

THE ACQUISITION OF THE DATIVE ALTERNATION
AND PARTICLE MOVEMENT BY SECOND LANGUAGE LEARNERS

CENTRE FOR NEWFOUNDLAND STUDIES

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WENDY P.A. SCAMMELL



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AND PARTICLE MOVEMENT

BY SECOND LANGUAGE LEARNERS

BY

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OF THE REQUIREMENTS FOR THE DEGREE OF
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ABSTRACT

This thesis looks at the second language acquisition of the English dative alternation, particle movement and their interaction by native speakers of Micmac. The associated theories of syntactic Markedness, which follows from a theory of Universal Grammar and Case theory are assumed as the basis for this research. The dative alternation is argued to have the unmarked structure [NP PP], as well as the marked structure [NP NP]. The unmarked structure for the verb-particle construction is assumed to be [V-Prt] and any other position of the particle in the sentence is marked.

Results of a study on the acquisition of these structures indicate that the unmarked forms of the dative alternation and the verb-particle construction are acquired first by second language learners. A greater number of subjects judged unmarked forms more acceptable than marked ones according to the results of an intuitive judgement test and employed more in production than marked structures are. Results on the interaction of these structures show that sentences containing an unmarked contiguous particle and a prepositional dative are judged most acceptable and are widely employed in the production task. Sentences involving a marked verb-particle construction and the marked double-object form of the dative are judged less acceptable and are employed less in production. The results presented in this study support a continuum of markedness for sentences involving both target structures.

FOREWORD

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CHAPTER 1

Introduction

1.1 Universal Grammar and Markedness

Within the theory of Universal Grammar (UG) outlined by Chomsky (1981a, 1981b), it is postulated that all children are endowed with an innate capacity for language acquisition. He proposes that there are principles associated with Universal Grammar which are consistent for all languages; however, the individual languages determine which principles of UG will be accessed.

Within the more recent principles-and-parameters model of UG, language learners start out with an open set of parameters which become fixed during the course of language acquisition. These parameters which are set on the basis of positive evidence from the environment may vary from language to language. The child's core grammar is determined when the parameters of UG are fixed in one of the permitted ways (Chomsky, 1981b).

UG theory also incorporates an associated theory of markedness which has two functions: "it imposes a preference structure on the parameters of UG, and it permits the extension of core grammar to a marked periphery. Experience is necessary to fix the values of parameters of core grammar" (Chomsky, 1981b, p.9). The assumption is that the child starts with the unmarked setting for the parameters and has to reset the parameters for structures for the language they are exposed to. Acquiring a

language, therefore, involves appropriately setting all the parameters of UG which pertain to that language. The prediction that follows from such a theory is that acquisition will reflect the structure of markedness and this is the position that will be taken in this thesis. However, it is recognized that, as pointed out by Chomsky and many others, there are many complicating factors that may intervene.

1.2 Case Theory and Acquisition

In English, abstract case (Chomsky, 1981b) is assigned by governing elements in a sentence and involves conditions related to adjacency. Specifically, an NP receives case at S-structure if it is governed by and adjacent to a tensed inflectional element, a verb or a preposition. Verbs assign objective case and prepositions assign oblique (object of preposition) case (Chomsky, 1981b). There is a general condition of well-formedness within Case theory called the Case filter which requires that all lexical noun phrases be assigned case. As first proposed by Rouveret and Vergnaud (1980), this Case filter which applies at surface structure can be stated as follows:

***NP, where NP has a phonological matrix but no case**

A lexical NP which has no case is not governed by a tensed inflectional element, a verb or a preposition in the sentence. Therefore, any sentence containing a lexically filled NP with no case will be blocked by the Case filter.

This thesis looks at the acquisition of the dative alternation and particle movement. For the dative construction, case is assigned to the direct object and the NP of the dative prepositional phrase by way of fundamental properties of Case assignment. In sentence (1):

(1) John gave the book to Bill

the book is assigned objective case by the verb give and Bill is assigned oblique case by the preposition to. However, the two NP's in the double-object construction receive their case in a slightly different way. In sentence (2):

(2) John gave Bill the book

Bill is assigned case by the verb give but the NP the book is said to be inherently case-marked (Chomsky, 1981b) as determined by properties of its governor. Stowell (1981) offers a somewhat different account for case marking of the double-object construction which will be discussed further in section 2.2.3.

With respect to the verb-particle construction it will be argued in this thesis that the verb-particle is a complex verb form that assigns case to the adjacent NP and

that this represents the unmarked form. The assignment of case involving the noncontiguous verb-particle forms derived by means of a movement rule, Move alpha, introduces a complication that will be discussed in more detail in section 2.2.2.

1.3 Markedness Theory and Acquisition

In looking at the acquisition of the dative alternation and particle movement, which is the focus of this thesis, there are certain issues that have direct bearing on the considerations of markedness. For example, how does a learner of English set the parameters involved in the dative alternation when there are two options that are equally grammatical and available to him¹ in the linguistic environment. As well, how does the learner come to differentiate between alternating and non-alternating dative verbs?

Similarly in the case of verb-particle constructions that allow the particle to move, one must ask how it is acquired when there are two grammatical options for the position of the particle in the sentence. The verb and particle may be considered as one contiguous lexical unit with a distinct meaning. On the other hand, if the verb and particle are assumed to be underlyingly non-contiguous, the unique semantic properties of the combination would have to be explained. From the point of view of acquisition the contiguous analysis is preferred.

This study looks at the acquisition of the English dative alternation and particle movement, and their interaction, by Micmac speakers learning English as-a-second language². It is assumed that each structure has both a marked and an unmarked form. For the dative, the unmarked form has the complement structure [NP PP] and the marked form has the complement structure [NP NP]. The following is an example of each:

- (3) John gave the book to Mary
- (4) John gave Mary the book

It is argued that verbs like give which alternate, are assigned the subcategorizations [NP PP], as in (3) and [NP NP], as in (4) in the lexicon. On the other hand, verbs which do not alternate, such as donate, would be assigned only the subcategorization [NP PP].

It will be argued in Chapter 2 that particle movement is governed by a movement rule which optionally moves the particle to the right of the direct object NP. The unmarked form is assumed to have the structure [V Prt NP], where the particle is contiguous to the verb, as in (5), and the marked form has the structure [V NP Prt], where the particle is noncontiguous, as in (6):

- (5) John gave back the book
- (6) John gave the book back

What renders the noncontiguous forms as marked is the fact that they require the application of a movement rule, move alpha. As well, the noncontiguous verb-particle form is considered marked because the direct object is case-marked by a verb that allows the particle to be separated from it.

This study also looks at sentences which involve the interaction of the dative alternation and particle movement; for example:

- (7) John gave back the book to Mary
- (8) John gave the book back to Mary
- (9) John gave back Mary the book
- (10) John gave Mary back the book
- (11) John gave Mary the book back
- (12) John gave the book to Mary back

Viewing the distinction between core grammar and the periphery as a continuum of markedness it is considered that (7) is the least marked as it contains both the contiguous verb-particle and the [NP PP] complement. Sentence 8 is more marked because it contains a noncontiguous verb particle construction and the prepositional dative complement. Sentence 9 is more marked because it contains the double-object dative construction and a contiguous verb-particle construction. With regard to learning, it is assumed that the movement rule that applies to verb-particle forms is a generalized rule in UG, move alpha and, as such, is learned very early. Therefore,

sentence 8 which contains one marked structure, a non-contiguous verb-particle construction is considered less marked than sentence 9 which contains one marked structure, the double-object construction. Sentence 10 is more marked than the previous three because it contains both the marked double-object dative and a noncontiguous verb-particle construction. Sentences 11 and 12 are the most marked because they contain dative constructions and verb-particle constructions in which the particles are not only separated from the verb but are sentence-final, the furthest possible position from the verb. As for the grammatical status of sentences 11 and 12, sentence 11 is doubtful and sentence 12 is clearly ungrammatical. These types of sentences are included in the testing in order to test all of the logical possibilities of the interaction of datives and verb-particles. There seems to be a structural constraint on how far the particle is allowed to be separated from the verb; however, there does not seem to be a problem in sentences which involve only one verb complement, as in:

(13) John looked the information up

The results of this study show that in general, the unmarked forms of both the dative and verb-particle constructions are acquired before the marked forms. For sentences involving the interaction, the results show that sentences containing the [NP PP] dative complement and a contiguous verb-particle are more acceptable and are produced more than those involving the same dative complement and a noncontiguous

particle, which in turn are more acceptable than those containing a double-object dative and either a contiguous or noncontiguous particle. Finally, the results of sentences containing the interaction of the target structures show that sentences containing a sentence-final particle and either dative form are the least acceptable and are not produced at all. It is concluded that there is a developmental sequence in the acquisition reflecting a continuum of the dative alternation, particle movement and the interaction of both; unmarked structures are acquired before marked ones³.

1.4 Overview of Thesis

Chapter 2 looks at the theoretical background governing both the dative alternation and the verb-particle construction. Chapter 3 reviews first and second language acquisition studies of the dative alternation, particle movement, and the interaction of both. Chapter 4 gives a brief description of the structures under consideration as they relate to Micmac. Chapter 5 gives a description of the subjects, methodology for data collection and an description of sentence types employed in the analysis of the results. Chapter 6 presents the analysis of the data and a discussion of the results. Chapter 7 presents the conclusions drawn from this research, and its implications for further research in the field.

FOOTNOTES

1. For the sake of consistency, masculine pronouns will be used to represent both males and females throughout this thesis.
2. There are a number of studies of other constructions which have been carried out within the generalized parameter-setting model of language. See, for example, Hyams' research on the null-subject parameter (Hyams 1986). The question concerning the distinction between core and periphery, which involve conceptions of markedness, is a complex one that has important implications for L2 theory. For discussion of these issues see Chomsky 1986: Liceras 1988; Gair 1988 and White 1989).
3. Pinker (1989) remarks on the statistical rarity of marked constructions and argues that rules that account for their derivation "usually violate some formal principle that holds of otherwise similar rules in a grammar" (p. 107). Furthermore, he argues that this provides support for the claim that marked structures are "harder to learn" in some sense. It is on this basis that we will assume in this thesis that conditions of markedness can be reflected in the developmental sequence by an unmarked form being acquired before a related marked one.

CHAPTER 2

Theoretical Background

2.1 Introduction

As mentioned in Chapter 1, the basic theoretical approach taken to account for the acquisition of the English dative alternation and particle movement is the theory of core grammar and markedness, as outlined by Chomsky (1981a, b). Various theoretical accounts of the dative alternation and particle movement have been posited in the literature. A review of some of this research is presented in this chapter.

2.2 Syntactic Theory

2.2.1 The Dative Alternation

2.2.1.1 transformational accounts

The classical account of the dative alternation involves a transformational rule (Fillmore, 1965; Jackendoff & Culicover, 1971). Jackendoff and Culicover assume that the underlying order of objects in a double-object complement is direct-indirect, as follows:

(1) John gave the book to Mary

The dative movement rule permutes the objects and deletes the preposition of the indirect object. The rule takes the general form:

(2) X-V-NP-to-NP-Y

1 2 3 4 5 6 => 1-2-5-3-0-6 (optional)

The deletion of the preposition to is accounted for by the rule:

(3) X-V-to-Y

1 2 3 4 => 1-2-0-4 (obligatory)

The deletion rule (3) applies after the dative movement rule (2).

Ermonds (1976), on the other hand, accounts for the dative alternation by a rule interchanging the positions of two constituents of the same category (NP):

(4) X - V - NP - to - NP - Z

1 2 3 4 5 => 1-4-0-2-5

Emonds claims that this rule has the advantage of being structure preserving in that the two NP's are moved into positions where the phrase structure rules allow the same constituents.

He claims that his analysis gives a more general account of the dative alternation than earlier accounts proposed by Fillmore (1965) and Jackendoff and Culicover (1971). These accounts, which were not structure-preserving, proposed rules involving the permutation of the two NP objects.

Smaby and Baldi (1981) account for dative movement by a base rule that generates [V NP PP] structures. The NP in the PP is then moved by an optional rule to the left of the direct object NP, as in:

(5) give a bone to the dog => give the dog a bone

However, in an attempt to provide a more unified syntactic theory, Smaby and Baldi argue that particle movement and dative movement, which are considered to be structure-preserving transformations, are interconnected. They assume that the verb + particle is noncontiguous in the base structure and propose an analysis that is broken down into two steps. The first involves a rightward NP movement of the direct object referred to as Cross Particle Movement (CPM), in which the NP moves across the particle slot. The second step is dative movement (DM) proper, which is the leftward NP movement of the indirect object NP to the position vacated by the direct object

NP. The preposition is then deleted as in the traditional formulation of dative movement. Their analysis of the verb phrase is:

(6) $V(NP)(Prt(NP))(to NP)$

Smaby and Baldi's analysis is similar to Emonds' in that both claim to be structure preserving. However, they differ in that Emonds' rule involves a simultaneous interchange of the two object NP's whereas Smaby and Baldi propose that there are two steps involved.

Larson (1988) also presents a transformational analysis of the double-object construction within the modern framework that implements a proposal of dative structure first suggested by Chomsky (1955/1975). He claims that there are clear reasons why one might want to relate prepositional datives and double-object structures transformationally:

"First, although the relation between the two shows irregularities in English, in other languages, the relationship is quite systematic. In particular, in languages with so-called applicative constructions (see Marantz (1984), Baker (1985) for discussion) oblique and double object structures show a highly productive relation strongly suggestive of derivational relatedness. This argues that transformational operations similar to "Dative Shift" must be available in principle. Second, a derivational approach to the dative-double-object relation is clearly desirable under any strong theses about the relation between structure and assignment of thematic roles" (Larson, 1988:350).

