b>idw-ir</b> -a	chikoti	(ndi Joza)
Boys	SM-pst-whip-pass-appl-fv	cane	by J

‘The boys were whipped with a cane by Joza.’

b. Passivizing the instrument argument

*Chikoti	chi-na-kwapul- <b>ir-idw</b> -a	anyamata	(ndi Joza)
Cane	SM-pst-whip-appl-pass-fv	boys	by J

But these examples do not constitute counter-evidence to Alsina and Mchombo’s observation. First, notice that the relative order of the passive affix and the applicative affix in (26a) is different from that in (26b) - the passive affix precedes the applicative affix in (26a), while the applicative affix precedes the passive affix in (26b). As will be discussed in detail in section 6.4, the order of the applicative and passive (and other argument structure-changing) affixes have significant impact on the well-formedness of a (verb) structure<sup>7</sup>. Thus, whether

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<sup>7</sup> Our analysis actually predicts that the structure in (26a) is ungrammatical, and this has been confirmed by additional native speaker judgments. The order of morphemes reflects the order of morpholexical processes that are applied. The passive morpheme precedes the applicative morpheme, which is an indication of passivization being applied before applicativization. The passive morpheme (26a) first suppresses the agent argument. The theme argument that remains is the most prominent semantic role in the a-structure. An instrument role, being more prominent than the theme role, cannot be added, because a constraint on applicativization states that the process cannot apply if the applied role is more prominent on the thematic hierarchy than the highest existing role in a-structure. The ungrammaticality of (26a) is due to the order of a-structure-changing morphemes on the verb, independent of other factors. See section 6.4 for a

example (26a) is grammatical or not has no bearing on the current discussion of whether an instrument or a theme argument can be passivized in an instrumental applicative construction.

With the same order of a-structure-changing morphemes as in (26b), the theme argument can indeed be passivized, as (27) shows:

(27) Passivizing the theme argument in an instrumental applicative construction

Anyamata	a-na-kwapul- <b>ir-idw</b> -a	chikoti	(ndi Joza)
Boys	SM-pst-whip-appl-pass-fv	cane	by J

Another reason why this may not counter Alsina and Mchombo's finding that it is the instrument, but not the theme, that becomes SUBJ under passivization in an instrumental applicative construction is that the issue of animacy may also have a role to play. Similar to the argument made earlier for object-marking, the instrument argument and the theme argument are of different animacy values, with the NP *anyamata* 'boys' being much more animate than the NP *chikoti* 'cane'. It is the more animate of the two that can be passivized in (26, 27), whereas in (24), when the two postverbal NPs are of the same animacy value, only the instrument argument can be passivized. As is the case with object-marking, animacy clearly seems to be relevant.

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more detailed analysis.

That (26a) is considered acceptable by individual speakers like Simango may be explained by the possibility that the constraint which prevents the applied role from bearing a more prominent semantic role on the thematic hierarchy than the existing role(s) in the a-structure is absent in the grammars of these speakers.

As a quick summary, in an instrumental applicative construction, if the instrument and the theme are of the same animacy value, it is the instrument argument, but not the theme, that becomes the SUBJ under passivization. In cases where the theme is more animate than the instrument, the theme becomes the SUBJ under passivization<sup>8</sup>.

In the case of locative applicatives, Simango provides the following examples, which closely resemble the examples provided by Alsina and Mchombo (1990):

(28) Passivization in a locative applicative construction (Simango 1995:45, e.g. 24)

a. Locative argument becoming SUBJ

Mu nyumba mu-na-phik-idw-ir-a nyemba (ndi Joyce)  
 In house SM-pst-cook-pass-appl-fv beans by Joyce  
 ‘In the house was cooked beans (by Joyce).’

b. Theme argument becoming SUBJ

Nyemba zi-na-phik-idw-ir-a mu nyumba (ndi Joyce)  
 Beans SM-pst-cook-pass-appl-fv in house by Joyce  
 ‘The beans were cooked in the house (by Joyce).’

The conclusion reached, however, is very different. Once again, it should be pointed out that the order of the applicative and passive affixes in Simango’s examples in (28) is different from that in Alsina and Mchombo’s examples in (25). In (28), the passive affix precedes the applicative affix, while in (25), the applicative affix precedes the passive affix<sup>9</sup>. Simango judges the constructions with the

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<sup>8</sup> It will be interesting to conduct an account of these findings within Optimality Theory. We leave this as an area for future research.

<sup>9</sup> In a locative applicative construction, it is possible to have the passive affix preceding the applicative affix on the verb root. Passivization suppresses the highest agent role, but the locative

applicative-before-passive affix order on the verb grammatically odd (marked with ‘?’), and takes the passive-before-applicative affix order in his examples as evidence for the passive operation taking place before the applicative operation, claiming that is an instantiation of Baker’s (1985) Mirror Principle. The example in (28a), in which the SUBJ is a locative, is therefore the result of locative inversion, applied to the locative-applied form of a passive structure.

If the locative becoming SUBJ is the result of locative inversion but not of passivization as Simango suggests, then, in his analysis, passivization is not relevant in deciding the unrestricted/ restricted object status of the theme argument and the locative argument in a locative applicative construction. In this account, the locative argument may become the subject not because of its ability to be passivized, but because of the application of locative inversion which targets the locative role only.

Additional native speaker judgments prove the following examples acceptable, in which the applicative affix precedes the passive affix on the verb root:

(29) Passivization in a locative applicative construction

- a. Locative argument becoming SUBJ

Mu	nyumba	mu-na-phik-ir-idw	-a	nyemba	(ndi Joyce)
In	house	SM-pst-cook-appl-pass-fv		beans	by Joyce
‘In the house was cooked beans (by Joyce).’					

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role can be introduced via applicativization because the locative is less prominent than the theme on the thematic hierarchy.

b. Theme argument becoming SUBJ

Nyemba zi-na-phik-ir-idw-a mu nyumba (ndi Joyce)  
Beans SM-pst-cook-appl-pass-fv in house by Joyce  
'The beans were cooked in the house (by Joyce).'

These judgments are in line with those provided in Alsina and Mchombo (1990) (cf. (25)), and supports their observation that in a locative applicative construction, either the theme or the locative can become the SUBJ under passivization.

### 6.2.5 Section Summary

Four diagnostics of objecthood have been applied to identify the object in an applicative construction that behaves like the monotransitive object. The goal is to distinguish the unrestricted object from the restricted object in Chichewa. The syntactic behaviour of each of the two postverbal objects in an applicative construction has been investigated in terms of (i) adjacency to the verb; (ii) object-marking; (iii) relativization; and (iv) passivization. The observations, shown in (6), are repeated below:

(30) Summary of observations according to Alsina and Mchombo (1990, 1993)

<b>Role of Applied Argument</b> <b>Test</b>	<b>Benefactive (Ben)</b>	<b>Instrument (Instr)</b>	<b>Locative (Loc)</b>
<b>Word order</b>	Ben-NP < Th-NP	Instr-NP < Th-NP/ Th-NP < Instr-NP	Loc-NP < Th-NP/ Th-NP < Loc -NP
<b>Object-marking</b>	Ben only	<i>either Instr or Th</i>	<i>either Loc or Th</i>
<b>Extraction/relativization</b>	Relativized with the resumptive pronoun strategy; primary (gap) strategy is not allowed	Relativized with the primary (gap) strategy	Relativized with the primary (gap) strategy
<b>Passivization</b>	Ben   SUBJ	<i>Instr</i>   <i>SUBJ</i>	<i>Loc / Th</i>   <i>SUBJ</i>

We have also noted in the object-marking (section 6.2.2) and passivization (section 6.2.4) subsections above that there exists in the literature a slightly different set of observations (Simango 1995):

(31) Summary of observations according to Simango (1995):

<b>Role of Applied Argument</b> <b>Test</b>	<b>Benefactive (Ben)</b>	<b>Instrument (Instr)</b>	<b>Locative (Loc)</b>
<b>Word order</b>	Ben-NP < Th-NP	Instr-NP < Th-NP/ Th-NP < Instr-NP	Loc-NP < Th-NP/ Th-NP < Loc -NP
<b>Object-marking</b>	Ben only	<b><i>Th only</i></b> <i>(but it has been shown that animacy matters and it is the more animate/topical that is object-marked)</i>	<b><i>Th only</i></b>
<b>Extraction/relativization</b>	Relativized with the resumptive pronoun strategy; primary (gap) strategy is not allowed	Relativized with the primary (gap) strategy	Relativized with the primary (gap) strategy
<b>Passivization</b>	Ben   SUBJ	<b><i>Inconclusive</i></b> <i>(problems with data provided)</i>	<b><i>Not an applicable test</i></b>

(The differences between the two sets of observations are highlighted in bold italics for comparison.)

Combining the two sets of observations, and taking additional native speaker judgments into consideration, the following conclusions are reached:

(32) Unrestricted Object or Restricted Object? - Summary of Results

<b>Role of Applied Argument</b> <b>Test</b>	<b>Benefactive (Ben)</b>	<b>Instrument (Instr)</b>	<b>Locative (Loc)</b>
<b>Adjacency to the verb</b>	Ben-NP = OBJ	Instr-NP = OBJ/OBJ <sub>θ</sub>	Loc-NP = OBJ/OBJ <sub>θ</sub>
<b>Object-marking</b>	Ben-NP = OBJ	Instr-NP = OBJ/OBJ <sub>θ</sub>	Loc-NP = OBJ <sub>θ</sub>
<b>Extraction/relativization</b>	Ben-NP = OBJ <sub>θ</sub>	Instr-NP = OBJ/OBJ <sub>θ</sub>	Loc-NP = OBJ/OBJ <sub>θ</sub>
<b>Passivization</b>	Ben-NP = OBJ	Instr-NP = OBJ	Loc-NP = OBJ/OBJ <sub>θ</sub>

These conclusions, again, are based on the widely accepted assumption that the object that behaves like the monotransitive object is the unrestricted object OBJ, while the other object is the restricted object OBJ<sub>θ</sub>.

It can be seen from the table above that while adjacency to the verb, object-marking and passivization suggest that the benefactive argument in a benefactive applicative construction is the unrestricted object, results from extraction/relativization are contradictory. Under this test, the benefactive argument behaves like a restricted object.

As for the instrumental type of applicative construction, results from adjacency to the verb, object-marking and extraction/relativization are not conclusive, and show that either the instrument or the theme argument may become the unrestricted object. Taking these results into consideration, it can be said that the

two objects in an instrumental applicative construction are symmetric in that they cannot be distinguished morphosyntactically (Bresnan and Moshi 1990). Passivization suggests that the applied instrument object behaves like the unrestricted object.

In the locative type of applicative construction, both the locative and theme arguments behave in the same way with respect to adjacency to the verb, extraction/relativization and passivization. Once again, the objects seem to behave symmetrically. The only test that can distinguish the unrestricted object from the restricted one is object-marking. Under this test, the locative argument behaves like a restricted object, i.e. it cannot be anaphorically linked to an incorporated pronoun like a monotransitive (unrestricted) object.

In the next section, we will move away from applicative constructions for a while and focus our attention on an inherently ditransitive construction in Chichewa.

### **6.3 Double Object Constructions Without The Applicative Affix**

We have seen in (1a) that the verb root *-patsa* ‘give’ is ditransitive and in its most basic, underived form, it requires two objects. We refer to this non-applied, non-derived type of ditransitivity as ‘inherent ditransitivity’. In Chichewa, *-patsa*

seems to be the only verb which is inherently ditransitive (Sam Mchombo, p.c.). In this section, we investigate the syntax of the *-patsa*-construction, and aim to identify the unrestricted object and the restricted object in the construction (section 6.3.1). We will also explore how the applicative affix interacts with the argument structure of the inherently ditransitive verb *-patsa* (section 6.3.2). Section 6.3.3 ends the section.

### **6.3.1 The Inherently Ditransitive Verb Root *-Patsa* ‘Give’**

Four aspects of the syntax of the objects in the inherently ditransitive construction with the verb *-patsa* ‘give’ are discussed in this section. These include (i) the word order of the objects (section 6.3.1.1); (ii) object-marking (6.3.1.2); and (iii) the syntactic behaviour of the objects under passivization (section 6.3.1.3); and (ii) the relativization pattern of the objects (section 6.3.1.4). We shall also consider the joint effect of object-marking and passivization on the objects (section 6.3.1.5).

#### ***6.3.1.1 Word Order of Post-verbal Arguments***

With one of the objects realizing a benefactive role, the objects in the inherently ditransitive *-patsa*-construction have to be in a fixed order, with the benefactive argument adjacent to the V and preceding the theme argument (33a,

33b). Both of the arguments must be realized as NPs. Otherwise, the structure would be ungrammatical (33c):

- (33) a. Mkango u-na-pats-a fisi nyemba  
 lion(3) 3SM-pst-give-fv hyena(1) beans(10)  
 ‘The lion gave the hyena beans.’
- b. \*mkango u-na-pats-a nyemba fisi  
 lion(3) 3SM-pst-give-fv beans(10) hyena(1)
- c. \*mkango u-na-pats-a nyemba kwa fisi  
 lion(3) 3SM-pst-give-fv beans(10) to hyena(1)

The order of objects suggests that the benefactive-NP is patterns more closely with the monotransitive unrestricted object than the theme-NP.

### 6.3.1.2 Object-marking

Object-marking, i.e. having an incorporated pronoun that is anaphorically-linked to a topic outside the minimal clause, also shows that it is the benefactive argument that behaves like an unrestricted object. The benefactive argument may have an anaphorically-linked, incorporated pronoun (34a), but the theme argument may not (34b):

- (34) a. Mkango u-na-wa-pats-a nyemba (anyani)  
 lion(3) 3SM-pst-2OM-give-fv beans(10) (baboons(2))  
 ‘The lion gave them beans, the baboons.’
- b. \*Mkango u-na-OM-pats-a anyani (nyemba)  
 lion(3) 3SM-pst-10OM-give-fv baboons(2) (beans(10))  
 ‘The lion gave the baboons them, the beans.’

### 6.3.1.3 Passivization

Passivization is another diagnostic that targets the unrestricted object. Only unrestricted objects can be passivized, i.e. become the SUBJ of the corresponding passive construction. In (35a), the benefactive argument is mapped to SUBJ under passivization, and the construction is acceptable. In (35b), however, with the theme argument mapped to SUBJ, the construction is unacceptable. The benefactive argument, once again, behaves like an unrestricted object.

- (35) a. Anyani            a-na-pats-idw-a            nyemba    (ndi    mkango)  
baboons(2) 2SM-pst-give-pass-fv    beans(10) by    lion(3)  
‘The baboons were given beans by the lion.’
- b. \*Nyemba    zi-na-pats-idw-a            anyani            (ndi    mkango)  
beans(10) 10SM-pst-give-pass-fv baboons(2)    by    lion(3)  
‘The beans were given to the baboons by the lion.’

### 6.3.1.4 Relativization

As shown in section 6.2.3, the primary strategy for relativization in Chichewa is the gap strategy. The unrestricted object in a monotransitive construction is also relativized with the gap strategy. In an inherently ditransitive construction, it is the theme argument that patterns with the unrestricted object in this respect (36a). The benefactive argument, on the other hand, cannot be relativized without an incorporated resumptive pronoun (36b, 36c), just like the benefactive applied argument in an applicative construction.

- (36) a. Relativization of the theme argument without any incorporated resumptive pronoun

Izi ndi nyemba zi-mene mkango u-na-pats-a fisi  
 10-this be beans(10) 10-REL lion(3) 3SM-pst-give-fv hyena(1)  
 ‘These are the beans that the lion gave to the hyena.’

- b. Relativization of the benefactive argument without any incorporated resumptive pronoun

\*Uyu ndi fisi a-mene mkango u-na-pats-a nyemba  
 1-this be hyena(1) 1-REL lion(3) 3SM-pst-give-fv beans(10)  
 (To mean ‘This is the hyena that the lion gave beans to.’)

- c. Relativization of the benefactive argument with an incorporated resumptive pronoun

Uyu ndi fisi a-mene mkango u-na-mu-pats-a  
 1-this be hyena(1) 6-REL lion(3) 3SM-pst-1OM-give-fv

nyemba  
 beans(10)

‘This is the hyena that the lion gave beans to.’

### ***6.3.1.5 The Joint Effect of Object-marking and Passivization***

Object-marking and passivization both target the unrestricted object. Since Chichewa only allows one object pronoun to be incorporated on the verb root, the argument that is associated with it through anaphoric linking is the unrestricted object. Passivization also identifies the unrestricted object, and makes it the SUBJ of the corresponding passive structure. Object-marking and passivization, therefore, cannot take place at the same time:

- (37) a. \*Anyani a-na-zi-pats-idw-a (ndi mkango) (nyemba)  
 baboons(2) 2SM-pst-10OM-give-pass-fv by lion(3) (beans(10))  
 (To mean ‘The baboons were given them by the lion, the beans.’)
- b. \*Nyemba zi-na-wa-pats-idw-a (ndi mkango) (anyani)  
 beans(10) 10SM-pst-2OM-give-pass-fv by lion(3) baboons(2))  
 (To mean ‘The beans were given to them by the lion, the baboons.’)

In (37a), the unrestricted object *anyani* ‘baboons’ has become the SUBJ of the passive structure. The object that is left, i.e. the restricted object *nyemba* ‘beans’, cannot be anaphorically linked to the incorporated object pronoun. Similarly, in (37b), with the unrestricted object serving as the topic and being anaphorically linked to the incorporated pronoun, the restricted object that remains cannot be passivized. Passivizing the restricted object results in ungrammaticality.

In the inherently ditransitive construction with the verb *-patsa* ‘give’, the two objects exhibit different syntactic behaviour. In terms of word order, i.e. adjacency to the verb, object-marking and passivization, the benefactive argument patterns with the unrestricted object in a monotransitive construction. In terms of relativization, however, it is the theme argument that is relativized like the monotransitive unrestricted object. What is even more interesting is the fact that the benefactive-object and the theme-object, which are inherently subcategorized by the underived verb root *-patsa* ‘give’, behave exactly like those objects in a benefactive applicative construction. This seems to suggest that whether the objects are

inherently required or applied is relatively less important. The semantic roles in the argument structure of a ditransitive verb seem to be more relevant to the syntax of the objects.

### 6.3.2 -Patsa ‘Give’ and the Applicative Affix

The a-structure of the inherently ditransitive verb root *-patsa* ‘give’ may be further augmented by attaching the applicative affix to it. The verb *-pats-il-a* is the applied verb form of *-patsa*. In principle, this is how it should work out. Since *-patsa* is ditransitive, *-pats-il-a* should become a verb that takes three objects. In reality, however, a construction with *-pats-il-a* and three full NP objects is only marginally acceptable. In the example below, an additional locative argument is introduced by the applicative affix *-il-*:

- (38) ?mkango u-na-pats-il-a anyani nyemba ku London  
lion(3) 3SM-pst-give-appl-fv baboons(2) beans(10) in London  
‘The lion gave the baboons beans in London.’

The acceptability increases if the argument *anyani* ‘baboons’ is pronominalized and incorporated into the verb. The constraint, therefore, seems to be on the adjacent occurrence of three full NPs in the same clause, not on the possibility of having three objects:

- (39) Mkango      u-na-wa-pats-il-a                      nyemba    ku    London<sup>10</sup>  
 lion(3)        3SM-pst-2OM-give-appl-fv      bean(10)    in    London  
 ‘The lion gave them beans in London.’