According to this view, a dative sentence like:

(7) John sent a letter to Mary

is derived from an underlying form in which the verb and its indirect object make up a constituent that excludes the direct object. The specific proposal adopted by Larson is that dative complement constructions like (7) involve an underlying clause-like VP whose "subject" is a letter and whose "object" is (to) Mary:

(8) John [_{VP} a letter [_{V'} send to Mary]]

The correct surface form is derived by an operation of verb raising. This movement leaves a trace in the original site and creates a sequence of coindexed V-positions, as in:

(9) John send [_{VP} a letter [_{V'} t to Mary]]

Double-object forms are then syntactically derived by dative shift. The former indirect object Mary becomes a derived VP "subject" and the former direct object a letter assumes adjunct status within V'. He claims that this analysis would apply to passives as well. Larson's approach differs from the other transformational accounts in that instead of moving NP's, the verb moves.

Jackendoff (1990) presents strong arguments against the transformational analysis proposed by Larson. Jackendoff states that Larson has needlessly created a novel structure for the double-object construction in order to accommodate facts on binding, and that linear order, which plays an important role in the double-object construction, is not taken into account. Jackendoff also contends that Larson's analysis introduces a great deal of structure which is not evident from the surface of the dative construction. Furthermore, Jackendoff points out that Larson's D-structure representation:

"violates two of the most longstanding and robust hypotheses of syntactic theory: (1) that a verb's argument structure is represented locally at some level of syntactic structure, and (2) that there is a structural distinction between arguments and modifiers" (Jackendoff, 1990:453).

Furthermore he points out that Larson does not take into consideration the semantic arguments against a dative shift analysis that motivated the proposals for a lexical analysis.

2.2.1.2 non-transformational accounts

There are those who argue that the dative alternation should not be accounted for by a transformational rule. For example, Stowell (1981), whose work is discussed in more detail in section 2.2.3, argues that through the process of NP-Incorporation, the need for a transformation to account for the alternation disappears.

In a paper dealing with the "projection problem" which asks how language learners acquire adult intuitions about their language based on primary linguistic data, Baker (1979) points out problems with the transformational account of the dative alternation. He argues that the classical transformational account incorrectly predicts full grammatical status for transformed sentences containing nonalternating verbs such as say and report:

(10) *George said Maxine something uncharitable

(11) *We reported the police the accident¹

Baker claims that adding negative rule features to exclude nonalternating verbs produces a grammar that is too complex with regard to learning and cites, for example, the well known fact that children learning English get little negative evidence from their caretakers. Thus the optional transformation rule is too general. Baker further states that:

"Classical transformational theory makes available for the description of primary data from English a number of optional transformational rules that express what appear to be quite attractive generalizations. In many cases, these generalizations prove to be false, but their falsehood is not apparent until we are provided with the information that certain specific sentences are ungrammatical. This is just the sort of information to which children learning English appear to have no dependable access" (Baker, 1979:547).

Baker suggests that if we were to assume that there are two phrase structure rules with associated subcategorization features to indicate which environments a given

verb appears in, the problems associated with the transformational account disappear. Only verbs heard in the primary data in the double-object environment are assumed to occur in that environment in the grammar. This does not, of course, rule out the possibility of overgeneralization of the rules.

Operating within lexical theory, Oehrle (1976) provides a solution to the dative alternation which is very similar to that put forth by Baker (1979). Under Oehrle's lexical framework, an alternating verb is subcategorized in two distinct ways: [NP PP], [NP], and thus satisfies the conditions for lexical insertion into both the prepositional dative structure and the double-object structure. The relation between both structures is stated by a lexical redundancy rule. Oehrle states that this approach has several attractive aspects:

"First, rules of this kind are restricted to operations on material specified in subcategorization frames. Thus no rule of this kind could take a noun phrase out of a purpose clause, for instance, and make it the subject of the sentence. Second, such rules are designed to account for cases of syntactic alterations in which semantic equivalence is not necessarily preserved. Thus, they are concerned with cases in which not all properties are invariant. In view of the way such rules are to be construed, we have an immediate way to build markedness considerations into the rule itself. Finally, note that all such rules will of necessity be structure-preserving, since in every case the structures related by the rules must meet the conditions specified by one phrase structure rule expansion in order to be generated" (Oehrle, 1976:271).

Oehrle also looks at morphological and semantic considerations of the dative alternation and proposes a morphological constraint to limit the domain of the

alternation. The lexical account, unlike the transformational account, has the ability to incorporate extra morphological information into the rule itself.

Elaborating on Oehrle's work, Mazurkewich & White (1984) suggest that there is evidence of the existence of a morphological as well as a semantic constraint in the acquisition of the dative alternation. The morphological constraint dictates that an alternating verb must be of the native stem class. The semantic constraint states that the indirect object must be the prospective possessor of the direct object in a double-object construction. Further discussion of Mazurkewich and White (1984) can be found in section 2.3.1.1.

2.2.2 Particle Movement

Like dative movement, particle movement has traditionally been accounted for by a transformational rule (Emonds, 1972, 1976, 1985; Fraser, 1976; Smaby and Baldi, 1981). However, many researchers disagree over the deep structure position of the particle; it may or may not be contiguous to the verb.

2.2.2.1 contiguous analyses

Van Dongen (1919) looked at verb-particle combinations and concluded: (a) that the particle generally precedes the direct object, (b) that the particle usually

qualifies the verb and occurs in close proximity to it, and (c) that the original meaning of the particle is often lost.

Live (1965) argues that the contiguity of the verb and particle is supported by (a) the retention of the particle along with the verb-component in the passive, as in (12):

(12) The dishes were broken up

(b) the ability of the particle to be substituted by a one-word synonym:

(13) find out = discover

(c) the fact that the verb-particle combination readily occurs in conjunctive parallel with a single verb, as in:

(14) I sent for and received the goods

(d) the grammatical juxtaposition of the two elements in a verb-particle combination, e.g. upstanding, ongoing.²

Bolinger (1971) claims that the "phrasal verb" is a lexical unit having a "set meaning which is not the sum of the meanings of its parts" (Bolinger, 1971:xii). He further argues that when a rule of syntax brings together particular words more frequently than others, as, for example, in the case of phrasal verbs, the high-frequency combinations tend to fossilize. The particle has a tendency to be found in the post-verbal position, as in (15), and a lesser tendency to be found after the direct object (16):

(15) to take out the garbage

(16) to take the garbage out

Similar claims have been made by Absalom (1973), who posits at least four factors contributing to the treatment of the verb-particle combination as a unit: (a) the similar syntactic behaviour of a large number of examples, (b) the statistical co-occurrence of the components of the combination, (c) an intuitive desirability to treat the structure as a unit, (d) the semantic interdependence of the constituents of the combination.

Fraser (1976), in distinguishing particles from prepositions, claims that the verb and particle are introduced into deep structure as a contiguous unit which is dominated by the constituent V. He argues that particles are syntactically more closely associated

with the verb which precedes them, whereas true prepositions are more closely associated with the noun phrase which follows them. Based on this evidence, he concludes that the particle cannot be categorized as a preposition, as Emonds (1976, 1985) claims. To illustrate the differences between particles and true prepositions, Fraser gives the following examples:

- (17) a. Harry looked furtively over the fence
 b. *Harry looked furtively over the client
- (18) a. In the street, the man reeled as if drunk
 b. *In the line, the man reeled as if drunk
- (19) a. He sped up the street, and she, up the alleyway
 b. *He sped up the process, and she, up the distribution³

In (17a), the adverbial furtively can precede the PP, whereas, in (17b), it cannot precede the particle. In (18a), the PP can occur in sentence-initial position, whereas in (18b) particles cannot. In (19a), PP's can function as a syntactic unit in sentence in which gapping has occurred, whereas in (19b) the particle up cannot.

2.2.2.2 non-contiguous analyses

Emonds (1976) argues that the particle is an intransitive preposition, i.e. an instance of PP. He maintains that these intransitive prepositions must follow the direct

object NP in deep structure, and that a movement transformation, which is structure preserving, optionally moves them next to the verb.

Emonds presents evidence of different idiolects of English in which he found that the most favoured and natural position for particles in sentences with verb - double-object order is between the two object NP's as in (20a):

- (20) a. John gave Mary back the comb
 b. John gave Mary the comb back
 c. John gave back Mary the comb

As well, he found that the position of the particle after the direct object, as shown in (20b), was usually rejected and that the idiolects differed when the particle was positioned directly after the verb as in (20c).

There is a problem with this analysis; it is limited to sentences that contain only alternating verbs in their double-object form. Neither alternating verbs in their prepositional form, nor non-alternating verbs appear in the discussion.

Based on his 1976 study, Emonds (1985) proposes the following transformational rule to account for instances of [V-Prt]:

- (21) $V - NP - \text{Prt} \Rightarrow 1 - 3 - 2$

He claims that in sentences containing idiomatic expressions, like:

(22) John took his student to task

the direct object obligatorily intervenes between the two parts of the idiom took to task. Emonds argues that if the deep structure of this idiom had the structure V-Prt, then in order to account for sentences such as (20), its derivation would require an obligatory transformation to move the PP part of the idiom into the position following the direct object. Based on evidence such as this, Emonds concludes that the verb and particle in a verb-particle construction are not contiguous in deep structure. However, as Emonds states, (22) is an idiomatic expression; the exception rather than the rule.

As discussed in 2.2.1.1, Smaby and Baldi (1981) argue that the base position for the particle is following the direct object NP. They posit a movement rule which they call "Cross-Particle Movement" that is a rightward movement of the direct object NP across the particle slot. Unlike Emonds' analysis, it is not the particle which moves, but the NP which precedes it. Following Emonds, Smaby and Baldi hypothesize that this movement rule is a structure preserving transformation. This cross-particle movement rule would transform (23a) into (23b):

- (23) a. John threw the garbage out
 b. John threw out the garbage

2.2.3 The Stowell Analysis

Stowell (1981) has developed a theory which is rooted in syntax, but which cannot be considered transformational. Stowell's analysis incorporates Case theory as outlined by Chomsky (1981b). Case theory is a subsystem of UG that assigns abstract Case to NPs which indicates the grammatical functions of Nps under the condition of adjacency. The adjacency condition on case assignment states that NP objects must appear adjacent to a governing verb or preposition. In a sentence such as:

(24) John sent a letter to Mary

case assignment follows directly from the theory, that is, a letter is the direct object and Mary is the indirect object. This structure is assumed to be the unmarked dative structure. The problem, however, arises in the assignment of Case to double-object constructions as in:

(25) John sent Mary a letter

or with verb-particle constructions where the object is not adjacent to the verb, as in:

(26) John gave back the book

Stowell presents the first unified account of dative and particle movement. He points out that we need not assume that the grammar of English contains a language-specific rule of dative and particle movement. Rather, the movement structures follow if one considers that English has the word-formation rules of NP-Incorporation and Particle Incorporation which can apply separately or simultaneously to a single verb. Stowell maintains that the case assignment problems associated with the double-object and the verb-particle constructions can be traced to the assumption that both NP objects in a dative construction, as well as the particles in a verb-particle construction, are complements of the verb. Under Stowell's analysis, the first NP in a double-object construction and the particle in a verb+particle construction are actually part of a complex verb phrase:

- (27) a. [_V-NP]
 b. [_V-Prt]

The verb-internal NP has the status of an incorporated object and the verb-internal particle has the status of an incorporated particle.

As stated earlier, the adjacency condition on Case assignment requires that for an NP to be assigned case, the NP must be adjacent to its governing verb. This condition poses a problem for the second NP in a double-object construction and the

direct object NP in a verb-particle construction. However, through NP-Incorporation and Particle Incorporation the adjacency problem on case assignment disappears.

Consider the example:

(28) John gave Mary the book

The indirect object NP is incorporated within the complex verb [_vgave-Mary] and case is assigned to the direct object NP [_{NP}the book] under adjacency. The resulting structure is as follows:

(29) John [_v{_vgave-Mary}][_{NP}the book]]

Similarly, in sentences containing the verb-particle construction:

(30) I switched off the light

the particle, which is adjacent to the verb, is incorporated within the verb to form the single complex unit [_vswitched-off]. The following is the syntactic structure for (30):

(31) I [_{VP}{_v{_vswitched-off}the light}]⁴

The direct object NP the light is adjacent to the complex verb after application of Particle Incorporation.⁵ Similar structures arise after the application of NP-Incorporation on double-object structures.

2.3 Summary

Based on the preceding discussion, it is assumed that the dative alternation is better accounted for by a lexical analysis based on Oehrle (1976). It has been shown that transformational theory has problems with constraining the rule; it can account for verbs which alternate but it has no method other than adding extra rule features to predict when a verb does not alternate. Baker (1979) has pointed out that under transformational theory, the dative alternation is written as an optional rule which automatically fails to apply to nonalternating verbs. As well, the transformational analysis cannot account for the morphological and semantic constraints proposed by Mazurkewich and White (1984) which have been shown to successfully limit the domain of the alternation.

On the other hand, the lexical analysis accounts for the alternation using a redundancy rule which subcategorizes alternating verbs as [NP PP] and [NP NP]; this would not apply to nonalternating verbs [NP PP]. The theory of Case assignment from which markedness considerations follow determines the course taken in acquisition. The unmarked structure for the dative alternation is considered to be [NP

PP] whereas the marked structure is [NP NP]. Finally, as Oehrle (1970) points out, the lexical account can incorporate extra morphological information provided by the morphological constraint within the rule itself. It doesn't need extra rules as the transformational account does.