The order of the objects in this example needs further investigation. For instance, the speaker seems to have stronger preference for the Th-OBJ to precede the Loc-OBJ. This is not expected as this preference has not been observed in cases where the locative argument is applied to a monotransitive verb (cf. the table in (32)). In such cases, an applied Loc-OBJ is free to either immediately follow the verb and precede the Th-Loc, or to follow both the verb and the Th-OBJ. Whether the transitivity of the verb root, i.e. whether it is inherently monotransitive or ditransitive, has any impact on the order of objects, applied or otherwise, will be a topic for future research.

In (39), that the NP *anyani* ‘baboons’ can be pronominalized is based on the assumption that it has been mentioned in previous discourse and is serving as a discourse topic. If *anyani* ‘baboons’ has no prior reference, and therefore reference has to be obtained first, the more acceptable way (cf. (38)) to express ‘the lion gave the baboons beans in London’ would be to have a construction with two clauses in it:

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<sup>10</sup> The locative marker *ku* here is treated as a noun class marker, but not a preposition (see Orr and Scotton 1980, in Simango 1995:6). *Ku London* ‘in London’ is therefore an NP, not a PP.

(40) Mkango u-na-pats-a anyani nyemba; u-na-wa-pats-il-a  
 lion(3) 3SM-pst-give-fv baboons(2) bean(10); 3SM-pst-2OM-give-appl-fv

ku London  
 LOC London

‘The lion gave the baboons beans; they gave them [beans] in London.’

It is interesting to note that, even with *anyani* ‘baboons’ and *nyemba* ‘beans’ both acting as topics, their treatment are quite different in the second clause. Here, the more topical benefactive argument is pronominalized and incorporated into the verb (the ‘object marker’ *-wa-*), while the less topical theme argument is omitted. The theme argument cannot be pronominalized together with the benefactive argument, as only one object pronoun can be incorporated in a Chichewa verb.

In other Bantu languages, the prediction that the argument structure of an inherently ditransitive verb can be further augmented by the affixation of an applicative morpheme is also borne out. In Kinyarwanda, for instance, an inherently ditransitive verb with an applicative affix may take three objects, and the resulting construction is perfectly acceptable (Kimenyi 2008):

(41) Kinyarwanda

a. (Kimenyi 2008, e.g. 96a)

Umugabo a-r-érek-a abáana amashusho  
 man he-pres-show-asp children pictures

‘The man is showing pictures to the children.’

b. (Kimenyi 2008, e.g. 99a)

Umugoré	a-r-éerek-er-a	abagabo	abakoóbwa	abáana
woman	she-pres-show-appl-asp	men	girls	children

muu	nzu <sup>11</sup>
in	house

‘The woman is showing the children to the girls for the men in the house.’

It should be pointed out that in languages where applicativization is allowed, DOCs that do not involve an applied verb are not very common. In fact, in these languages the number of inherently ditransitive verbs is very small. The list provided for Runyambo is shown below, and in Chichewa, as mentioned earlier, there seems to be only one such verb and it is *-patsa-* ‘give’ (Sam Mchombo, p.c.):

(42) List of inherently ditransitive verbs in Runyambo (Rugemalira 1993:226):

kúha	‘give’	kwĩma	‘deny’	kwaka	‘deprive’
kwĩba	‘steal’	kwóreka	‘show’	kutéera	‘hit’
kujúura	‘undress’	kujwêka	‘dress’	kunyaga	‘cheat’

Most verbs which take double objects are formed by affixing the applicative morpheme to a monotransitive verb root:

(43) a. The Chichewa verb root *-phika* ‘cook’

<i>-phika</i>	< Ag, Pt >
	OBJ

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<sup>11</sup> There are four postverbal NPs in this example. Kimenyi (2008) has not indicated whether all four of them are arguments of the verb. With only one instance of the applicative affix on an inherently ditransitive verb, we assume that three of these NPs are arguments, while one of them is an adjunct. Alternatively, it may be possible in Kinyarwanda that a single instance of the applicative affix may license more than one applied argument. Due to the lack of data, we will not speculate about this further.



roles are in the (underived or derived) argument structure of the verb affects the syntax of the objects in a significant way. Applicativization is thus a process that affects not only the morphological structure of the verb, but also its argument structure and functional structure. We show how this can be captured in a succinct way by making use of the parallel levels of representation assumed in the architecture of LFG.

#### **6.4 Applicativization - A Formal Analysis<sup>12</sup>**

Applicativization, being a highly productive process in languages which allow it, has posed some serious challenges to theories of syntax.

The biggest challenge lies in the fact that a morphological operation, i.e. the affixation of the applicative morpheme to the verb root, is evidently associated with a change in syntax. Whether this is considered an addition of a semantic role or an introduction of an extra object, the verb root clearly allows *one more argument*.

Besides, it is quite often the case that there is more than one a-structure-changing morpheme affixed to the verb root. Besides the applicative affix, other a-structure-changing morphemes include the passive, the causative and

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<sup>12</sup> An earlier version of this section was presented at LFG'07 and was published in the proceedings as Lam (2007). I wish to thank the participants of this conference for a number of very useful comments. A special thanks goes to Ron Kaplan for an illuminating discussion on parts of this section.

the reciprocal affixes. When there is more than one such affix on the verb, it is usually possible to have the morphemes affixed in more than one order. The difference in morpheme order results in a difference in meaning:

(44) *a-na-meny-an-its-a* (Alsina 1999:7, e.g. 3)

Alenje	a-na-meny- <b>an-its</b> -a	mbuzi
Hunters(2)	2SM-pst-hit- <b>rcp-caus</b> -fv	goats(10)
‘The hunters made the goats hit each other.’		

(45) *a-na-meny-ets-an-a* (Alsina 1999:7, e.g. 4)

Alenje	a-na-meny- <b>ets-an</b> -a	mbuzi
Hunters(2)	2SM-pst-hit- <b>caus-rcp</b> -fv	goats(10)
‘The hunters made each other hit the goats.’		

There must, therefore, be ways to correctly account for the effects that the applicative morpheme has on the a-structure of the verb and to accurately predict morpheme order. We will first look at one such account proposed in Alsina (1999) and the problems that Alsina’s proposal faces in section 6.4.1. Section 6.4.2 provides an alternative way to account for morpheme order and the corresponding a-structure-altering effects, building on Sadler and Nordlinger’s (2004) analysis of case-stacking. Section 6.4.3 summarizes the section, highlighting the advantages that our proposal has over Alsina’s (1999) treatment of morpheme ordering.

#### **6.4.1 Alsina's (1999) Instantiation of the Mirror Principle**

It is generally accepted in the literature that morpheme order bears some relation to the order of processes triggered by these morphemes. To capture the relation between morphological changes and the corresponding syntactic effects induced by these morphemes, Baker (1985) proposes the Mirror Principle:

(46) The Mirror Principle (Baker 1985:375)

Morphological derivations must directly reflect syntactic derivations (and vice versa).

In the transformational theory that Baker assumes, this is achieved by allowing (bound) morphemes to appear under terminal nodes. A syntactic derivation (ex. movement) collects the morpheme by moving another morpheme or partial word into the position on the tree that is occupied by that morpheme. For instance, a causative derivation involves the movement of the verb root into the position that is occupied by the causative morpheme, which then attaches to the verb root to create the verb form V-CAUS. A single movement operation will give rise to a morphological derivation and a syntactic derivation.

Alsina (1999) suggests how the Mirror Principle can be captured in a non-transformational theory like LFG. The Mirror Principle is not a result of a sequence of transformations, but is a consequence of the order of morphological affixations and the order of their corresponding morpholexical operations during



#### **6.4.1.1 Problem 1 - ‘Fusion’ of Semantic Roles**

There are, however, some serious problems with Alsina’s proposal. First, the notion of ‘fusion’ of thematic roles is never clearly defined. In the case of the applicative affix, it is not at all clear what semantic basis there could be for making the claim that the thematic role introduced, whether it is a benefactive, instrument or locative role, had ‘fused’ with another theme role. Besides, the fusion does not seem to be constrained in any way<sup>13</sup>.

#### **6.4.1.2 Problem 2 - Intrinsic Classification of ‘Fused’ Role**

Second, what happens after thematic role fusion is equally unclear. After fusion, the a- to f-structure mapping principles apply. Alsina does not offer any stepwise illustration on the mapping that involves an applicative operation. The most important question is whether the fused role receives the intrinsic classification of the patient role that is in the a-structure of the verb root already before the introduction of the applicative affix, or whether it has to be intrinsically classified as the applied role. This problem is most serious if the applied role is a benefactive – the composite role receives conflicting intrinsic classification.

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<sup>13</sup> The one constraint on the fusion of thematic roles is that, in an applicative operation, ‘the role that is fused with the theme [...] cannot be the highest thematic role’ (Alsina 1999:26).

6.4.1.2.1 *A- to F-Structure Correspondence - The Mapping Principles*

Before going into the details of this problem, an introduction to the mapping process from a-structure to f-structure is needed. There are four steps in this process: (i) assigning intrinsic classifications to the thematic roles; (ii) assigning default classifications to the thematic roles; (iii) applying any morpholexical process; and (iv) ensuring that the functional-predicate structure is well-formed.

Intrinsic classifications are featural assignments that each thematic role receives. They specify the grammatical function(s) to which a thematic role can be linked. As we have mentioned in section 4.2.3, grammatical functions are decomposed into two features: [+/- r(estricted)] and [+/- o(bjective)]. As a quick summary, a grammatical function is (semantically) restricted [+r] if only a limited number of thematic roles can be linked to it, e.g. the OBJ<sub>θ</sub> and OBL<sub>θ</sub> functions. Conversely, a grammatical function is (semantically) unrestricted [-r] if there is no restriction as to which thematic role can be linked to it, e.g. SUBJ and OBJ. Objective [+o] functions include the OBJ and OBJ<sub>θ</sub> functions, while non-objective [-o] functions are the SUBJ and OBL<sub>θ</sub> functions:

(48) Feature Decomposition of Argument Functions (Bresnan and Kanerva 1989)

	-r	+r
-o	SUBJ	OBL <sub>θ</sub>
+o	OBJ	OBJ <sub>θ</sub>

The intrinsic classification (IC) of thematic roles as assumed in Alsina (1999) is shown in (49). The Patient IC in (49a) shows that a patientlike thematic role is either assigned [-r] or [+o]<sup>14</sup>. The Elsewhere IC in (49b) states that all other thematic roles are assigned [-o]. The constraint in (49c) is a constraint on the possible thematic roles that can be linked to an objective function<sup>15</sup>. Thematic roles that are higher up on the thematic hierarchy than the instrument role can only receive [-o] and be linked to a non-objective function. Only roles that are lower than or identical to the instrument role can be linked to an objective function. The thematic hierarchy is given in (49):

(49) Intrinsic Classification (IC) of Thematic Roles

- a. Patient IC:     pt  
                      /   \  
                     [-r] [+o]
- b. Elsewhere IC: θ  
                      |  
                     [-o]
- c.           \*θ >> Instr           (Alsina 1999:29, 33)  
                  |  
          IC    [+o]

(50) Thematic hierarchy (Bresnan and Kanerva 1989)

Agent > Benefactive > Recipient/Experiencer > Instrument > Theme/Patient > Locative

<sup>14</sup> In Bresnan (2001:309) and Dalrymple (2001:205), the intrinsic classification for a ‘patientlike’ (Bresnan 2001) or a theme/ patient role is [-r] only.

<sup>15</sup> It seems that this constraint is only assumed in Alsina (1999) and is not usually adopted in other versions of the a- to f-structure mapping theory (see Bresnan 2001, Dalrymple 2001 and Falk 2001 for versions that do not assume this).

Thematic roles in the a-structure are also assigned default classifications. This assignment depends on the relative position of the roles on the thematic hierarchy. The most prominent thematic role in a-structure is assigned [-r]. All other roles get [+r], if this is compatible with their intrinsic classifications.

The well-formedness of the functional-predicate structure is subject to two constraints, the Subject Condition and Function-Argument Biuniqueness:

(51) Subject Condition (Bresnan 2001:311)

Every predicator must have a subject.

(52) Function-Argument Biuniqueness (Bresnan 2001:311)

Each a-structure role must be associated with a unique function, and conversely.

With these, let us now look into the problem of thematic role fusion proposed for the treatment of the applicative operation in Alsina (1999).

#### *6.4.1.2.2 A- to F-Structure Correspondence - An Illustration*

Assuming that the applicative operation is to be applied to the verb root *-phika* ‘cook’ and the applied argument bears a benefactive role, the mapping from a-structure to f-structure is shown in (53):

(53) A- to f-structure mapping for the verb *-phika*, applying the applicative operation which introduces a benefactive role:

a. When the patient role to be fused with the applied role is assigned [+o] (49a)

<i>-phika</i>	<	<	Ag	Ben	Pt	>	Pt	>
IC			[-o]	┌──────────────────────────────────┐			[-r] / [+o]	└──────────────────────────────────┘
Defaults			[-r]				<b>[+o]</b>	
APPL				<b>[-o]</b>				
			SUBJ	?	<del>SUBJ</del> /OBJ/OBJ <sub>θ</sub>			

b. When the patient role to be fused with the applied role is assigned [-r] (49a)

<i>*-phika</i>	<	<	Ag	Ben	Pt	>	Pt	>
IC			[-o]	┌──────────────────────────────────┐			[-r]	└──────────────────────────────────┘
Defaults			[-r]				<b>[-r]</b>	
APPL				<b>[-o]</b>				
			SUBJ	*SUBJ	OBJ/OBJ <sub>θ</sub>			

By (49b), the agent role, being a non-patientlike role, is intrinsically classified as [-o]. By (49a), the patient role gets [-r] or [+o] by virtue of being a patient. How the composite thematic role, which is the result of the fusion of a benefactive role (the applied role) and a patient role, should be intrinsically classified is a puzzle. A benefactive role is non-patientlike and should therefore receive [-o] by (49b), while the patient role should get either [-r] or [+o] by (49a). In (53a), the patient component of the composite role is assumed to have [+o]. If we were to predict that

the composite role had properties of both the benefactive role and the patient role, there would be two possibilities. The first would be to assume that the conflicting [-o] and [+o] specifications cancel each other out. This would mean that the GF that this composite role would ultimately link to is *neither* objective nor non-objective. The second possibility would be to say the opposite - that the composite role would map onto a GF that is *both* objective and non-objective. None of these seems to be plausible. With conflicting intrinsic classifications for the composite role, it is simply not possible to map this role onto any grammatical function.

In (53b), the patient component of the composite role is assumed to have [-r]. Once again, let us assume that the composite role gets [-r] from the patient component and [-o] from the benefactive component. The only compatible function with these specifications is the SUBJ function. The composite role cannot be mapped onto SUBJ, because the agent role has already been mapped onto SUBJ. Mapping two thematic roles to a single function violates Function-Argument Biuniqueness. The mapping in (53b), like that in (53a), fails. A thematic role fusion treatment of the applicative operation, when the applied argument bears a benefactive role, does not seem to work.

### 6.4.1.3 Problem 3 - Multiple A-Structure-Changing Morphemes

Another even more serious problem with Alsina's mapping analysis concerns cases in which there is more than one a-structure-changing morpheme on the verb. As an illustration, assume that there are two such morphemes on a verb root: V-Aff<sub>1</sub>-Aff<sub>2</sub>. Each of these morphemes makes one change to the a-structure. Aff<sub>1</sub> makes a change to the a-structure of the verb root, but Aff<sub>2</sub> alters the verb root's *modified* a-structure. In order to formalize this, there must be a way to talk about not only the 'end point' a-structure, but also the intermediate a-structure.

Alsina attempted to do so by postulating that 'morphological change and the a-structure change associated with the same morpholexical operation [...] take place at the same time' (Alsina 1999:24). While this assumption is valid, his formalization faces a serious problem of creating new and temporary lexical items - the lexical entry of the affix interacts with that of the verb root, intrinsic classifications are assigned to the resulting roles, and the intermediate lexical item serves as the starting point of the morphological and morpholexical operation that follows:

*'The basic assumption is that the assignment of intrinsic classifications and morphological composition interact in a cyclic manner: intrinsic classifications apply to the underived a-structure and, successively, after any morphological process which alters its thematic content.'* (Alsina 1999:29; our emphasis in italics)

Each intermediate a-structure is thus accompanied by a partially derived word form, which also exists temporarily.

#### **6.4.2 An Alternative Proposal**

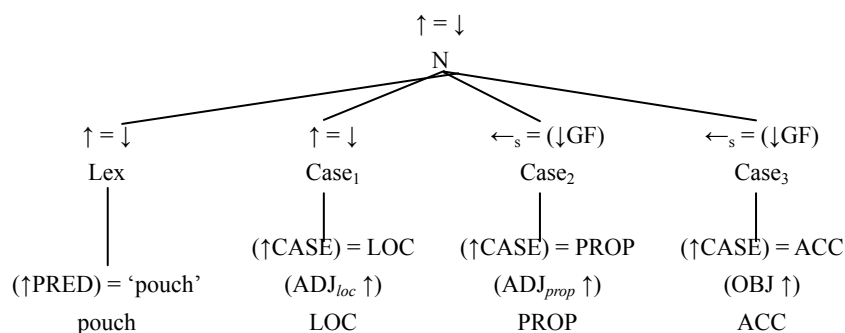
In this section, we shall see how it becomes possible to make reference to different parts of word and the level(s) of representation associated with each of them by drawing insights from Sadler and Nordlinger's (2004) representation of morphological structures in the form of morphology-syntax interface trees.

##### ***6.4.2.1 Morphology-Syntax Interface Trees***

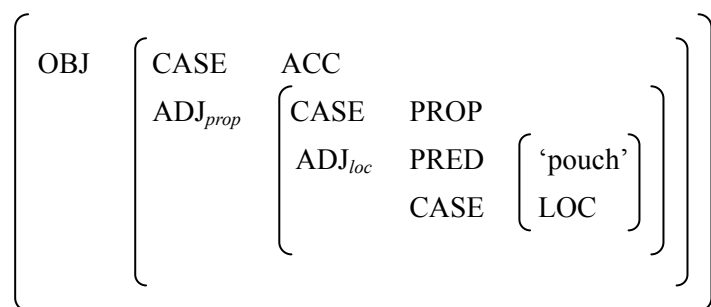
In order to account for case-stacking phenomena in Australian languages, Sadler and Nordlinger (2004) adopt the Principle of Morphological Composition (PMC), originally proposed in Nordlinger (1998). Case-stacking is when more than one case affix is found on a nominal, and each of them contributes functional information to the f-structure that is defined by its following case morpheme. To achieve morphological composition more straight-forwardly, Sadler and Nordlinger (2004) assume that the morphological structure is represented by a flat interface tree between morphology and syntax. The embedding relation between a case affix and its following case affix is represented by assigning the functional equation

$\leftarrow_s = (\downarrow GF)$  to the nodes dominating the non-initial case affixes:

- (54) a. Morphological structure of the nominal *thara-ngka-marta-a* (pouch-LOC-PROP-ACC) represented as a morphology-syntax interface tree (This is a combination of the partial trees in Sadler and Nordlinger 2004:176-177, e.g. 33-35.)