Particle movement is assumed to be accounted for by an optional transformation which moves the particle to the right of the object NP. The unmarked structure for the verb-particle construction is considered to be [V-Prt] with the particle contiguous to the verb. It is assumed that the contiguous verb-particle forms are unmarked based on the semantic and syntactic arguments that treat it as a single lexical unit (Van Dongen 1919, Live 1965, Bolinger 1971, Absalom 1973, Fraser 1976 and Stowell 1981). The evidence that Emmons (1976, 1985) uses to argue for a noncontiguous analysis is weak and it relies on idiomatic expressions. The hypothesis forwarded by Smaby and Baldi (1981) is also weak as they propose an analysis whereby the particle remains stationary and the direct object NP moves over it. However, their analysis of particle movement relies crucially on their analysis of the dative alternation which they maintain is a movement transformation. It is assumed in this thesis that the dative alternation is best accounted for by a lexical analysis as the transformational account has been shown to be flawed.

It has been argued that for the dative alternation, the unmarked structure is the prepositional dative [NP PP] and the marked structure is the double-object structure [NP NP]. Likewise for the verb-particle construction, the unmarked structure is a verb

with a contiguous particle [V-Prt] and the marked structure is one with a noncontiguous particle⁶. Returning to sentences 5-10 in Chapter 1 which involve the interaction of the dative alternation and the verb-particle construction we can propose a continuum of markedness from least marked to most marked. Sentence (5) (renumbered sentence (32)):

(32) John gave back [_{NP}the book][_{PP}to Mary]

contains the unmarked dative structure [NP PP] as well as the unmarked [V-Prt] structure. Thus, this type of sentence would be the least marked. Sentence (6) (renumbered sentence (33)):

(33) John gave [_{NP}the book] back [_{PP}to Mary]

contains the unmarked dative structure [NP PP] and the marked verb-particle structure in which the particle is separated from the verb. Thus, sentence (33) is more marked than sentence (32). Sentence (7) (renumbered sentence (34)):

(34) John gave back [_{NP}Mary][_{NP}the book]

is also more marked than sentence (32) because it contains the marked [NP NP] structure and the unmarked [V-Prt] structure. Sentence (8) (renumbered sentence (35)):

(35) John gave [_{NP}Mary] back [_{NP}the book]

contains the two marked structures; double-object dative and noncontiguous verb-particle construction. Sentence (35) is thus more marked than the previous three. Sentence (9) (renumbered sentence (36)):

(36) John gave [_{NP}Mary][_{NP}the book] back

contains the marked double-object dative as well as a separated verb-particle construction. However, not only is the particle separated, it is also sentence-final - the furthest possible position from the verb which may account for its doubtful grammaticality. Sentence (10) (renumbered sentence (37)):

(37) John gave [_{NP}the book][_{pp}to Mary] back

contains the unmarked prepositional dative and a sentence-final particle. This sentence is not grammatical. Although sentences (36) and (37) would not be generated by the grammar and, hence, not be available to learners in the input, they were included in

the testing as they could provide valuable data about the subjects' reactions to ungrammatical sentences.

Based on this continuum of markedness, it is assumed that the least marked sentences are easier to acquire than the more marked sentences.

FOOTNOTES

1. From Baker (1979).
2. All examples from Live (1965).
3. From Fraser (1976).
4. From Stowell (1981).
5. Aarts (1989) has pointed out that Stowell's analysis fails to account for sentences such as:

(i) I looked the information up

in which there is no subject-predicate relationship between the direct object NP and the particle. According to Aarts, Stowell only takes into account sentences such as (i) for which there is a true subject-predicate relationship.

6. It should be noted that the marked construction in the case of the dative alternation results from the application of a lexical rule. The marked construction that results from particle movement, on the other hand, is derived by means of a movement rule. However, it is argued here that this does not alter the predictions being tested in this thesis which concern the theoretical assumptions underlying the notion of markedness and core grammar. This does raise, nonetheless, the question of whether a general movement rule would be acquired before a lexically constrained rule.

CHAPTER 3**Acquisition Research**

The following are brief summaries of studies on the first and second language acquisition of the dative alternation and particle movement.

3.1 English as a First Language**3.1.1 Acquisition of Datives**

Fischer (1976) studied English speaking subjects whose ages ranged from 3;6 to 5 years. The tasks consisted of an elicited imitation task and a picture choice task. The results showed that in the imitation task, the most frequent error was "de-transformation." That is, Fischer found that a sentence like (1) was often de-transformed into one such as (2):

- (1) John bought Mary the book
- (2) John bought the book for Mary

This supports the hypothesis that the unmarked structure for the dative alternation is [NP PP] because the children are not able to repeat the, as yet, unacquired double NP complement.

Fischer also reports that there was a methodological problem in the experiment. The results showed that for full NP objects, the four-year-olds responses were governed by the recency effect; that is they chose the last item they heard. Five-year-olds were better able to override the recency effect compared to the younger children but it was found that their grammar was more liberal than the four-year-olds' in that they accepted more ungrammatical sentences than the younger children did. Five-year-olds were also shown to overgeneralize double-object forms to contexts where they are not grammatically acceptable.

As mentioned above, subjects showed a preference for the PP version rather than the double-object version of indirect object constructions. In a more extensive study carried out by Fischer (1971), she showed that double-object constructions:

- (3) I gave the girl the book

are learned much later and are more difficult for the child to process than their direct object plus prepositional phrase counterparts:

- (4) I gave the book to the girl

Cook (1976) looked at the acquisition of the dative alternation by native English children between the ages of 5;0 and 10;0. Testing consisted of asking each child to move toys according to the instructions of the test sentences. Sentences containing combinations of the verb give, the indirect objects girl and man and the direct objects car and book were used. Half of the sentences contained the [NP] complement and the other half contained the [NP PP] complement. Results showed that the subjects made many mistakes with the [NP NP] complement but very few with the [NP PP] complement. As well, there was greater accuracy with age for the double object construction, but not significantly for the prepositional to-construction. This supports the hypothesis that the to-construction is acquired before the double-object construction. The subjects also showed a greater understanding of sentences in which the direct object was inanimate and the indirect object animate. This suggests that animacy is an important aid in the acquisition process of the dative alternation.

Mazurkewich and White (1984) argue that children initially acquiring the dative alternation have a rule based on positive evidence which is more general than the adults' rule which leads to overgeneralization of the dative alternation. They propose that alternating verbs have two subcategorizations, [NP PP], and [NP NP], related by a lexical redundancy rule which includes a semantic and a morphological constraint. The morphological constraint dictates that the verbs involved must be from the native-stem class, not Latinate verbs. The semantic constraint states that the indirect object must be the prospective possessor of the direct object in the double-object construction.

The results of this paper are based mainly on research carried out by Mazurkewich, (1982) of three groups of L1 English children whose mean ages were 9.0, 12.3 and 15.6 years. The subjects were tested by means of an Intuitive Judgement Test which elicited grammaticality judgements of pairs of sentences made up of either a verb and a [NP PP] complement or a verb and a [NP NP] complement. Some of the verbs optionally allow the alternation; for example, give, while others obligatorily permit only PP complements, for example, report.

The results showed that all three experimental groups were accurate in assessing the grammaticality of sentences containing verbs which alternate as well as sentences with Latinate (non-native) verbs taking only [NP PP] complements. However, sentences containing Latinate verbs and double-NP complements:

(5) *John explained Mary the answer

were more widely accepted by the subjects than would be expected, suggesting "the possibility of overgeneralization by speakers old enough to know the relevant verbs" (Mazurkewich and White, 1984:268). They suggest that this overgeneralization will be lost when the child becomes aware that an alternating dative verb must be native and that a certain type of semantic relationship, namely the prospective possessor, must be present. The loss of the overgeneralization will be brought about through positive evidence in the input, and the child's awareness of the semantic constraint before the morphological constraint.

White (1987a) tested her hypothesis that children who have acquired the syntax of the double-object construction, but have not yet limited the indirect object to those NP's which are the prospective possessors of the direct object, may be overgeneralizing the semantic aspect of the dative alternation. The data from 20 children whose ages ranged from 3;8 to 5;8 were used. Testing consisted of two tasks: an act-out and an imitation task. For the act-out task, children were asked, using toys, to perform the action described in a sentence read aloud by the experimenter. For the imitation task, the child and the experimenter each held a puppet and the child was asked to make his or her puppet repeat what the experimenter's puppet said. White used verbs which alternate in the adult grammar, such as draw, get, build, as well as verbs which occur only with benefactive for-phrases which do not alternate in the adult grammar; tie, open, wash.

In comparing the results from both tasks, White concluded that in general, the subjects were overgeneralizing the double-object structure to nonalternating verbs. However, the older subjects had a tendency to overgeneralize much more than the younger subjects did. This suggests that this overgeneralization is not indicative of problems in the initial stages of acquisition. Instead, it constitutes an example of the type of overgeneralization in which older children fail to limit syntactic or morphological rules to the semantic class to which they apply in the adult grammar.

There are serious problems with this study, as pointed out by Gropen, Pinker, Hollander, Goldberg and Wilson (1989). Adults are equally as capable of acting out and imitating ungrammatical sentences as children are. The fact that the children in

this study do so when instructed to tells us nothing about their acquisition of the double-object construction. As well, in the test sentences, the direct objects were always inanimate and the indirect objects were always animate. Thus, the children may have been able to correctly act out and imitate the ungrammatical sentences based on animacy, ignoring the syntax of each sentence. The conclusion drawn by White that L1 learners of English overgeneralize the semantic aspect of the dative alternation is not tenable.

Gropen et al. (1989) reanalysed data from the Brown corpus and conducted a series of experiments to test two hypotheses: the strict conservatism hypothesis, which predicts that the double-object form will not be used unless it has previously been heard in that form; and the criteria-governed productivity hypothesis, which predicts that both options of the dative alternation will be used productively.

In Study 1, the spontaneous speech of five native English children and their caretakers was analyzed. The subjects for this study included the three children studied longitudinally by Brown (1973) Adam, Eve, and Sarah, and two other children, Ross and Mark, whose transcript was obtained from the ChiLDEs project of MacWhinney and Snow (1985). The ages of the subjects ranges from 1;5 - 2;7 at the start of recording to 2;3 - 6;6 at the end. Utterances were classified either as double-object or prepositional dative. Eleven classes of alternating verbs compatible with the notion of causing a change of possession were examined from the corpus.

The results showed that neither version of the dative consistently emerged first, contrary to evidence presented by Fischer (1971, 1976), Cook (1976) and Mazurkewich and White (1984). Almost all of the children uttered at least some double-object sentences containing verbs not heard in adult speech which refutes the strongest version of the conservatism hypothesis. However, the subjects in the Gropen et al. study are younger than those studied by Cook, whose subjects' ages ranged from 5 to 10 years and those of Mazurkewich and White, whose subjects ranged in age from 9 to 15;6. Fischer's subjects' ages ranged from 3;6 to 5 years, again slightly older than those of Gropen et al.

The first experiment in the study by Gropen et al. was designed to test whether the morphophonological (i.e. monosyllabicity) and semantic (i.e. prospective possession) constraints proposed by Mazurkewich and White (1984) are psychologically real for adults. They suggested that if these constraints are not, then they cannot account for how children avoid or recover from overgeneralizations of the dative. Their subjects were adult first language speakers of English from 17-41 years. Using a questionnaire, each subject was asked to rate the acceptability of double-object sentences containing novel verbs using a seven-point rating scale. The results show that subjects judged double-object sentences which involved a change of possession as being significantly more acceptable than those which did not. As well, subjects judged sentences with monosyllabic verbs as being significantly more acceptable than those with polysyllabic verbs. Thus, both the semantic and the

morphological constraints on datives in English were shown to be psychologically real for the adults in this experiment.

In their second experiment, Gropen et al. tested whether the morphological and the semantic constraints are psychologically real for children. Native English-speaking children between the ages of 5;0 and 8;6 were taught four novel verbs; two monosyllabic and two trisyllabic, involving a transfer of possession. The tasks consisted of a production and a comprehension test designed to elicit both forms of the dative. Results showed that the children did produce double-object forms with verbs they heard in the prepositional form as well as the double-object form, although they preferred using verbs in the constructions in which they were taught. The subjects also showed a preference for monosyllabic verbs over polysyllabic verbs which supports the morphological constraint proposed by Mazurkewich and White (1984).

In their third experiment, Gropen et al. attempted to elicit double-object forms in more natural settings. The subjects were 32 native English-speaking children between the ages of 5;8 and 8;11. The same four novel actions as in Experiment 2 were taught to the subjects as well as four new novel stems; two monosyllabic and two trisyllabic. Results showed that children use novel verbs in the double-object construction even if they have never heard such combinations before. The researchers also found the children were more likely to produce a double-object form if the recipient could be understood as animate than if it was understood as inanimate.

Based on these experiments, Gropen et al. conclude that a weak version of Strict Conservatism is supported as they found that the productive uses of verbs in the double-object form constitute a tiny minority of children's usages and the vast majority of the verbs they used in both dative constructions could have been based on the language input children receive in their environment.