- b. F-structure for the nominal *thara-ngka-marta-a* (pouch-LOC-PROP-ACC) (Sadler and Nordlinger 2004:163, e.g. 5)



The functional annotation  $\leftarrow_s = (\downarrow GF)^{16}$  says ‘the f-structure defined by my sister to the left is a GF in my f-structure’. Take, for instance, the nodes Case<sub>1</sub> and Case<sub>2</sub>. As part of the lexical information specified by the case value LOC, some GF labelled ADJ<sub>loc</sub> is required to exist at some level of the f-structure. The annotation on its sister node to the right, Case<sub>2</sub>, indicates where this GF has to be - it has to be

<sup>16</sup> The arrow  $\leftarrow_s$  refers to the immediately preceding sister node. Following Sadler and Norlinger (2004), this symbol is contrasted with the  $\leftarrow$  symbol (without the subscript s) that is found in off-path constraints (Sadler and Norlinger 2004:176).

in the f-structure associated with that node, namely the f-structure called  $ADJ_{prop}$ . This gives the desired f-structure embedding, with the  $ADJ_{loc}$  function inside the  $ADJ_{prop}$  function.

#### **6.4.2.2 The Proposal**

The case-stacking phenomenon is similar to the morpheme ordering problem at hand in three respects: (i) there may be more than one affix on the stem; (ii) the order of affixes is significant; and (iii) any specification or change to a particular structure takes places sequentially. While Alsina (1999:24) assumes that ‘morphological change and the a-structure change associated with the same morpholexical operation [...] take place at the same time’, we assume that morphological composition motivates a-structure alternations.

##### *6.4.2.2.1 The facts*

We will, once again, work with the applicative affix and show how Sadler and Nordlinger’s analysis can be extended to account for the order of the a-structure-changing morphemes in Chichewa. In order to show that the order of the morphemes has an important role to play, a passive affix is also included on the verb root, together with the applicative affix. With two affixes, two morpheme orders are

possible, but only one is acceptable. Consider the following examples:

(55) a. Example from (Alsina 1999:9, e.g. 8b)

Mtsogoleri a-na-tumiz-**il-idw**-a zipatso (ndi ana)  
leader(1) 1.sg-pst-send-**appl-pass**-fv fruit(8) by children(2)  
'The leader was sent fruit (by the children).'

b. Example from (Alsina 1999:9, e.g. 8b)

\*Mtsogoleri a-na-tumiz-**idw-il**-a zipatso (ndi ana)  
leader(1) 1.sg-pst-send-**pass-appl**-fv fruit(8) by children(2)  
'The leader was sent fruit (by the children).'

Examples (55a) and (55b) have the same word order, but (55b) is ungrammatical while (55a) is grammatical. The only difference between the two examples lies in the order of the a-structure-changing morphemes on the verb root. In (55b), the passive morpheme precedes the applicative affix on the verb, whereas in (55a), the applicative affix precedes the passive morpheme.

#### 6.4.2.2.2 *The Analysis - An Interface Tree for -tumiz-il-idw- (send-pass-appl)*

Assuming the Mirror Principle is at work, the grammaticality of (55a) and the ungrammaticality of (55b) lead to the conclusion that the applicative operation must take place before the passive operation (for a benefactive applied argument). For ease of discussion, we will focus on the following morphological fragments of the two verbs:

- (56) a. -tumiz-il-idw-      send-appl-pass  
      b. \*-tumiz-idw-il-      send-pass-appl

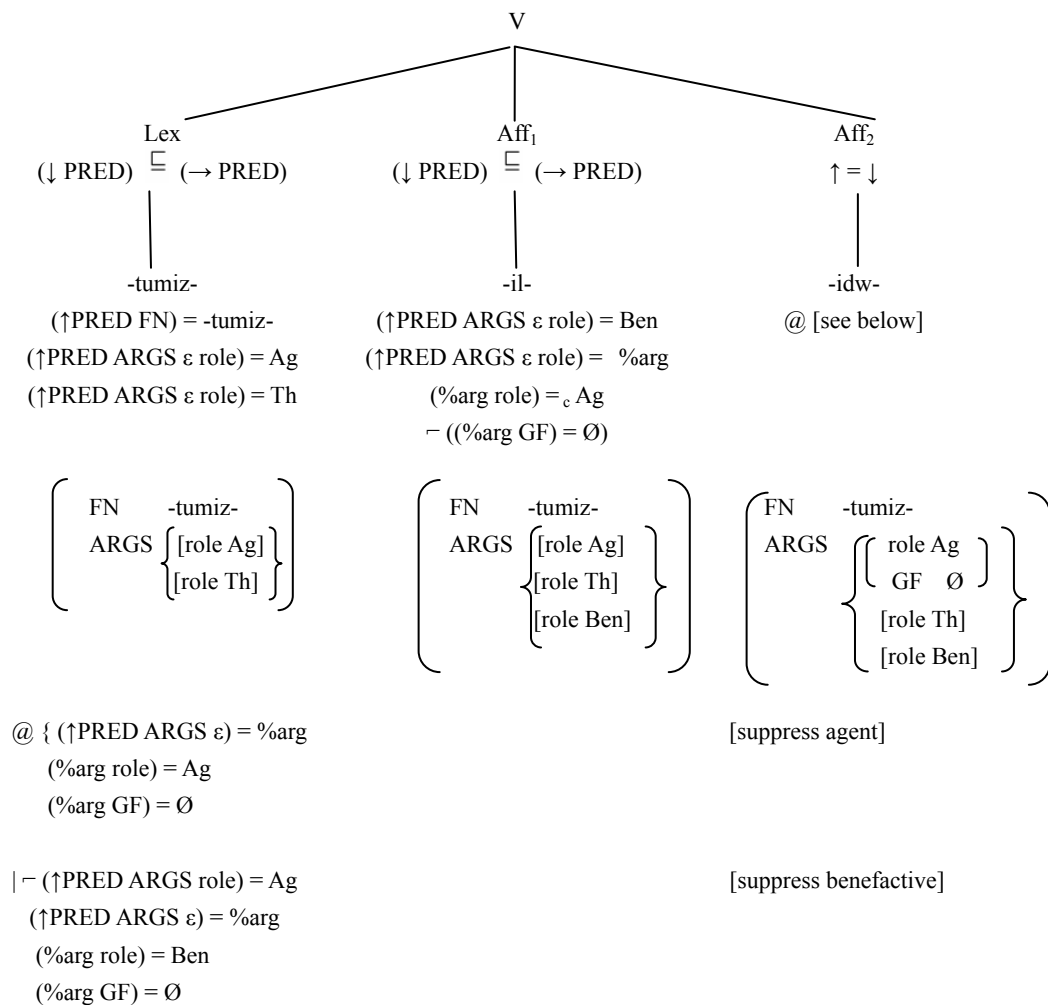
Let us take these morphological fragments and assign a morphological representation to each of them in the form of a partial interface tree. To obtain this interface tree, we need the annotation principle in (57):

(57) Annotation principle:

If there is/are a-structure-changing affix(es) on the verb, annotate the last a-structure-changing affix with  $\uparrow = \downarrow$ . Annotate the verb root and any other a-structure-changing affix with the subsumption equation  $(\downarrow \text{ PRED}) \sqsubseteq (\rightarrow \text{ PRED})$ .

The interface tree for (55a) is shown below:

(58) Interface tree for the well-formed verb form *-tumiz-il-idw-* (send-appl-pass)



$\begin{aligned} &  \neg \{ (\uparrow \text{PRED ARGs role}) = \text{Ag} \mid (\uparrow \text{PRED ARGs role}) = \text{Ben} \} \\ &(\uparrow \text{PRED ARGs } \varepsilon) = \% \text{arg} \\ &(\% \text{arg role}) = \text{Rpt/Exp} \\ &(\% \text{arg GF}) = \emptyset \end{aligned}$	[suppress recipient/ experiencer]
$\begin{aligned} &  \neg \{ (\uparrow \text{PRED ARGs role}) = \text{Ag} \mid (\uparrow \text{PRED ARGs role}) = \text{Ben} \mid \\ &(\uparrow \text{PRED ARGs role}) = \text{Rpt/Exp} \} \\ &(\uparrow \text{PRED ARGs } \varepsilon) = \% \text{arg} \\ &(\% \text{arg role}) = \text{Instr} \\ &(\% \text{arg GF}) = \emptyset \end{aligned}$	[suppress instrument]
$\begin{aligned} &  \neg \{ (\uparrow \text{PRED ARGs role}) = \text{Ag} \mid (\uparrow \text{PRED ARGs role}) = \text{Ben} \mid \\ &(\uparrow \text{PRED ARGs role}) = \text{Rpt/Exp} \mid (\uparrow \text{PRED ARGs role}) = \text{Instr} \} \\ &(\uparrow \text{PRED ARGs } \varepsilon) = \% \text{arg} \\ &(\% \text{arg role}) = \text{Th} \\ &(\% \text{arg GF}) = \emptyset \} \end{aligned}$	[suppress theme]

This interface tree has three nodes. The first one dominates the verb root, which is labelled *Lex*. The second one dominates the applicative affix and the last one dominates the passive affix. The tree shows the linear order of the morphemes on the verb, and therefore the order of any morphological process that each may be associated with.

The node labelled *Lex* is annotated with the equation  $(\downarrow \text{PRED}) \sqsubseteq (\rightarrow \text{PRED})$ . The f-structure of *Lex* subsumes that of its right-sister node, which is *Aff*<sub>1</sub>. Subsumption is necessary because the f-structure of the following node may contain more information than the f-structure of the current node (i.e. an additional semantic role licensed by an applicative affix). Besides, an equality equation cannot be assigned to this node because ultimately, the a-structure of the mother node *V* will be altered by the morphological operations triggered by the applicative and passive suffixes, and this f-structure should not be identical with that of the *Lex* node.



cannot bear the most prominent semantic role. Ensuring that there is an agent role is sufficient for this affix, as the only more prominent semantic role on the thematic hierarchy than the benefactive role is the agent role.

We assume that each type of applied argument is licensed by a different applicative affix, each of which has its own lexical entry, although in form all of them are the same. Support for this comes from Kinyarwanda, another Bantu language, in which there are different forms of applicative affixes. The form of the applicative affix is related to the role of the applied argument - benefactive: *-ir/ -er*; instrument: *-ish/ -esh*; and locative: *-ho/ -mo* (Simango 1995:8). The lexical entries of the instrumental applicative affix and the locative applicative affix are shown below:

(60) Lexical entry for the instrumental applicative affix:

*-i<sub>Instr</sub>*- Aff (↑PRED ARGS ε role) = Instr  
 (↑PRED ARGS ε) = %arg  
 (%arg role) = <sub>c</sub> { Ag | Ben | Rpt/Exp }  
 ¬ [(%arg GF) = Ø]

(61) Lexical entry for the locative applicative affix:

*-i<sub>Loc</sub>*- Aff (↑PRED ARGS ε role) = Loc  
 (↑PRED ARGS ε) = %arg  
 (%arg role) = <sub>c</sub> { Ag | Ben | Rpt/Exp | Instr }  
 ¬ [(%arg GF) = Ø]

The relative prominence of semantic roles is also important in the formulation of the lexical entry for the passive affix, which is shown below:

(62) Lexical entry of the passive affix

*-idw-* Aff { ( $\uparrow$ PRED ARGS  $\varepsilon$ ) = %arg  
(%arg role) = Ag  
(%arg GF) =  $\emptyset$

| - ( $\uparrow$ PRED ARGS role) = Ag  
( $\uparrow$ PRED ARGS  $\varepsilon$ ) = %arg  
(%arg role) = Ben  
(%arg GF) =  $\emptyset$

| - { ( $\uparrow$ PRED ARGS role) = Ag | ( $\uparrow$ PRED ARGS role) = Ben }  
( $\uparrow$ PRED ARGS  $\varepsilon$ ) = %arg  
(%arg role) = Rpt/Exp  
(%arg GF) =  $\emptyset$

| - { ( $\uparrow$ PRED ARGS role) = Ag | ( $\uparrow$ PRED ARGS role) = Ben |  
( $\uparrow$ PRED ARGS role) = Rpt/Exp }  
( $\uparrow$ PRED ARGS  $\varepsilon$ ) = %arg  
(%arg role) = Instr  
(%arg GF) =  $\emptyset$

| - { ( $\uparrow$ PRED ARGS role) = Ag | ( $\uparrow$ PRED ARGS role) = Ben |  
( $\uparrow$ PRED ARGS role) = Rpt/Exp | ( $\uparrow$ PRED ARGS role) = Instr }  
( $\uparrow$ PRED ARGS  $\varepsilon$ ) = %arg  
(%arg role) = Th  
(%arg GF) =  $\emptyset$  }

The lexical entry in (62) shows that the passive morpheme *-idw-* is an affix.

Passivization involves the suppression of the highest semantic role. Here, the lexical entry of the passive affix ensures that the highest semantic role links to a null grammatical function. This highest role will no longer be available for linking. Moreover, passivization does not suppress the highest semantic role at any point in time, but it suppresses the highest semantic role at a particular point in the altering

a-structure. There has to be a way to make reference to both the existing a-structure and the thematic hierarchy at the point of passivization. The constraint in the lexical entry in (62) does exactly this. The thematic hierarchy is built into the disjuncts. The constraint will always start by suppressing the agent, the highest semantic role on the thematic hierarchy, if there is an agent in the existing a-structure. If there is no agent, the next highest semantic role, the benefactive role, will be suppressed. The same logic applies for the other roles on the thematic hierarchy. As a summary:

- (63) To suppress the highest thematic role in an existing a-structure,
- i. suppress the agent.
  - ii. If an agent does not exist, suppress the benefactive.
  - iii. If an agent and a benefactive do not exist, suppress the recipient/ experiencer.
  - iv. If an agent and a benefactive and a recipient/ experiencer do not exist, suppress the instrument.
  - v. If an agent and a benefactive and a recipient/ experiencer and an instrument do not exist, suppress the theme.

The last semantic role that can possibly be suppressed is a theme role. If the highest semantic role is a locative role, this means this is also the only role in the a-structure. Suppressing it will give an a-structure with no semantic roles in it. Besides, if it is the only role, it should be linked to the SUBJ function even without passivization, and there seems to be no reason for passivization to apply.

Let us revisit the interface tree in (58) and explain how the f-structure of the root V comes about. At the node Lex, the verb root *-tumiz-* ‘send’, in its most basic

form, subcategorizes for two arguments, an agent and a theme. This information comes from the lexical entry of the verb. The annotation  $(\downarrow \text{PRED}) \sqsubseteq (\rightarrow \text{PRED})$  on Lex passes the f-structure information of the PRED of Lex to the f-structure of PRED in its right-sister node, which is  $\text{Aff}_1$ . In  $\text{Aff}_1$ , there is an applicative affix, the lexical entry of which says that (i) the affix *-il<sub>Ben</sub>-* licenses an extra benefactive role in the a-structure; and (ii) this applied role must not be the highest thematic role and that there must be an agent role, which is higher than the benefactive on the thematic hierarchy, in the a-structure. A modified f-structure results, which, according to the functional annotation on  $\text{Aff}_1$   $(\downarrow \text{PRED}) \sqsubseteq (\rightarrow \text{PRED})$ , is passed to the f-structure of the PRED in its right-sister node,  $\text{Aff}_2$ . A passive affix is in  $\text{Aff}_2$ , and the lexical entry of the passive affix ensures that (i) a change to the a-structure of PRED will be brought about by the *-idw-* passive affix; and (ii) the most prominent semantic role in the a-structure of PRED is suppressed, meaning it is linked to a null GF. The a-structure of PRED, shown in (64), will have all the necessary a-structure modifications made to it after the sequential application of the applicative and passive operations on the verb root:

(64)

$$\left( \begin{array}{l} \text{FN} \quad -\text{tumiz-} \\ \text{ARGS} \left\{ \left[ \begin{array}{l} \text{role Ag} \\ \text{GF } \emptyset \end{array} \right] \right\} \\ \left\{ \begin{array}{l} [\text{role Th}] \\ [\text{role Ben}] \end{array} \right\} \end{array} \right)$$

It is this a-structure that will be passed up to the root V according to the functional annotation  $\uparrow = \downarrow$  on  $\text{Aff}_2$ . The semantic roles will be linked to grammatical functions. The mapping is shown below:

(65)

<i>-tumiz-il-idw-</i>	<	Ag	Ben	Th	>
		$\emptyset$			
AOP <sup>18</sup>			[-r]	[+o]	
Defaults			[-r]		
			S/O	O	
Well-Formedness Conditions			S	O	

This accounts for the grammatical function realization in (55a).

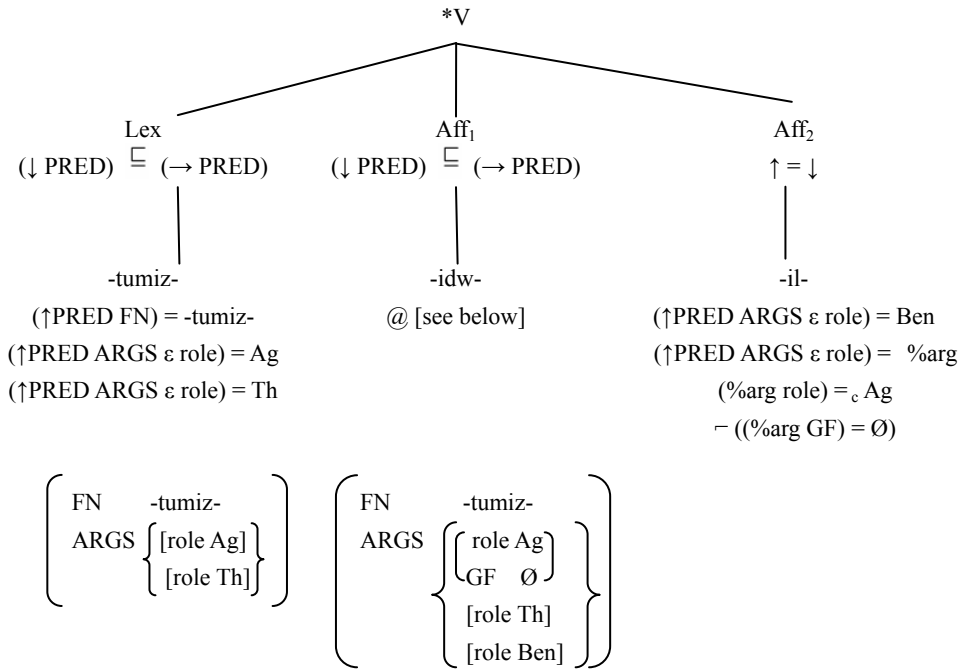
#### 6.4.2.2.3 Accounting for *\*-tumiz-idw-il-* (send-pass-appl)

The ungrammaticality of (55b), with the partial verb form *\*-tumiz-idw-il-* (send-pass-appl), can be easily accounted for. Here is the interface tree for (55b):

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<sup>18</sup> AOP stands for ‘Asymmetric Object Parameter’. The AOP states that only one role can be intrinsically classified unrestricted [-r] (Bresnan and Moshi 1990:172). The AOP holds in Chichewa (Alsina and Mchombo 1989; Bresnan and Moshi 1990), thus, the theme role must be classified [+o] but not [-r] as the benefactive role has been classified [-r].