They consider that the criteria-governed productivity, which holds that children learn to constrain their rule to apply to monosyllabic verbs denoting possession changes, is consistent with the data, but found that children are not as productive as this hypothesis would predict. Gropen et al. postulate that:

"if the dative rule changes the semantic structure of a verb, then the interpretation of a sentence should be able to change when the verb dativizes: whereas the prepositional form specifies motion (literal or metaphorical) towards a goal, the double-object form specifies actual causation of possession" (Gropen et al., 1989:242).

They give the example of the verb send, which, in its prepositional form is ambiguous between sending to a location or to a person as in (6):

(6) John sent the package to... Mary, or Toronto

whereas in the double-object form it can only mean sending to a person (7), not to a location (8):

(7) John sent Mary the package

- (8) *John sent Toronto the package

Gropen et al. view the dative as "an operation on lexicosemantic structure" which changes "cause Y to go to X" to "cause Z to have Y". They suggest that this hypothesis solves four problems at once:

"it explains why different arguments get mapped onto the syntactic surface object-position in the two constructions; it explains why the interpretation of a single verb can change when it undergoes the alternation; it explains why verbs which take the prepositional dative form and are incompatible with causation of change of possession cannot be transformed into taking the double-object form; and, symmetrically, it explains why certain verbs can only exist in the double-object form" (Gropen et al., 1989:242).

3.1.2 Acquisition of Particles

There are very few studies reported in the literature that focus on the acquisition of verb-particle constructions. One study is that by Fischer (1976), who looked at the acquisition of verb-particle constructions in L1 English children whose ages ranged from 3;6 to 5 years. A sentence choice task was administered which tested grammaticality judgements of verb-particle constructions. Results showed that both particle external sentences as in (9), and particle internal sentences as in (10), are equally grammatical for these subjects:

- (9) John picked the book up
(10) John picked up the book

However, Fischer reports that there was a strong recency effect in her experiment; that is, the children tended to choose the last item they heard.

Clifton (1977) tested the acceptability of particles in sentences which have undergone the dative-movement transformation. His subjects were adult L1 English students of Spanish as a Second Language. Four classifications of sentences were used: (a) post-verbal particle; (b) particle between NP's; (c) sentence-final particle; (d) passive formed on indirect object. Thirty-two test sentences of these types were presented to the subjects in one of three modes: oral, written and timed, or written and untimed. The subjects were asked to indicate the acceptability of each sentence by circling the number on a six-point scale corresponding to their judgement.

The results showed that there was considerable variability between subjects as to the acceptability of the test sentences. However, in general, the acceptable positions for the particle seemed to depend on the particle itself. For example, sent out and type out were found to be acceptable if the particle was post-verbal or between NP's, but not if the particle was sentence final; whereas pay back, was acceptable between NP's or sentence final, but not post-verbal. This patterning suggests that there is continuum of acceptability along the lines proposed in this thesis.

Browman (1986) conducted two experiments with adult L1 English speakers to test factors which she hypothesized to affect separation and cohesion of the verb and particle in the verb-particle construction. In Experiment 1, Browman tested 64 college students in California. Taking several factors such as animate vs. inanimate direct object into account, a written test was designed to elicit sentences containing the verb-particle combination. Results of this experiment show that although most subjects showed variability in their responses, a few subjects consistently separated the verb and particle, while others consistently placed the particle next to the verb. The group as a whole showed a slight preference for not separating the verb and particle.

A second experiment was designed to test other factors such as idiomatic vs. adverbial usage, which were hypothesized to affect contiguity of the verb and particle. Results from this experiment showed that the factors which significantly favoured contiguity were idiomatic usage, and vowel-initial particles.

Based on the results of these two experiments, Browman concludes that the placement of a particle is not completely optional but is affected by semantic and phonological factors. As well, she concludes that individual subjects have their own personal preferences for separation or contiguity of verbs and particles.

3.1.3 Acquisition of the Interaction of Dative and Verb-Particle Constructions

As far as can be determined, the only acquisition studies that have been done on the interaction of the dative alternation and verb-particle structures on subjects whose first language is English was carried out by Fischer (1971, 1976). However, Fischer tests the effects of stressed and nonstressed particles, and she also contrasts the effects of unstressed pronouns compared to lexical nouns. Thus, the goals of her experiments involve issues different to those pursued in this thesis.

3.2 English as a Second Language

3.2.1 Acquisition of Datives

Mazurkewich (1984b) attempted to demonstrate that evidence based on the acquisition of dative structures in English by second language learners provides support for a theory of markedness. In English, a dative NP can appear either in a PP, which is assumed to be unmarked, or as the first NP of a double object construction, which is assumed to be marked. Mazurkewich hypothesized that the unmarked version of the dative will be acquired before the marked one. The data for this study came from previous research done by Mazurkewich (1984a) on native French and Inuktitut speakers, whose average age was 18.0 and 17.0 years respectively. The subjects were

classified into three levels of proficiency in English. Two native English control groups were used, the second of which had an average age closer to that of the experimental groups.

Testing consisted of intuitive judgements of simple declarative sentences containing a set of to-dative verbs and a set of for-dative verbs. The sentences were classified into four types which included alternating verbs in their double-object and prepositional phrase forms, non-alternating verbs, and distractor sentences.

Results showed that both experimental groups acquired the dative prepositional phrase complements [NP PP] before double-NP complements [NP NP]¹. As well, Mazurkewich found that French and Inuit speakers acquire the English dative alternation in the same way as first language learners of English do. However, as mentioned above, the Gropen et al. (1989) study indicates that both structures appear in the speech of very young children.

Le Compagnon (1984) looked at the acquisition of English dative verbs by native French speakers. She presented data based on two case studies and an experiment. In each of the case studies she examined the spontaneous speech of an L1 French speaker learning English as a second language. The first study lasted approximately 4 months, and the second, approximately 2. In the experiment, she administered two grammaticality judgement tasks containing to- and for-dative verbs to four adult subjects whose first language was French. The first test contained full NP indirect objects and the second, pronominal indirect objects. Based on her findings

from the studies, Le Compagnon concluded that the acquisition of datives by second language learners closely follows that of L1 learners but that L1 interference plays a role in the acquisition of a second language. Furthermore, she concludes that L1 French learners of English as a second language use different strategies in acquiring full NP indirect objects and pronominal indirect objects as a result of interference from French.

There are clear problems with this study. In the first case study, Le Compagnon states that errors such as:

- (11) *You explained me the rule many times

are a result of the L1 French learner taking the double-object form of the dative to be the unmarked form. She attributes this error to interference from French cliticization. In the Mazurkewich and White (1984) study, only lexical dative nouns were used. The assumption that Le Compagnon seems to be making is that pronouns and nouns behave in a similar manner, but she presents no evidence to indicate that this is the case. One other problem with Le Compagnon's research is that the experimental study does not contain production data.

White (1987b) tested the hypothesis that the second language learner's prior linguistic experience may predispose him or her towards transferring marked structures from the first language to the second. The developmental hypothesis (Mazurkewich, 1984, 1985) of markedness assumes that the learner starts out with the unmarked

hypothesis, and will acquire unmarked forms as a necessary developmental stage before the acquisition of marked forms. White supports the transfer hypothesis which assumes that the learner's L1 plays a role in the acquisition of a second language in that the L2 learner may transfer marked forms from the L1 to the interlanguage. White proposes that a situation in which the L1 marks a structure but the L2 does not would reveal the correct hypothesis. She claims that in the developmental view, such a situation provides no occasion for the occurrence of marked forms in the interlanguage. The learner's initial hypothesis will be that unmarked is required, and this will remain the hypothesis because the L2 in question does not exemplify marked forms. If marked forms show up in the interlanguage, this would support the transfer view, because nothing in the L2 evidence could have motivated these forms, whereas the L1 does contain them.

In two studies, White tested learners of French as a second language (FSL) using grammaticality judgement tasks on the double object construction, which is grammatical in English but ungrammatical in French.

In the first study, she tested 27 adult subjects. Approximately one half of the subjects were English speakers and the other half came from a variety of different language backgrounds which do not have the double-object construction as part of their grammar. The test included five ungrammatical double-object sentences, and three grammatical dative sentences containing the [NP PP] complement.

Results from the judgements involving ungrammatical double-object sentences suggest that both experimental groups have difficulty in recognizing the

ungrammaticality of these sentences. White suggested that this goes against the developmental hypothesis because in that view, L2 learners still have access to the unmarked case and revert to it. Therefore, they ought to reject the marked double-object construction. The responses to the grammatical sentences show that both groups are accurate, and that the differences between the two groups is not significant.

The second experiment involved child FSL learners from grades 5 and 6 whose L1 was English as well as a control group of native French speakers. At each grade level, there were three experimental groups, each having varying degrees of immersion in French. The experimental subjects took the tests in both French and English to see whether they treated the marked structures differently from the unmarked structures in the L1. White predicted that if marked structures that have been transferred are easily eradicated from the interlanguage, then the group with the most exposure to French should show the least tendency to transfer marked structures. Moreover, the group with the least exposure to French should show the greatest tendency to transfer marked structures. Two grammaticality judgement tasks were used: a listening comprehension task and a grammaticality judgement task which had a multiple-choice format. The results from both tasks showed that all FSL groups accepted double-object sentences significantly more than the control group did. White sees this as a confirmation of the results from the adults and concludes that this transfer is not just found at the lowest levels.

Results also showed that given sentence pairs that involve identical vocabulary, where one sentence of the pair is the unmarked version and the other the marked, the

predominant response is to judge the sentences to be the same; the next most frequent response was to prefer the marked version; and the least favoured response was the unmarked version. White concludes that although the double object construction is formally marked, it is not perceived as psycholinguistically marked in the L1.

There are some problems with this study. In the first experiment with the adults, White does not use a control group to compare the experimental subjects' results with. As well, she divides the subjects into two groups: native English speakers and subjects of other language backgrounds which do not have the double-object construction as part of their grammar. If transfer were an issue, then we would expect the two experimental groups to judge the sentences differently based on their language backgrounds. Instead, they both have problems with the ungrammatical French sentences.

As well, in the second experiment involving child FSL learners, White bases her conclusions about the double object construction on 3 sentences from each of the 2 tasks. In fact, White states (p. 272) that these sentences were used as distractors for other test items. Her results cannot be conclusive because the data are too limited.

Hawkins (1987) looked at the second language acquisition of the English dative alternation by L1 French speakers ranging in age from 19 to 24 years. He used 2 elicitation tasks: a grammaticality judgement task, in which subjects judged 36 dative verbs in English sentences, and a sentence construction task, which tested the subjects' knowledge of 42 dative verbs, some of which appeared in the grammaticality

judgement task. Results from both tests suggested that there is a developmental sequence in the acquisition of the dative alternation: subjects first acquire the [NP PP] complement and then the [NP NP] complement.

3.2.2 Acquisition of Verb-Particle Structures and Structures Involving the Interaction of the Dative Alternation and Verb-Particle Combinations.

To my knowledge, there have been no studies carried out on the second language acquisition of verb-particle structures. As well, aside from an unpublished pilot study carried out by this researcher (Sheppard, 1989) and discussed below, there have been no second language studies of the interaction of the dative alternation and verb-particle structures. In that study, 20 first year university students for whom English was a second language were tested. They came from 8 language backgrounds and their average age was 23.5 years. As well, a control group of 25 first year University native English speakers was included in the experiment. The language backgrounds of the ESL group were diverse: French, Cantonese, Mandarin, Arabic, Bengali, Amharic, Malaysian, and Ukrainian. Testing consisted of an acceptability judgement task which tested learners' judgements of grammatical and ungrammatical English sentences. Each subject was given a type-written copy of the test sentences along with instructions and a three-point judgement scale for each sentence. In all, there were 44 sentences tested including distractors. Six verb-particle structures were

used: pay back, give back, read off, send off, type out and send out. The instructions as well as the test sentences which were randomized were also recorded on a cassette tape and played to the subjects. The sentences were uncovered as they were being read on the tape and the subjects were given approximately 4 seconds between each sentence to make their judgements. Each sentence was judged as either acceptable, unacceptable or questionable. Each of the test sentences contained a to-dative verb which optionally allows the alternation, and a verb-particle combination.

The test sentences involved the interaction of the dative alternation and the verb-particle construction and were broken down into 7 types depending on the position of the particle in the sentence as well as the form of the dative complement. Type 1 sentences:

(12) Susan sent off Mark an invitation

contained the marked double-object dative and the unmarked contiguous verb-particle construction. Type 2 sentences:

(13) Susan sent Mark off an invitation

contained both marked structures, double-object dative and noncontiguous verb + particle. Type 3 sentences:

- (14) Susan sent Mark an invitation off

contained the double-object dative and a sentence-final particle. Type 4 sentences:

- (15) Susan sent off an invitation to Mark

contained the unmarked verb-particle construction and the unmarked prepositional dative. Type 5 sentences:

- (16) Susan sent an invitation to Mark off

contained the prepositional dative and a sentence-final particle. Type 6 sentences contained the prepositional dative and the noncontiguous verb-particle construction:

- (17) Susan sent an invitation off to Mark

Finally, type 7 sentences were distractors which contained nondative verb-particle constructions which do not undergo particle movement:

- (18) Susan walked up the street

- (19) *Susan walked the street up

The results showed that in general, subjects from all language backgrounds preferred the unmarked form of the dative [NP PP] over the marked form [NP NP]. As well, the second language subjects preferred the unmarked form of the verb-particle combination [V-Prt] as opposed to the marked form; any other position of the particle in the sentence. In general, the experimental groups showed a continuum of acceptability from most unmarked type 4 sentences [V Prt NP PP] to more marked type 6 sentences [V NP Prt PP], then type 1 sentences [V Prt NP NP], type 3 sentences [V NP NP Prt], type 2 sentences [V NP Prt NP] and finally the most marked type 5 sentences [V NP PP Prt].