(66) Interface tree for the ill-formed verb form *\*-tumiz-idw-il-* (send-pass-appl)



@ { (↑PRED ARGS ε) = %arg  
 (%arg role) = Ag  
 (%arg GF) = Ø

| - { (↑PRED ARGS role) = Ag  
 (↑PRED ARGS ε) = %arg  
 (%arg role) = Ben  
 (%arg GF) = Ø

| - { (↑PRED ARGS role) = Ag | (↑PRED ARGS role) = Ben }  
 (↑PRED ARGS ε) = %arg  
 (%arg role) = Rpt/Exp  
 (%arg GF) = Ø

| - { (↑PRED ARGS role) = Ag | (↑PRED ARGS role) = Ben |  
 (↑PRED ARGS role) = Rpt/Exp }  
 (↑PRED ARGS ε) = %arg  
 (%arg role) = Instr  
 (%arg GF) = Ø

| - { (↑PRED ARGS role) = Ag | (↑PRED ARGS role) = Ben |  
 (↑PRED ARGS role) = Rpt/Exp | (↑PRED ARGS role) = Instr }  
 (↑PRED ARGS ε) = %arg  
 (%arg role) = Th  
 (%arg GF) = Ø }

The passive affix *-idw-* is under  $\text{Aff}_1$ , which immediately precedes the applicative affix in  $\text{Aff}_2$ . This order is a reflection of the passive operation being applied before the applicative operation. The a-structure information is passed from Lex to  $\text{Aff}_1$ . At  $\text{Aff}_1$ , the passive affix suppresses the highest semantic role such that it is linked to a null GF. This information is in turn passed on to the following morpheme  $\text{Aff}_2$ , where applicativization takes place. As specified by the lexical entry of the applicative affix, an additional benefactive role is introduced into the a-structure. The last two constraints for the applicative affix, however, cannot be satisfied. In the current a-structure, there is no agent role which is not at the same time linked to a null GF. The a-structure becomes ill-formed, and hence the ungrammaticality of (55b).

The verb form is morphologically licensed, i.e. in principle the verb can be derived. But this verb form does not have a well-formed a-structure, as not all constraints imposed by the applicative affix can be satisfied. The verb form, even if it could be formed at m-structure, cannot receive any grammatical function realization. As a result, a constructed example like (55b), even with nominals in the ordinary GF positions (cf. 55a), is ungrammatical.

#### 6.4.2.2.4 An Alternative Interface Tree

There does not seem to be any *a priori* reason to suppose that the morphology-syntax interface tree is flat in nature<sup>19</sup>. The possibility of having a more hierarchical tree to represent the morphological structure of the verb, and therefore different functional annotations on the nodes, is briefly explored in this section.

Considering the morphological fragment *-tumiz-il-idw-* ‘send-appl-pass’ again, with three linear morphemes, there are two possible combinations:

- (67) a. [-*tumiz-il*]-*idw*-  
b. *-tumiz*-[*il-idw*-]

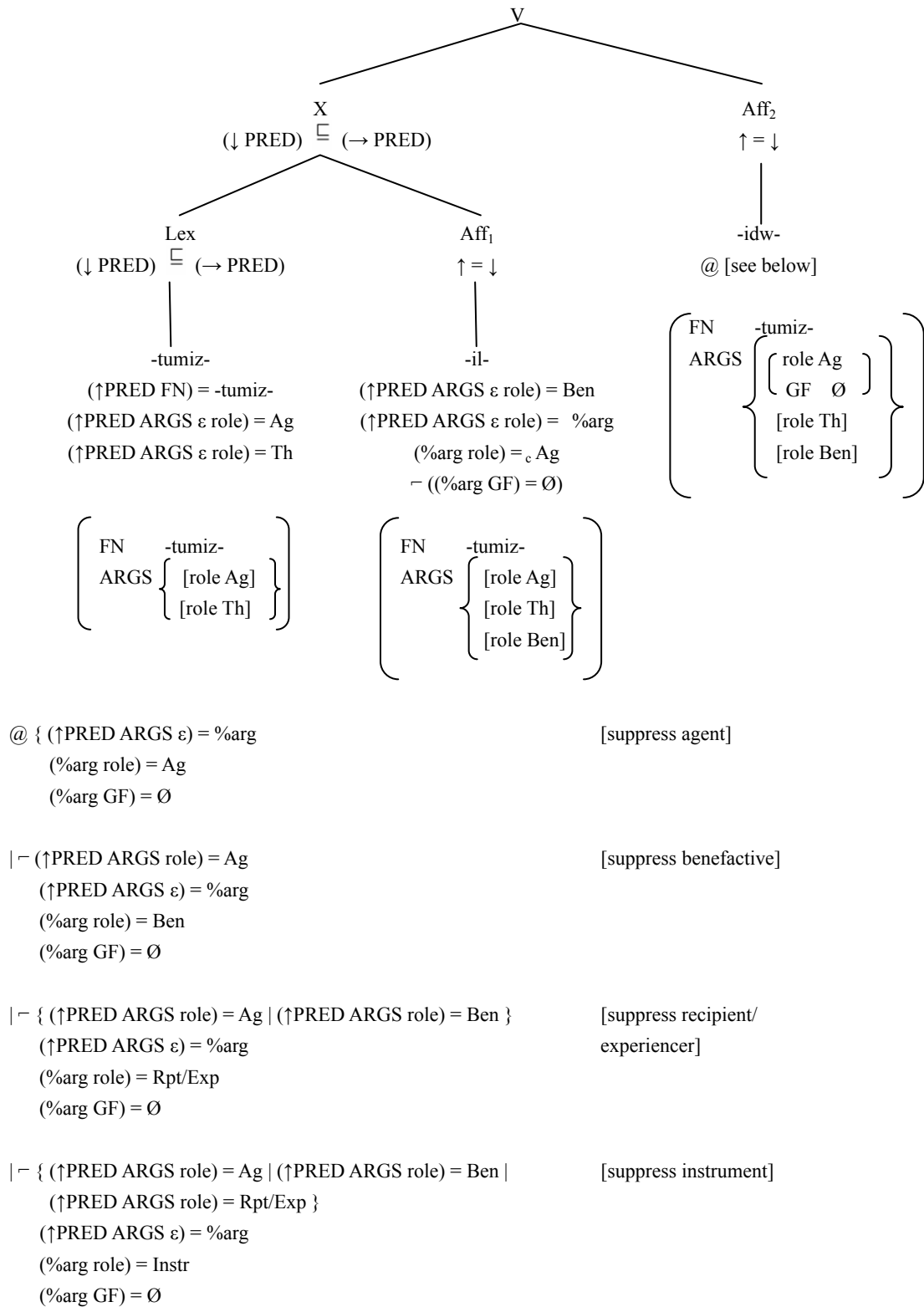
The combination in (67b) can be eliminated at once. The applicative and passive morphemes are both a-structure-changing morphemes, without an a-structure with contains semantic content and semantic roles to begin with, neither of these processes can be applied. It is simply impossible to applicativize or passivize another affix which does not contribute semantic content.

This leaves combination (67a), which has the following partial interface tree. For our purpose, assume that the morphological fragment [-*tumiz-il*] is labelled X:

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<sup>19</sup> I thank Doug Arnold, Ron Kaplan and Louisa Sadler for pointing this out.

(68) Hierarchical interface tree for the well-formed verb form *-tumiz-il-idw-*  
(send-appl-pass)



$$\begin{aligned}
| \vdash \{ (\uparrow \text{PRED ARGs role}) = \text{Ag} \mid (\uparrow \text{PRED ARGs role}) = \text{Ben} \mid & \quad [\text{suppress theme}] \\
& (\uparrow \text{PRED ARGs role}) = \text{Rpt/Exp} \mid (\uparrow \text{PRED ARGs role}) = \text{Instr} \} \\
(\uparrow \text{PRED ARGs } \varepsilon) = \%arg \\
(\%arg \text{ role}) = \text{Th} \\
(\%arg \text{ GF}) = \emptyset \}
\end{aligned}$$

Once again, the subsumption equation  $(\downarrow \text{PRED}) \sqsubseteq (\rightarrow \text{PRED})$  on Lex passes the PRED of Lex to its adjacent sister node on the right, under which the applicative affix is found.  $\text{Aff}_1$  is annotated with the head equation, which passes the augmented a-structure of the PRED associated with this node to its mother node X. X, with the annotation  $(\downarrow \text{PRED}) \sqsubseteq (\rightarrow \text{PRED})$  transfers this a-structure to  $\text{Aff}_2$ , which dominates the passive affix. The a-structure is altered accordingly, and is then passed up to V, since  $\text{Aff}_2$  is assigned the head equation.

The syntactic information represented on a hierarchical interface tree is very much similar to that shown on a flat tree. While the annotations may be slightly different and there is an additional intermediate node X which dominates Lex and  $\text{Aff}_1$ , the order of the processes and the resulting a-structures that are associated with the mother V are identical. The implications for having a hierarchical interface tree are perhaps more morphological than syntactic in nature, i.e. they are implications for the morphological structure of this language.

From a syntactic point of view, a flat interface tree seems to be more straightforward and economical. The information on the tree does not have to be passed through syntactically non-functioning nodes such as the one we labelled X. It is

precisely the unclear nature and function of this node that caused it to be tentatively called X. Unless there is evidence for the nodes Lex and Aff<sub>1</sub> to be a morphological constituent, a flat interface tree seems to be a better analysis. We leave further research into the morphological structure of Chichewa for the future.

#### **6.4.3 Advantages over Alsina's (1999) Treatment of Morpheme Ordering**

The present analysis has a number of advantages over Alsina's treatment of morpheme ordering. These include: (i) the possibility of referring to intermediate, evolving a-structures with the help of a morphology-syntax interface tree, without creating temporary, unwanted word forms; and (ii) a- to f-structure mapping will only take place once, from the 'completed' a-structure after all the relevant morpholexical processes have taken place. We shall look at each of these in more detail.

In the present approach, the internal structure of the word formed via applicativization and passivization is represented in the form of an interface tree between morphology and syntax. It is here that any relevant morpholexical operation is represented. The word is parsed into its component stem and affixes, and an a-structure change can be thought of as taking place right there and then - 'at the level of the information lexically associated with the affixes and not at the level

of the derived word' (Sadler and Nordlinger 2004:171). Each relevant affix causes a change in a-structure in a particular way. This alternation targets the a-structure associated with the preceding morpheme(s). That the order of morpholexical operations is reflected by the order of morphemes is captured.