The conclusion was that there is a developmental sequence in the acquisition of these constructions with the unmarked structures being acquired first and the marked ones later.

3.3 Summary

With the exception of the problematic research presented by White (1987a, b) and Le Compagnon (1984), the first and second acquisition studies of English reviewed in this chapter all lead to the same general conclusion: the prepositional phrase complement of the dative alternation is easier to learn, and is learned before the double-object complement. Given that the [NP PP] complement is unmarked, and the [NP NP] complement is marked, this supports the markedness claim that unmarked structures will be acquired before marked ones.

First language studies of the dative alternation by Fischer (1976, 1971) and Cook (1976) show that the unmarked prepositional dative form of the dative alternation is acquired earlier than the marked double-object form of the dative. Fischer reported that her very young subjects showed a preference for the PP version over the double-object version and that the double-object version is learned much later and is much more difficult to process than the prepositional dative. Cook reported that his subjects who were also children made many mistakes when acting out sentences containing the double-object dative and very few with those containing the prepositional dative. He also reported greater accuracy with age for the double-object construction but not for the prepositional dative suggesting that the double-object construction is learned much later.

Gropen et al. (1989) reported that their subjects used both dative structures at a very early age. However, the research on older L1 children and adults clearly show an unmarked/marked acquisition sequence for the dative alternation. There have been no proposals put forth in the literature to account for these contradictory findings. With respect to the Gropen et al. study, it could be the case that the first instances of dative structures were repetitions of unanalyzed sentences and that their status in the grammar will change once the adult grammar is projected. This is a well known issue on L1 research and emphasizes the kinds of difficulties that are encountered in experiments that involve young children. Recall, for example, the Fischer (1976) L1 study of dative acquisition, discussed in Section 3.1.1, where a recency effect found in young children was shown to be overcome in older children. However, insofar as

second language acquisition is concerned, the sequence of emergence is clearly unmarked [NP PP] before marked [NP NP]. Mazurkewich (1984) reported that French and Inuktitut speakers acquired the prepositional dative before the double-object dative. Hawkins (1987) found that adult native French speakers acquired the [NP PP] dative before the [NP NP] dative, suggesting a developmental sequence in the acquisition of the dative alternation.

In first language studies the acquisition sequence of the verb-particle construction is inconclusive. Fischer (1976) tested children's acquisition of the verb-particle construction between the ages of 3;6 and 5 years and found that contiguous verb-particle structures and noncontiguous verb-particle structures were equally grammatical for these subjects. However, it may well be that these children have already fully acquired both forms of the verb-particle construction. Testing needs to be carried out on younger children in order to make clear acquisitional claims. Clifton (1977) tested the acquisitional status of the verb-particle construction on adult speakers of English. He tested sentences which included a contiguous verb-particle construction, a particle between two NP's of a double-object construction and a sentence final particle. Although Clifton notes that there was considerable variability between subjects as to the acceptability of the test sentences, he suggests that there is a continuum of acceptability which depends on the position of the particle in the sentence. Browman (1986) tested adult native English speakers' acquisition of the verb-particle construction. She reported that the group as a whole showed a slight preference for a contiguous verb-particle construction.

Sheppard (1989) tested the acquisitional status of the interaction of the verb-particle construction and the dative alternation on second language learners of English. The L2 subjects represented eight language backgrounds and four major language families. The subjects were not grouped according to the level of their proficiency in English. Based on the results of an acceptability judgement task, Sheppard reported that subjects from all language backgrounds preferred the prepositional dative over the double-object dative, and the contiguous verb-particle construction over the non-contiguous one. The results also indicated that in sentences involving the interaction of both constructions, subjects showed a continuum of acceptability from the least marked [V Prt NP PP] sentences to the most marked [V NP PP Prt] sentences.

FOOTNOTES

1. Kellerman (1985) points out a number of weaknesses in the study by Mazurkewich; however, see the reply to Kellerman by Mazurkewich (1985).

CHAPTER 4

Description of Micmac

Micmac is an eastern Algonquian language which is spoken in Quebec, New Brunswick, Nova Scotia and Prince Edward Island. There are native Micmacs living in Newfoundland, but for all practical purposes, the language has died out in this province (Inglis, 1986).

4.1 Dative Structures

Sentences in Micmac have relatively free word order, and the grammatical relations are indicated by inflectional endings. For example, the sentence:

(1) John gives the book to Mary.

could be translated in a number of ways:

(2) a. Iknmuajl Sa'n Malial wi'katikn
give John Mary book

b. Sa'n iknmuajl Malial wi'katikn
John give Mary book

- c. Sa'n iknmuajl wi'katikn Malial
 John give book Mary
- d. Malial Sa'n wi'katikn iknmuajl
 Mary John book give

The verb *iknmuajl* is a two-goal verb in that it has two complements: *wi'katikn* and *Malial*. In Micmac, the direct and indirect object are normally distinguished by gender, the direct object being inanimate and the indirect object animate. As well, when both subject and indirect object are third person, the indirect object is marked by the inflection *-al*. Thus in (2a-d), where both the subject and indirect object are animate, we know that *Sa'n* is the subject and *Malial* is the indirect object because of its inflectional ending.

In the above example, if the English sentence had been:

- (3) John gives Mary the book

the Micmac translations would have been exactly the same. In other words, Micmac does not permit a double-object structure similar to that found in English.

4.2 Particles

In English, particles are free morphemes, which by definition are not morphologically bound by any other lexical item in a sentence.

Micmac, on the other hand, has bound preverbs which are attached to the verb.

For example:

(4)	apaji-	'return'
	iknmuajl	'give'
	apaji-iknmuajl	'give back'

Micmac preverbs function in the same way as English particles do in that they alter the meaning of the verb in some way. The verb iknmuajl means 's/he gives him/her it', whereas when the preverb apaji- has been added, it means 's/he gives him/her it back'. The meaning of the verb is enhanced by the preverb.

The same story holds for English particles. The verb look has a subtle difference in meaning from the verb + particle combination look up. Likewise, the verb send is somewhat different in meaning from the combinations send off, or send out.

Although Micmac preverbs function in much the same way as English particles, they do not undergo movement since preverbs are bound morphemes and cannot be

separated from the verb. In English, because particles are free morphemes, they are able to move more freely in the sentence. If one were to translate the sentence:

(5) John gave back the book to Robert

the following would be possible:

- (6) a. Sa'n apaji-iknmuap wi'katikn Robertal.
 John back give book Robert
- b. Sa'n apaji-iknmuap Robertal wi'katikn.
 John back give Robert book
- c. Sa'n Robertal apaji-iknmuap wi'katikn.
 John Robert back give book

However, as mentioned above, separating the preverb from the verb is not possible in Micmac because it is ungrammatical.

4.3 Summary

This discussion has demonstrated the differences between the syntax of English and Micmac. Micmac has free word order and is highly inflected. English, on the other hand has SVO word order and has very little inflection. In Micmac, case is indicated by inflectional morphology and the animacy of each NP. Abstract Case is directly assigned in English to each NP in a sentence by an adjacent Case assigning element. Micmac has preverbs which function in the same way as English particles do. However, Micmac preverbs are bound thus cannot undergo movement, whereas English particles can be separated from the verb. These differences demonstrate that Micmac and English are structurally different languages. Thus, any influence that could be attributed to *transference*, for example, does not seem to be at issue. However, in order to rule out influence from the mother tongue, the facts of core grammar and markedness in Micmac would have to be established, and developmental studies of Micmac as a first language would have to be carried out. This is, however, beyond the scope of this study.

CHAPTER 5

Experimental Study

5.1 Introduction

This experiment focuses on the acquisition of the English dative alternation, verb-particle forms, and their interaction by Micmac speakers living in Whycocomagh, a reservation in Cape Breton, Nova Scotia. Whycocomagh is a town of approximately 538 people of which 80% are native Micmac speakers and 20% are native English speakers. Although Micmac is the language spoken in the home, the only formal exposure to Micmac that these children have is in grade 6, where they are taught one course on the Micmac language.¹ Although they are educated in English, English is a second language for these students.

5.2 Subjects

Three groups of native Micmac speakers were tested whose ages ranged from 12-19 years. Students in two of the groups were enrolled in grades 7 and 9 at the Whycocomagh Federal School which is situated on the Whycocomagh reservation. The third group is made up of grade 11 students who attend the Strait Area Education

Recreational Centre in Port Hawkesbury, Nova Scotia, which is approximately 45 kilometres from Whycocomagh. All of the subjects for this study live on the Whycocomagh reservation, the grade 11 group being bussed each day to Port Hawkesbury. There is a total of 23 experimental subjects, 11 male and 12 female: 6 subjects in grade 7, 8 subjects in grade 9, and 9 subjects in grade 11. All 23 subjects participated in the acceptability judgement task and only 22 participated in the sentence completion task as one of the subjects was absent on the second day of testing.

A control group consisting of 20 L1 English speakers participated in this study. These subjects were enrolled in grade 7 at MacDonald Drive Junior High School in St. John's, Newfoundland.

5.3 Elicitation Procedures Used

All subjects were given a Cloze test followed by two tasks: an acceptability judgement task, and a sentence completion task.

5.3.1 Cloze Test

The Cloze test² was administered first. It was used to classify the subjects into three levels of proficiency in English. The test consisted of a passage from an English text which had certain words removed; however, the first and last sentences were left

complete. Included in the Cloze passage were 15 deletions of three types: 7 cohesive, 6 syntactic, and 2 vocabulary items. These rational deletions have been shown to have comparable reliability and validity to the fixed-ratio Cloze procedure (Bachman, 1985).

The subjects were instructed to read through the passage first and then to fill in the blanks with English words which they considered to be acceptable in the given context. They had 10 minutes to complete the Cloze test.

Three levels of proficiency were defined according to the subjects' scores out of 15: level 1 corresponds to a Cloze score of less than or equal to 8/15; level 2, a score greater than 8 and less than 12/15, and level 3, a score greater than or equal to 12/15.

Table 1 shows the results of the Cloze test:

Table 1: Classification of Subjects by Cloze Score

<u>Level</u>	<u>Grade</u>		
	<u>7</u>	<u>9</u>	<u>11</u>
Exp-M:1	2	4	2
Exp-M:2	3	2	5
Exp-M:3	1	2	2
Cont-E:1	3	-	-
Cont-E:2	9	-	-
Cont-E:3	8	-	-

The fact that there was variation in the control group seems odd. One would expect most of the students at this age to be classified as level 3 in the Cloze. However, for the three students who were classified as level 1, the scores were 8/15, 7/15 and 8/15. Thus, these students are borderline level 2. For the level 2 students, the average score was 10.3. This variation in the control group may be due to lack of motivation on the part of some of the students to complete the test to the best of their ability.

5.3.2 Acceptability Judgement Task

The Acceptability Judgement Test (see Appendix B) was administered on the same day as the Cloze test. Each subject was given a type-written copy of 87 English sentences along with instructions and a three-point judgement scale for each sentence. The instructions as well as the test sentences were recorded on a cassette tape and played to the subjects. Their task was to uncover each of the sentences as they heard it being read on the tape. Then using a scale on the right hand side of the page, their task was to put a check mark closest to the A (acceptable) if the sentence sounded okay. If the sentence did not sound okay, they were instructed to make a check mark closest to the Not A (not acceptable). If they were unsure about a sentence, they were instructed to make a check mark in the middle of the judgement scale. Example sentences not containing the target structures were presented to ensure that the subjects understood the instructions before testing began.

In order to ensure that subjects did not have time to reconsider their responses once a judgement was made, they were allowed only a time interval of 4 seconds between each sentence to make their decision.

5.3.3 Sentence Completion Task

The sentence completion task (see Appendix C) was administered 2 days after the Cloze test and the Acceptability Judgement task. Each subject was given a type-written copy of 37 incomplete English sentences. Their task was to complete each of the sentences using words provided in the right hand margin. These words included verbs, animate and inanimate NP's, and particles. The dative verbs and verb-particle structures for the sentence completion task were the same ones used in the Acceptability Judgement Task. The subjects were permitted to add other words, but were instructed to ensure that all of the words in the right margin were used.

For example, the acceptability of the verb-particle construction was tested using the following sentence completion task:

(1) Susan _____

sandwiches
brought
out

The acceptability of the dative alternation was tested using the following sentence completion task:

(2) Susan _____

brought
Mary
sandwiches

The acceptability of the interaction of verb-particle constructions and the dative alternation was tested using the following sentence completion task:

(3) Susan _____

out
Mary
sandwiches
brought

As was the case with the Acceptability Judgement Task, distractor sentences were used in the Sentence Completion task. The order of the words in each task was randomized as were the various sentence types and the distractor sentences. Also, the subjects were given a practice sentence at the beginning of the Sentence Completion Task which did not contain the target structures to ensure they understood the instructions before testing began.

There was no time limit for this task, however, most subjects finished it within 30 minutes.

5.4 Test Sentences and their Classification

The sentences of the acceptability judgement task and the sentence completion task are classified into thirteen types. The test sentences (Types 1-10) contain to-dative verbs which optionally permit the dative alternation. The dative verbs that were tested are pass, give, hand, bring, send, and sell. The same dative verbs are used in sentences containing verb-particle combinations: pass back, give back, hand out, bring out, send off, and sell off.

The following is a detailed description of each sentence type including the syntactic structure and one example of each.

Type 1: contains a dative verb + particle construction in which the particle is contiguous to the verb; [V-Prt-NP]:

(4) John gave back the book

Type 2: contains a dative verb + particle construction in which the particle is not contiguous to the verb; [V-NP-Prt]:

(5) John gave the book back

Type 3: contains a dative prepositional complement; [V-NP-PP]:

(6) John gave the book to Mary

Type 4: contains a double-object construction; [V-NP-NP]:

(7) John gave Mary the book

Type 5: contains a dative verb-particle and a dative prepositional complement;
the particle is contiguous to the verb; [V-Prt-NP-PP]:

(8) John gave back the book to Mary

Type 6: contains a dative verb-particle and a dative prepositional complement;
the particle appears between the object NP and the dative PP;
[V-NP-Prt-PP]:

(9) John gave the book back to Mary

Type 7: contains a dative verb-particle and a double-object construction; the
particle is contiguous to the verb; [V-Prt-NP-NP]:

(10) John gave back Mary the book

Type 8: contains a dative verb-particle and a double-object construction; the particle appears between the two NP's; [V-NP-Prt-NP]:

(11) John gave Mary back the book

Type 9: contains a dative verb-particle and a double-object construction; the particle follows the double objects; [V-NP-NP-Prt]:

(12) John gave Mary the book back

Type 10: contains a dative verb-particle and a dative prepositional phrase; the particle follows the object NP and dative PP; [V-NP-PP-Prt]:

(13) John gave the book to Mary back

Type 11: contains non-alternating dative verbs. Type 11a sentences have the structure [V-NP-PP] as in (14), and type 11b sentences have the structure *[V-NP-NP], as in (15):

(14) John explained the answer to Mary

(15) John explained Mary the answer

Type 12: contains non-dative verb-particle constructions which may or may not allow movement of the particle. Type 12a and b verbs do not permit movement; they have the forms [V-Prt-NP] and *[V-NP-Prt] respectively as in:

(16) John pulled on the rope

(17) John pulled the rope on

Type 12c and d verbs permit movement of the particle and have the forms [V-Prt-NP] and [V-NP-Prt] respectively, as in:

(18) John looked up the number

(19) John looked the number up

Type 13: This category is made up of distractor sentences which do not contain dative structures or verb-particle combinations.

(20) Shirley never does the dishes

As indicated above, type 11 sentences contain dative verbs which do not permit the dative alternation. Three non-alternating verbs were tested: explain, describe, recommend.

Type 12 sentences contain verb + particle constructions which fall into two categories: those which do not undergo particle movement and those which do. For types 12a and b which do not permit particle movement, three exemplars were tested: walk up, pull on, and jump in. For types 12c and d which do permit particle movement, three exemplars were tested: look up, try on and kick in.

There are ten type 13, distractor sentences which do not contain the target structures being tested in this study.

5.5 Theoretical Predictions

With reference to the classification of sentence types described above, predictions about their acquisition can be made based on markedness and Case theory. It is predicted first of all that unmarked type 1 [V-Prt-NP] sentences will be more acceptable and will be produced more than marked type 2 [V-NP-Prt] sentences. This follows from the assumption that the V-Prt is a lexical unit that is learned as such, whereas [V-NP-Prt] is derived by a movement rule. Secondly, it is predicted that unmarked type 3 [V-NP-PP] sentences will be more acceptable and will be produced more in the sentence completion task than marked type 4 [V-NP-NP] sentences. This

follows from Case theory whereby Case assignment for the unmarked [NP PP] form of the dative follows directly from the theory whereas that for the marked form [NP NP] presents a problem concerning Case assignment of the second NP.

For those sentences types 5-10 involving the interaction of the dative alternation and the verb-particle construction, the prediction is that the least marked type 5 [V-Prt-NP-PP] sentences will be the most acceptable and will be produced more by the subjects than type 6 [V-NP-Prt-PP] sentences which in turn are more acceptable and produced more than types 7 and 8. Similarly, type 7 [V-Prt-NP-NP] sentences are predicted to be less acceptable and produced less than types 5 and 6 and more acceptable and produced more than type 8. Likewise, the most marked types 9 and 10 [V-NP-NP-I.t], [V-NP-PP-Prt] sentences which contain a sentence-final particle will be the least acceptable and will be produced the least in the sentence completion task. The grammatical status of type 9 is questionable, and type 10 is clearly ungrammatical.

FOOTNOTES

1. One of the main reasons for the decline of Micmac in this community is that there are very few people qualified to teach a full curriculum in Micmac.
2. See Appendix A.

CHAPTER 6

Results and Discussion

6.1 Data Analysis

The following is a description of how the data are coded and analyzed for this experiment. Based on the results of the Cloze test, both the control and the experimental subjects are divided into three groups according to the level of their proficiency in English. The levels are labelled Cont-E:1, Cont-E:2, Cont-E:3 (English control, levels 1, 2 and 3), Exp-M:1, Exp-M:2, and Exp-M:3 (Micmac experimental, levels 1, 2 and 3).

6.1.1 Categorization of Sentence Types for the Acceptability Judgement Task

A total of 88 sentences were used in the Acceptability Judgement Task¹; 60 sentences contain the target structures showing various dative verb and verb-particle combinations. To repeat, they include six verbs that permit the dative alternation: pass, give, sell, send, bring and hand, and six verb-particle constructions: pass back, give back, sell off, send off, bring out and hand out. The testing elicited data on both forms of the dative alternations and the same verbs were used to elicit data on the verb-particle movement. The testing also elicited data on three nonalternating dative verbs: explain, recommend and describe; both grammatical and nongrammatical forms

were tested. Data were also elicited on six nondative verb-particle constructions, three of which do not permit particle movement: walk up, pull on and jump in, and three of which do permit particle movement: look up, try on and kick in. All twelve types, both grammatical and ungrammatical were tested. As well, there were 10 distractor sentences included in the testing. As described in section 5.4, the test sentences are categorized as type 1 [V-Prt-NP], type 2 [V-NP-Prt], type 3 [V-NP-PP], type 4 [V-NP-NP], type 5 [V-Prt-NP-PP], type 6 [V-NP-Prt-PP], type 7 [V-Prt-NP-NP], type 8 [V-NP-Prt-NP], type 9 [V-NP-NP-Prt], and type 10 [V-NP-PP-Prt].

Three nonalternating dative verbs categorized as type 11 are tested, three of which are grammatical [V-NP-PP] (type 11a), and three of which are ungrammatical *[V-NP-NP] (type 11b).

Six non-dative verb-particle combinations are used in the acceptability judgement task: walk up, pull on, jump in, look up, try on, and kick in. The first three do not undergo particle movement and are categorized as either 12a whose structure is [V-Prt-NP] or 12b whose structure is *[V-NP-Prt]. The other three combinations optionally permit particle movement and are categorized as either type 12c whose structure is [V-Prt-NP] and type 12d whose structure is [V-NP-Prt].² There is a total of twelve type 12 sentences tested.

In the acceptability judgement task, each sentence is judged as being acceptable, unacceptable, or questionable. Sentences judged acceptable are assigned a value of 3; those judged unacceptable are given a value of 1, and sentences judged questionable

are assigned a value of 2. Where more than one or no judgement is made, the sentence is assigned a value of 0.

6.1.2 Categorization of Sentence Types for Sentence Completion Task

Twenty two experimental subjects and nineteen control subjects participated in the sentence completion task; one student from each group was absent when this test was administered. A total of 37 sentences are used in the sentence completion task¹; 18 test the dative alternation and verb-particle combinations, 3 test nonalternating dative verbs, 6 test non-dative verb-particle combinations and 10 are distractors. The same dative verb-particle combinations are tested in the sentence completion task as in the acceptability judgement task, namely: pass back, give back, sell off, send off, bring out and hand out. Similarly, the same nonalternating dative verbs explain, recommend and describe as well as the non-dative verb-particle combinations walk up, pull on, jump in, look up, try on and kick in used in the acceptability judgement task are also used in the sentence completion task.

The results for the sentence completion task are categorized according to the sentence type produced given the lexical items provided in each test sentence. Sentences 10, 13, 14, 15, 32 and 37 of the Sentence Completion Task were designed to elicit either type 1 [V-Prt-NP] or type 2 [V-NP-Prt] sentences; sentences 3, 6, 21, 30, 34 and 35 were designed to elicit either type 3 [V-NP-PP] or type 4 [V-NP-NP] sentences; and sentences 7, 8, 11, 18, 24 and 28 were designed to elicit type 5-10

sentences. Sentences 2, 12 and 36 were designed to elicit type 11 sentences; sentences 5, 9, 17, 22, 26 and 33 were designed to elicit type 12 sentences and finally sentences 1, 4, 16, 19, 20, 23, 25, 27, 29 and 31 were designed as distractor sentences.

6.2 Results

6.2.1 Acceptability Judgement Task

Table 2 shows the percentage and frequency (in brackets) of acceptable responses for the control group compared to the experimental group as a whole. Only the figures for the acceptable and unacceptable responses are provided; questionable responses, which are few in number, and the results of the distractor sentences are not included in this Table.

Overall ranking of the percentage of acceptability for the control and the experimental groups of sentence types 1-10 gives the following sequence from most acceptable (1) to least acceptable (10):

Table 2: PERCENTAGE AND (FREQUENCY) OF ACCEPTABLE RESPONSES FOR THE CONTROL GROUP VS. THE EXPERIMENTAL GROUP

Group:	Control		Experimental	
	Not Acc.	Acc.	Not Acc.	Acc.
<u>Sent. Type</u>				
Type 1	17.5 (21)	75.0 (90)	16.7 (23)	76.8 (106)
Type 2	29.2 (35)	60.0 (72)	29.7 (41)	60.1 (83)
Type 3	2.5 (3)	95.8 (115)	4.3 (6)	92.8 (128)
Type 4	5.8 (7)	86.7 (104)	11.6 (16)	85.5 (118)
Type 5	19.2 (23)	64.2 (77)	10.9 (15)	77.5 (107)
Type 6	15.8 (19)	73.3 (88)	20.3 (28)	65.9 (91)
Type 7	74.2 (89)	11.7 (14)	63.0 (87)	25.4 (35)
Type 8	55.0 (66)	30.0 (36)	61.6 (85)	31.9 (44)
Type 9	80.8 (97)	13.3 (16)	85.5 (118)	8.7 (12)
Type 10	91.7 (110)	2.5 (3)	98.6 (136)	0.7 (1)
Type 11a	6.7 (4)	90.0 (54)	5.8 (4)	87.0 (60)
b	73.3 (44)	15.0 (9)	30.4 (21)	59.4 (41)
Type 12a	3.3 (2)	95.0 (57)	5.8 (4)	88.4 (61)
b	96.7 (58)	3.3 (2)	95.7 (66)	2.9 (2)
c	11.7 (7)	81.7 (49)	13.0 (9)	78.3 (54)
d	36.7 (22)	41.7 (25)	33.3 (23)	55.1 (38)

<u>Ranking</u>	<u>Control</u>	<u>Experimental</u>
1	type 3	type 3
2	type 4	type 4
3	type 1	type 5
4	type 6	type 1
5	type 5	type 6
6	type 2	type 2
7	type 8	type 8
8	type 9	type 7
9	type 7	type 9
10 type 10	type 10	

Looking at the rankings for both groups, one can see that there are some similarities.

Both groups judge type 3, dative sentences:

- (5) John gave the book to Mary

whose structure is [V-NP-PP] to be the most acceptable. The second most acceptable sentence type is type 4:

- (6) John gave Mary the book

which contains the double-object version of the dative alternation. Type 1 sentences, which contain the contiguous [V-Prt] structure:

- (7) John gave back the book

are judged 3rd most acceptable by the control group and fourth most acceptable by the experimental group. Type 2 sentences, which contain the noncontiguous verb-particle structure:

(8) John gave the book back

are ranked sixth by both groups. For sentences which involve the interaction of the dative construction and the verb-particle combination, the control group judge type 6 sentences:

(9) John gave the book back to Mary

to be preferable to type 5 sentences, which were ranked fifth:

(10) John gave back the book to Mary

The second language group, on the other hand, showed a preference for type 5, which was ranked third, compared to type 6 which was ranked sixth. Both the control and the experimental group showed the same ranking, seventh, for sentence type 8:

(11) John gave Mary back the book

compared to type 7 which was ranked ninth by the control group and eighth by the experimental group:

(12) John gave back Mary the book

Type 9 sentences were ranked eight by the control group and ninth by the second language group:

(13) John gave Mary the book back

and type 10 sentences were ranked last by both groups:

(14) John gave the book to Mary back

Ranking the percentage of unacceptability for both groups of sentence types 1-10, gives the following sequence from most unacceptable (1) to least unacceptable (10):

<u>Ranking</u>	<u>Control</u>	<u>Experimental</u>
1	type 10	type 10
2	type 9	type 9
3	type 7	type 7
4	type 8	type 8
5	type 2	type 2
6	type 5	type 6
7	type 1	type 1
8	type 6	type 4
9	type 4	type 5
10	type 3	type 3

The rankings of unacceptability are almost identical for both the control and the experimental groups. It should be noted that the least preferred sentence types 9 and 10 contain a sentence final particle, and the next two least preferred sentence types, 7 and 8 contain the marked double-object structure. The 1st, 2nd, 3rd and 4th rankings are exactly the same. Again, marked type 2 sentences which contain a noncontiguous verb-particle structure are judged to be more unacceptable than unmarked type 1 sentences, where the particle is contiguous to the verb. The same holds for types 3 and 4; type 4, which contains the double-object construction, is marked, and for both the control and experimental groups, is more unacceptable than type 3 sentences which contain the unmarked dative prepositional phrase. The main difference between the groups is that the control group judges type 5 sentences containing the contiguous verb-particle and unmarked dative prepositional phrase to be 6th least unacceptable, compared to the experimental group who judge type 5 to be 9th least acceptable.