In this approach and unlike in Alsina's proposal, we do not assume that intermediate morphological forms are created after each affixation of a morpheme. Alsina (1999:34) explicitly states that a new lexical item is created upon the affixation of an a-structure-changing morpheme, and that yet another such morpheme can be attached to this new lexical item. Intermediate morphological forms seem unnecessary and unmotivated, other than for the need in Alsina's analysis to keep track of the order of morphemes and therefore the order of morpholexical operations. It also seems that such forms cannot be avoided - if a new a-structure is assumed to be associated with some word form, new intermediate lexical items are bound to appear.

No intermediate lexical items are created in the present analysis. By representing a fully derived lexical item as a morphology-syntax interface tree, it is possible to refer to intermediate a-structures without assuming intermediate word forms. The interface tree makes it possible to make reference to a particular level of representation (a-structure in this case) associated with a particular morpheme.

Once all the alternations to a-structure are completed, a- to f-structure mapping is performed. Only the arguments of well-formed a-structures will have GF realizations at f-structure. Ill-formed a-structures simply cannot serve as the input for a- to f-structure mapping. That the a- to f-structure mapping principles will only be applied once and that no intermediate lexical items are assumed make the present analysis a more elegant one.

## 6.5 Chapter Summary

We have seen, in section 6.1, that there are two types of double object constructions in Chichewa. Their main difference lies in how the two objects are licensed. In one type, an additional object, known as the applied object, is introduced by an applicative affix attached to a monotransitive verb, while in the other type, the two objects are licensed by the inherently ditransitive verb *-patsa* ‘give’. An applied object may bear a number of semantic roles, including the benefactive, instrument and locative roles. Having a different role makes the applied object behave in different ways syntactically in terms of (i) adjacency to the verb; (ii) object-marking; (iii) relativization; and (iv) passivization. Combined results from these show that in a benefactive applicative construction, the applied benefactive argument is the unrestricted object, while the theme argument is the restricted object.

In an instrumental or locative applicative construction, either object may become the unrestricted object.

In section 6.2, we investigated the syntax of the objects in the inherently ditransitive *-patsa*-construction. The verb *-patsa* ‘give’ seems to be the only verb in Chichewa that subcategorizes for two objects in its underived form. It differs from all other ditransitive verbs in the language, whose ditransitivity is derived by the affixation of the applicative morpheme to the verb root. The objects in the *-patsa*-construction, however, pattern with those in a benefactive applicative construction. In both types of construction, it is the benefactive argument that is the unrestricted object. The theme argument is the restricted object. We have also shown how the valency of the verb *-patsa* ‘give’ can be further increased by one by affixing the applicative morpheme to it.

In addition to the applicative affix, it is not uncommon to find cases where there is/ are other a-structure changing morpheme(s) on the verb. In section 6.3, we have looked at one such verb form - a verb root is affixed with an applicative affix and a passive affix. We have also shown the structure of the word, with the verb root, applicative affix and passive suffix, can be represented in the form of a morphology-syntax interface tree, which makes it possible to refer to not only parts of the word but also the levels of representation that are associated with each

morpheme. We are particularly interested in the a-structure, as this is the structure that the applicative and passive affixes alter. More importantly, these morphemes alter the existing a-structure, one that is the result of the interaction between the verb root and any other a-structure-changing morpheme that precedes the morpheme in question in morphological form. With the interface tree, it is possible to make reference to an intermediate a-structure, one that is associated with a particular morpheme on the tree, without having to assume intermediate lexical items as in previous accounts. The change in a-structure, triggered by a change in m-structure, can be captured much more elegantly in our analysis.

The next chapter, Chapter 7, is the last chapter in this dissertation. We will summarize all our findings and conclude our work.

## **Chapter 7**

### **Conclusions**

This dissertation is dedicated to the syntax of double object constructions. It has long been observed that in a DOC, the two objects exhibit different syntactic behaviour. In Lexical Functional Grammar, these two objects are characterized as two distinct grammatical functions. The goals of this dissertation are to investigate the syntax of DOCs, and to explore the two object functions in LFG.

#### **7.1 Summary and Conclusions**

Characterizing the grammatical function known as ‘object’ is much more challenging than one would expect. Reading about this function is equally difficult. The body of literature on this function is surprisingly small. This is even more obvious when the body of literature on the object relation is compared to that on the subject function. A survey of the literature in Chapter 2 reveals that a prototypical object usually bears some kind of patientlike semantic role, has an information structural role of focus, and becomes the subject of a corresponding passive construction. These, however, are not meant to be definitive properties of an object. At best, they should only be treated as indications of an object.

Chapter 3 offers an overview of the grammatical properties of DOCs from a typological point of view. The chapter begins by surveying a wide range of encoding strategies of trivalent predicates with the argument structure < Agent, Recipient, Theme > across languages. We have seen that the DOC is only one of the means to express such a trivalent predicate, and not all trivalent predicates are necessarily realized by DOCs, i.e. ditransitive. The term ‘ditransitivity’ is strictly a syntactic notion, and a verb that is ditransitive subcategorizes for two objects. These objects express the non-agent arguments in the argument structure mentioned earlier. In the literature, the most frequently cited example of a ditransitive verb is GIVE. While GIVE may be the most representative ditransitive verb across languages, it is very often the case that GIVE is anomalous within a single language. This has been shown to be true in Cantonese (Chapter 5) and also Chichewa (Chapter 6).

The syntax of the objects has been explored in detail in Chapter 3 as well. In a construction with more than one object, one of the objects patterns with the monotransitive object, while the other behaves differently. The former is referred to as the primary object, while the latter is the secondary object (Dryer 1986). A previous analysis of DOCs conducted within the transformational framework (Larson 1990) is presented in the last section of the chapter. We have also seen the problems that are associated with this particular analysis.

The distinction between the object in a ditransitive construction that patterns with the monotransitive object and the other object which does not is also adopted in LFG. The terms used, however, are different. In LFG, the object that syntactically patterns with the monotransitive object is the unrestricted object OBJ. The one that does not is the restricted object OBJ<sub>θ</sub>. They are two distinct object functions in the inventory of grammatical functions assumed in the framework, and they have different syntactic behaviour. This has been discussed at length in Chapter 4. How DOCs are treated in LFG has also been presented in this chapter. That a ditransitive verb requires two complements can be straight-forwardly captured in LFG, without any additional assumptions or theoretical apparatus. The semantic trivalence of the predicate is handled at the level of a-structure. The ditransitivity of the verb, i.e. that it subcategorizes for two object functions, is captured at f-structure. The constituency of the VP and the linear order of the objects are issues at c-structure, where the ternary branching of the VP in question is not a problem at all. Each kind of linguistic information is handled at an appropriate level of representation.

Chapters 5 and 6 are case studies of DOCs, which build on the LFG assumptions outlined in Chapter 4. Chapter 5 is a detailed study of the syntax of Cantonese DOCs, and shows that the GIVE-construction in this language exhibits an order of objects that is anomalous to this particular construction. More

specifically, in the *bei* ‘give’-construction in Cantonese, the theme-object precedes the recipient-object. In all other ditransitive constructions, it is the recipient-object that precedes the theme-object. The GIVE-construction differs from other ditransitive constructions only in word order, a c-structure difference. In terms of all the f-structure phenomena investigated, it behaves just like any other ditransitive construction. The difference is most appropriately captured at c-structure, and two alternative proposals have been made to achieve this. We have also seen an anomalous GIVE-construction in a number of languages at the end of this chapter.

The GIVE-construction is also peculiar in Chichewa. The verb root *-patsa* ‘give’ is the only verb root in the language that inherently requires two objects in its underived form. An extra object may be added via a highly productive process known as applicativization. In a language like Chichewa, with the exception of the GIVE-construction, all DOCs come about by affixing an applicative morpheme to a monotransitive verb root. Chapter 6 has explored the syntax of these applicative constructions in depth, and also the syntax of the *-patsa* ‘give’-construction and that of its applied form which takes three objects.

The analysis of applicative constructions is challenging, as the unrestricted/restricted status of the objects depends on the type of semantic role that is applied. The three roles that are most frequently applied include the benefactive/recipient,

the instrument and the locative. The affixation of an applicative morpheme to a verb root thus affects the m(orphological)-structure, the a(rgument)-structure and the f(unctional)-structure of that verb in interesting ways. This can be succinctly dealt with by making use of the parallel levels of representation assumed in LFG. We have made one such proposal and this has been presented in this chapter.

The two case studies of DOCs discussed in this dissertation have clearly shown that a study of the syntax of DOCs involves much more than merely acknowledging the presence of two object functions in the construction. As we have seen, the morphology of the verb, the semantic roles that are required by the verb and the linear order of the arguments that express these roles are all relevant. Assuming various parallel but inter-related levels of representation, LFG has the appropriate tools to take all these into account. Reference can be made straight-forwardly to the information at the different levels of representation, including the a(rgument)-structure, the c(onstituent)-structure, the f(unctional)-structure and the m(orphological)-structure. Other levels are also available, should there be a need to refer to them in order to account for aspects of DOCs that have not been mentioned in this work.

## 7.2 Future Research Directions

We end this dissertation with a note on a few possible directions for future research. There are certainly many more possibilities than the ones to be outlined, but these are of the most interest to us at this point.

First, we would really like to learn more about the syntax of the GIVE-construction in those languages mentioned in section 5.4.2, whereby the theme-object is the object that is adjacent to the verb and precedes the recipient-object. It would be interesting to know how the syntax of this construction compares or contrasts with that of other ditransitive constructions. Is the difference in the order of objects the only difference, or are there other syntactic contrasts yet to be revealed? Furthermore, can the analysis for the Cantonese GIVE-construction be extended to other languages?

Second, our analysis for the data in Chichewa successfully accounts for cases where there is an applicative morpheme and/ or a passive morpheme. There are other a-structure-changing morphemes in the language, such as the causative affix and the reciprocal affix. A more complete analysis should be able to handle the effects on a-structure caused by all of these morphemes. Future work is certainly needed in order to make the analysis presented even more comprehensive.

We hope that this dissertation has contributed to the understanding of DOCs and the object functions, and has shed light on the overall inventory of grammatical functions in LFG.

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