The results of the rankings for Table 2 support the markedness predictions made in Section 5.5. The unmarked type 1 sentences (see example 7) were judged acceptable by a greater number of subjects than the marked type 2 sentences (see example 8). Likewise, the unmarked type 3 (see example 5) sentences were judged acceptable by more subjects than the marked type 4 (see example 6) sentences. The rankings also support markedness claims about sentence types involving the interaction of the dative alternation and the verb-particle construction. The experimental group judged the most unmarked type 5 (see example 10) sentences to be the most acceptable and the most marked type 10 sentences (see example 14) to be the least acceptable. The control group, on the other hand, judged type 6 (see example 9) sentences to be judged acceptable by more subjects than type 5. That is, the control group shows a preference for particle movement when it is allowed as the same judgements obtain for type 8 sentences compared to type 7. Levels 1 and 2 of the experimental group similarly show a slightly higher preference for the noncontiguous forms for type 8 over the contiguous verb-particle with type 7; however, the preference is the same in group 3.

Table 2 reveals that the experimental and control groups correctly judged type 11a sentences as acceptable; 90% for the control group and 87% for the experimental group. For the judgements of 11b sentences, the control group correctly judged them unacceptable, 73.3% whereas the experimental group was unsure of the acceptability of these ungrammatical sentences; 30.4% judged them unacceptable and 59.4% judged them acceptable.

The judgements for type 12 sentences are as expected. Both groups overwhelmingly judged grammatical 12a sentences to be acceptable and ungrammatical 12b sentences to be unacceptable. For types 12c and d which are both grammatical in English, both groups showed a preference for 12c sentences which contain a contiguous verb-particle construction.

Tables 3 and 4 show the frequency and percentage of acceptable responses respectively of the control and experimental subjects who are grouped according to their proficiency levels. Questionable responses and those which are assigned a value of 0 (that is, where no response or more than one response is supplied) are included in Tables 3 and 4. The columns represent the proficiency levels and the assigned values for each response in the task whereas the rows represent sentence types.

Sentence types 1 and 2, which involve particle movement and dative verbs, are found to be acceptable by the majority of the experimental subjects. For type 1, 77% of the responses for the three experimental levels are acceptable; that is, 37/48 for level 1, 46/60 for level 2 and 23/30 for level 3. The percentage drops for type 2 sentences for the experimental groups with a lower percentage of acceptability for the beginner group compared to the intermediate and more advanced groups: 54%, 63% and 63% or 26/48, 38/60 and 19/30 respectively. The results from each level of the control group are similar: for type 1 sentences the percentage of acceptable responses is relatively high for all three levels: 66%, 74% and 79% (12/18, 40/54, 38/48). There is a slight drop in percentage for the type 2 sentences for levels 2 and 3: 63% and 52% (34/54, 25/48). However, for the level 1 control group, which has

Table 3: FREQUENCY OF ACCEPTABLE RESPONSES - ACCEPTABILITY JUDGEMENT TASK

Group	Cont-E:1 n = 3				Cont-E:2 n = 9				Cont-E:3 n = 8				Exp-M:1 n = 8				Exp-M:2 n = 10				Exp-M:3 n = 5			
Response	0	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3
<u>S. Type</u>																								
Type 1	1	3	2	12	0	12	2	40	1	6	3	38	0	9	2	37	0	10	4	46	0	4	3	23
Type 2	1	4	0	13	0	14	6	34	0	17	6	25	0	17	5	26	0	18	4	38	0	6	5	19
Type 3	0	0	0	18	0	2	2	50	0	1	0	47	0	4	2	42	1	2	1	56	0	0	0	30
Type 4	0	0	0	18	0	4	4	46	0	3	5	40	0	7	1	40	0	8	2	50	0	1	1	28
Type 5	0	4	1	13	0	9	4	41	0	10	15	23	0	7	5	36	1	7	6	46	1	1	3	25
Type 6	1	5	0	12	0	9	5	40	0	5	7	36	0	13	8	27	0	13	9	38	0	2	2	26
Type 7	0	12	1	5	2	37	9	6	0	40	5	3	0	31	5	12	0	39	9	12	0	17	2	11
Type 8	0	8	1	9	0	31	7	16	0	27	10	11	0	30	0	18	0	40	5	15	0	15	4	11
Type 9	0	15	1	2	0	44	3	7	0	38	3	7	0	42	2	4	0	53	3	4	1	23	2	4
Type 10	0	18	0	0	0	50	3	1	0	42	4	2	0	46	1	1	0	60	0	0	0	30	0	0
Type 11a	1	0	0	8	0	3	1	23	0	1	0	23	0	2	1	21	1	2	3	24	0	0	0	15
Type 11b	0	4	3	2	0	18	4	5	0	22	0	2	0	6	3	15	0	10	4	16	0	5	0	10
Type 12a	0	0	0	9	0	1	0	26	1	1	0	22	0	4	1	19	1	0	2	27	0	0	0	15
Type 12b	0	8	0	1	0	26	0	1	0	24	0	0	0	23	0	1	0	28	1	1	0	15	0	0
Type 12c	0	0	0	9	0	4	2	21	0	3	2	19	0	5	2	17	0	4	2	24	0	0	2	13
Type 12d	2	4	0	3	0	9	3	15	0	9	8	7	0	8	3	13	1	13	3	13	0	2	1	12
Type 13	1	2	0	27	1	9	7	73	0	4	5	71	0	8	6	66	0	6	7	87	0	1	0	49

Table 4: PERCENTAGE OF ACCEPTABLE RESPONSES - ACCEPTABILITY JUDGEMENT TASK

Group	Cont-E:1 n = 3			Cont-E:2 n = 9			Cont-E:3 n = 8			Exp-M:1 n = 8			Exp-M:2 n = 10			Exp-M:3 n = 5									
Response	C	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3					
S_Type																									
Type 1	6	17	11	66	0	22	4	74	2	13	6	79	0	19	4	77	0	17	7	77	0	13	10	77	
Type 2	6	22	0	72	0	26	11	63	0	35	13	52	0	36	10	54	0	30	7	63	0	20	17	63	
Type 3	0	0	0	100	0	4	4	92	0	2	0	98	0	8	4	88	2	3	2	93	0	0	0	100	
Type 4	0	0	0	100	0	7	7	86	0	6	10	83	0	15	2	83	0	13	3	84	0	3	3	94	
Type 5	0	22	6	72	0	17	7	76	0	21	31	48	0	15	10	75	2	11	10	77	3	3	10	84	
Type 6	6	28	0	66	0	17	9	74	0	10	15	75	0	27	17	56	0	22	15	63	0	7	7	86	
Type 7	0	66	6	28	4	68	17	11	0	84	10	6	0	65	10	25	0	65	15	20	0	56	7	37	
Type 8	0	44	6	50	0	57	13	30	0	56	21	23	0	63	0	37	0	67	8	25	0	50	13	37	
Type 9	0	83	6	11	0	81	6	13	0	79	6	15	0	88	4	8	0	88	5	7	3	77	7	13	
Type 10	0	100	0	0	0	92	6	2	0	88	8	4	0	96	2	2	0	100	0	0	0	100	0	0	0
Type 11a	1	0	0	89	0	11	4	85	0	4	0	96	0	8	4	88	3	7	10	80	0	0	0	100	
Type 11b	0	45	31	22	0	67	15	18	0	92	0	8	0	25	13	62	0	33	13	54	0	33	0	67	
Type 12a	0	0	0	100	0	4	3	96	4	4	0	92	0	17	4	79	3	0	7	90	0	0	0	100	
Type 12b	0	89	0	11	0	96	7	76	4	100	0	0	0	0	96	4	0	94	3	3	0	100	0	0	
Type 12c	0	0	0	100	0	15	7	76	0	13	8	79	0	21	8	71	0	13	7	80	0	0	13	87	
Type 12d	22	45	0	33	0	33	11	56	0	38	33	29	0	33	13	54	4	43	10	43	0	13	7	80	
Type 13	3	7	0	90	1	10	3	81	0	5	6	89	0	10	7	83	0	6	7	87	0	2	0	98	

only three subjects, the percentage of acceptable responses rises from 66% to 72%. These results suggest that the majority of subjects in this study find type 1 sentences to be more acceptable than type 2 sentences.

Type 3 sentences, which involve the prepositional dative structures, are judged acceptable by all experimental levels: 88%, 93% and 100% for levels 1, 2 and 3 respectively of the control group and 100%, 92% and 98% for the experimental group. For type 4 sentences, which involve the double-object construction, the percentage of acceptable responses is again lower than those of type 3 sentences: 83%, 84%, and 94% for the control group and 100%, 86% and 83% for the experimental group. These results show a somewhat higher level of acceptability for the unmarked dative structure compared to the marked one.

For those sentence types which involve the interaction of the dative alternation and verb-particle construction, the results are as follow: more subjects in level 1 of the control group judged type 5 sentences acceptable than type 6; the judgements remain about the same for level 2, but level 3 shows a clear preference for type 6. In the experimental group, levels 1 and 2 show a preference for type 5, but level 3 shows approximately the same preference for both types 5 and 6. In general, the control group prefers to move the particle in the unmarked dative whereas the experimental group prefers it contiguous to the verb. As is predicted by markedness theory, the percentage of acceptable responses for types 5 and 6 is much higher than those for types 7 and 8.

Again, as was seen in Table 2, the acceptability judgements of types 7 and 8 are somewhat problematical. The experimental group levels 1 and 2 show an increased percentage of acceptability for the more marked type 8, but this levels off for the more advanced level 3 subjects. All three levels of the control groups show a clear preference for the noncontiguous particle construction.

The responses for types 9 and 10 in which the particle is in the final position are as predicted by markedness theory. The results show the doubtful grammatical status of type 9 and the ungrammatical status of type 10. More subjects in both groups judged type 9 sentences to be preferred over type 10 which were judged overwhelmingly unacceptable.

Looking at the percentages of acceptable responses for both groups of sentences types 5-10 one can see a general continuum of acceptability from most acceptable for type 5 (with two exceptions) to least acceptable for type 10. These results are as predicted by markedness.

Upon closer examination, there appears to be a general pattern of preference with sentences containing the interaction of the dative and verb-particle constructions. Types 5 and 6 are judged the most acceptable followed by types 7 and 8, and finally, types 9 and 10 which are the least acceptable. If we look at the structures within each sentence type, we find an interesting pattern as noted above. Types 5 and 6 both contain the prepositional dative complement and the verb-particle construction; types 7 and 8 both contain the double-object construction as well as the verb-particle construction. Types 9 and 10 contain a dative construction and a sentence-final

particle. As stated earlier, this pattern of acceptance is accounted for quite well within a markedness theory. Within each of the sentence type pairs 5-6 and 7-8, the higher acceptability of one type as opposed to the other depends also on the position of the particle in the sentence. Type 5 has the particle contiguous to the verb which is assumed to be the unmarked case and is preferred over type 6 in which the particle is separated from the verb and is assumed to be the marked case. Type 7 has a contiguous particle, in type 8 it is separated. For types 9 and 10, there is a sentence-final particle which occupies a position furthest away from the verb.

In types 5 and 6, the control group prefers the more marked noncontiguous verb-particle structures compared to the experimental group. This preference is proportionately higher in types 7 and 8 that involve the marked datives and is especially robust for group 3 as shown in Table 4; with the exception of level 3, the experimental group also shows a slightly higher preference for type 8 sentences which contain a noncontiguous particle and a marked dative structure. This patterning reflects a developmental sequence in the experimental group that mirrors the preference shown in the control group.

Looking at types 11a and b, which contain nonalternating dative verbs, we find interesting results for the experimental group. 11a sentences are grammatical in English, whereas 11b sentences are not. However, the experimental groups show a very high percentage of acceptability for the ungrammatical 11b sentences. It would appear that the experimental subjects are overgeneralizing the double-object construction to verbs which do not alternate. They seem not to have mastered the

morphological and semantic constraints proposed by Mazurkewich and White (1984). It would be interesting to investigate whether or not, for instance, influence from Micmac may be affecting the results of acceptability obtained in these sentences. This is a question that will require further research but is an intriguing one. The results for the control group are as expected; 11a sentences are judged acceptable and 11b sentences are judged unacceptable, although to a lesser degree by levels 1 and 2 which suggests that the control group may be overgeneralizing the double-object construction as well.

Type 12 sentences are divided into two categories: verb-particle combinations which do not undergo particle movement (12a, b), for example,

(15) John pulled on the rope (12a)

*John pulled the rope on (12b)

and those which do undergo movement, (12c, d), for example,

(16) John looked up the number (12c)

John looked the number up (12d)

For the grammatical type 12a sentences, the experimental groups show a developmental increase of acceptability ranging from 79% for level 1 to 90% and 100% for levels 2 and 3 respectively. 12b sentences are judged overwhelmingly unacceptable by all three levels of the experimental group: 96%, 94% and 100%.

In general, all three levels of the control group judge 12a sentences acceptable, and 12b sentences unacceptable.

In 12c sentences the particle is contiguous to the verb and is noncontiguous in 12d sentences. 12c sentences elicited a developmental increase of acceptability in the experimental group that ranges from 71% to 87%. The judgements for the 12d sentences show a lower percentage of acceptability compared to 12c sentences. The results for the control group for types 12c and d show that all three levels judge 12c sentences acceptable (100%, 78%, 79%); however, the acceptability judgements for type 12d sentences are very low (33%, 56%, 29%). One may recall that the overall ranking by both the control and experimental groups of sentence types revealed a relatively low ranking (6th) for type 2 sentences, which involve particle movement. This is rather surprising as in the sentence types that involve both verb-particle and dative structures, there is an increasing trend towards noncontiguous verb-particle structures. This finding clearly warrants further research.

The results for the distractor sentences are clear. All levels of both groups judged these grammatical English sentences as acceptable. The average percentage of acceptable response for the control group was 86.7% and for the experimental group, 89.3%.

Table 5 shows the mean acceptability scores for each proficiency level of both groups. The scores for each level were calculated using the formula:

$$\frac{x + 2y + 3z}{\text{total number of responses}}$$

where x = the frequency of unacceptable responses, y = the frequency of questionable responses, and z = the frequency of acceptable responses⁴. The means have been rounded to one place after the decimal, and they represent each group's average level of acceptability for each sentence type. Two-tailed t-tests were carried out on the data to compare the means of pairs of sentence types, for example, types 1 and 2; types 3 and 4, etc. In this way, it can be determined whether type 1 sentences are judged acceptable by significantly more subjects than type 2; type 3 significantly more than type 4, types 5 and 6 significantly more than types 7 and 8 which are judged acceptable by significantly more subjects than types 9 and 10; type 11a significantly more than type 11b; type 12a significantly more than 12b; and whether there is a significant difference of acceptability of types 12c and d which are both acceptable in English.

For the experimental group, the mean acceptability score of type 1 sentences for all three levels is 2.6. For type 2 sentences, the scores are 2.2, 2.3 and 2.4 for levels 1, 2 and 3 respectively; they are lower than those of type 1. The difference between the means for types 1 and 2 are significant at 0.05 for level 2 subjects ($p=.033$). The p-value for level 1 is .097, which is not significant, and for level 3, .477, which is also not significant. The control group has mean acceptability scores of 2.4, 2.5 and 2.6 for type 1 sentences, which is similar to the means of the experimental subjects. For type 2 sentences, the scores are 2.4, 2.4 and 2.2, again,

Table 5: MEAN ACCEPTABILITY SCORES - ACCEPTABILITY JUDGEMENT TASK

Group	Cont-E:1 n = 3	Cont-E:2 n = 9	Cont-E:3 n = 8	Exp-M:1 n = 8	Exp-M:2 n = 10	Exp-M:3 n = 5
<u>S. Type</u>						
Type 1	2.4	2.5	2.6	2.6	2.6	2.6
Type 2	2.4	2.4	2.2	2.2	2.3	2.4
Type 3	3.0	2.9	2.9	2.8	2.9	3.0
Type 4	3.0	2.8	2.8	2.7	2.7	2.9
Type 5	2.5	2.6	2.3	2.6	2.6	2.7
Type 6	2.3	2.6	2.6	2.3	2.4	2.8
Type 7	1.6	1.4	1.2	1.6	1.6	1.8
Type 8	2.1	1.7	1.7	1.8	1.6	1.9
Type 9	1.3	1.3	1.4	1.2	1.2	1.3
Type 10	1.0	1.1	1.2	1.1	1.0	1.0
Type 11a	2.7	2.7	2.9	2.8	2.7	3.0
b	1.8	1.5	1.2	2.4	2.2	2.3
Type 12a	3.0	2.9	2.8	2.6	2.8	3.0
b	1.2	1.1	1.0	1.1	1.1	1.0
c	3.0	2.6	2.7	2.5	2.7	2.9
d	1.4	2.2	1.9	2.2	1.9	2.7
Type 13	2.8	2.7	2.8	2.7	2.8	3.0

slightly lower than those scores for type 1. There is a significant difference ($p=.012$) between the mean scores for level 3 subjects. Levels 1 and 2 have no significant difference ($p= 1.0$, $p=.338$) between the mean acceptability scores of types 1 and 2.

The mean scores for type 3 for the experimental group are all very high: 2.8, 2.9 and 3.0. For type 4, the scores are somewhat lower: 2.7, 2.7 and 2.9; however, the p-values are non-significant: .420, .237 and .374 respectively. The control group has high scores for type 3 sentences as well: 3.0, 2.9, 2.9. For type 4, the scores are 3.0, 2.8, and 2.8. The only significant difference is between the means for level 2 subjects ($p=.022$) which is significant at 0.05. Level 1 and level 3 subjects do not show a significant difference in their judgements of type 3 and 4 sentences. Again, these p-values point to the conclusion that the experimental subjects have mastered the dative alternation used in sentence types 3 and 4.

In analyzing the results for types 5 to 10, a comparison of mean acceptability scores was carried out for every possible combination of sentence type. For example, the mean for type 5 sentences are compared with the mean for type 6 to 10 sentences; the mean for type 6 sentences are compared with those for types 5 and 7 to 10; the mean for type 7 sentences are compared to the mean for types 5-6 and 8-10; the mean for type 8 sentences are compared to those for types 5-7 and 9-10; the mean for type 9 sentences are compared to those for types 5-8 and type 10; and finally the mean for type 10 sentences are compared to those for types 5-9.

A significant difference emerges ($p=.040$) between the mean scores of type 5 (2.6) and type 6 (2.3) sentences for level 1 of the experimental group. There is no significant difference for the other levels of the experimental group. For the control group, the only significant difference ($p=.007$) is between the means for level 3: 2.3, 2.6. Two out of three of the levels in both groups do not show a significant difference in their judgements of types 5 and 6. These types are judged to be equally acceptable by most of the subjects in this study.

In the comparison between types 5 and 7, the differences in the means for each level of the experimental group are highly significant ($p=.000$, $p=.000$, $p=.019$). For the control group, the differences are significant for levels 2 and 3 ($p=.000$ for both groups). Level 1 subjects do not show a significant difference despite the fact that the mean scores are 2.5 and 1.6 for types 5 and 7 respectively. This is probably due to the low number of subjects in level 1.

In general, the comparison between types 5 and 8 gives the same results; there is a highly significant difference (p approaching .000) between all levels of both groups, except level 1 of the control group. The differences between types 5 and 9 and 5 and 10 are also found to be highly significant for both groups (p -values approaching .000 in all cases).

The results for the differences in the means between types 6 and 7, 6 and 8, 6 and 9, and 6 and 10 are highly significant, with the p -values approaching zero. The means for type 6 are all approximately 2.5, whereas those for types 7, 8, 9 and 10 are all approximately 1.5. The only comparison which does not produce a significant

difference is between types 6 and 8 for level 1 of the control group. The means are 2.3 and 2.1, and the p-value is .383.

For type 7, the experimental group levels have means of 1.6, 1.6 and 1.8; for type 8 the means are 1.8, 1.6 and 1.9, slightly higher than those for type 7. The p-values for the comparisons between these means are .436, .808 and .757, which are not significant at .05. Thus, neither type 7 nor type 8 is judged acceptable by significantly more experimental subjects. On the other hand, the means for the control group are 1.6, 1.4 and 1.2 for type 7 and 2.1, 1.7 and 1.7 for type 8. Again, the means for type 8 are slightly higher for all three groups. The p-values for the comparisons between these means are .270, for level 1, which is not significant; .033 for level 2 and 0.013 for level 3, both of which are significant at .05.

For the comparison between types 7 and 9, there is no significant difference between the means for levels 2 and 3 of the experimental group. The p-values are .107 and .107 respectively. For level 1, there is a significant difference. The means are 1.6 and 1.2, and the p-value is .031. None of the levels of the control group show a significant difference in their mean acceptability scores. The p-values are .423, .695 and .222.

For the comparison between types 7 and 10, there is a highly significant difference between the mean scores for the experimental levels: $p = .005, .008, .033$. For the control groups, the p-values are .053, .077 and .549 which are not significant at 0.05. However, the values for levels 1 and 2 are significant at 0.1.

The comparisons between 8 and 9 and 8 and 10 reveal highly significant differences (p -values approaching .000 in most cases) between the means for both groups.

For the comparison between the means for types 9 and 10, the means of both groups are all very close to 1.0. However, there is a significant difference between the means for all levels of the experimental group: $p = .041, .012, .037$. Only level 2 of the control group had a significant difference ($p = .029$).

The results of the t -test comparisons for types 5-10 support the hypothesis that in general, types 5 and 6 are judged acceptable by more subjects than types 7 and 8, which in turn are acceptable to more subjects than types 9 and 10. The results show that in general, there was no difference in subjects' judgements of types 5 and 6, although the mean scores for type 5 are slightly higher than those for type 6. In the comparisons for types 7 and 8, the experimental group does not judge these types significantly differently; however two out of three of the control group levels do. More subjects in control group levels 2 and 3 judge type 8 to be acceptable over type 7. In the comparison between types 9 and 10, all of the experimental group and level 2 of the control group judge these types to be significantly different, type 9 being judged acceptable by more subjects than type 10.

Based on the results of the acceptability judgement task, pairs of sentence types such as 5 & 6, 7 & 8, 9 & 10 will be referred to as being compatible with each other. Pairs such as 5 & 7, 5 & 8, 5 & 9, etc., which are judged to be significantly different by the subjects of this study will be referred to as non-compatible pairs.

With respect to the comparisons between non-compatible sentence types (eg. type 5 and type 9 or type 8 and type 10), the results show highly significant differences in sentence type acceptability, except between type 7 and type 9. This, along with the mean scores themselves, indicates that the more subjects do find types 5 and 6 which contain a verb-particle construction and the prepositional dative to be acceptable over types 7 and 8 which contain a verb-particle construction and the double-object dative, which judged acceptable by more subjects than types 9 and 10 which contain a dative structure and a sentence-final particle. Although sentence final particles are acceptable in derivations involving a direct object, as type 12d sentences illustrate, they are not grammatical in sentences whose derivations involve direct objects and dative structures. These results suggest that the L2 learners have mastered the constraints on particle movement in derivations that involve dative constructions.

Because type 11a sentences are grammatical in English and 11b sentences are not, one would expect to see a highly significant difference between the mean scores. For the experimental groups, only level 2 shows a significant difference ($p = .01$); levels 1 and 3 do not. This suggests that the experimental subjects have not fully mastered the constraints that apply to the dative alternation in English. Levels 2 and 3 of the control group have the same p-value of .000, which is highly significant and indicates that they have mastered the alternation. The nonsignificant scores of types 11a and b for level 1 may be due to the low number of subjects in this level.

As expected, all levels of both groups have highly significant differences between the means of type 12a, which is grammatical in English, and type 12b, which is ungrammatical. For types 12c and d, which are both grammatical, there is a significant difference ($p = .009$) for level 2 of the experiential group, and no significant difference for levels 1 and 3. For the control group, there is a significant difference for level 3 ($p = .005$), and none for levels 1 and 2.

6.2.2 Sentence Completion Task

Tables 6 and 7 show the overall frequency and percentage of each sentence type supplied for the sentence completion task. For sentence types 1 and 2 both groups produced more type 1 sentences than type 2. For level 1 of the control group, 14/18 or 77.8% of the sentences supplied were type 1 and only 3/18 or 16.7% were type 2. Similarly for level 2, 41/54 or 75.9% were type 1 and 12/54 or 22.2% were type 2; for level 3: 27/42 or 64.3% were type 1 and 15/42 or 35.7% were type 2. For the experiential group the results for type 1 and 2 are as follows: for level 1: 30/48 or 62.5% were type 1 and 17/48 or 35.4% were type 2; level 2: 30/54 or 55.6% were type 1 and 23/54 or 42.6% are type 2; level 3: 20/30 or 66.7% are type 1 and 10/30 or 33.3% are type 2. Overall, levels 1 and 2 of the control group produced a greater proportion of type 1 sentences than the experiential group who produced a greater proportion of type 2 sentences, but level 3 of both groups produced approximately the same proportion.

Table 6: OVERALL FREQUENCY OF EACH SENTENCE TYPE SUPPLIED - SENTENCE COMPLETION TASK

Group	Cont-E:1 n = 3	Cont-E:2 n = 9	Cont-E:3 n = 7	Exp-M:1 n = 8	Exp-M:2 n = 9	Exp-M:3 n = 5
<u>S. Type</u>						
Type 1	14	41	27	30	30	20
Type 2	3	12	15	17	23	10
Type 3	10	27	20	37	43	22
Type 4	7	27	21	10	6	8
Type 5	4	20	13	24	21	16
Type 6	12	27	24	20	30	13
Type 7	1	0	0	0	0	0
Type 8	1	2	2	0	0	1
Type 9	0	0	0	0	0	0
Type 10	0	0	0	0	0	0
Type 11a	7	24	20	20	24	12
b	0	1	0	0	1	3
Type 12a	8	27	20	24	26	15
b	1	0	0	0	1	0
c	8	19	12	17	19	10
d	1	7	8	6	8	5

Table 7: OVERALL PERCENTAGE OF EACH SENTENCE TYPE SUPPLIED - SENTENCE COMPLETION TASK

Group	Cont-E:1 n = 3	Cont-E:2 n = 9	Cont-E:3 n = 7	Exp-M:1 n = 8	Exp-M:2 n = 9	Exp-M:3 n = 5
<u>S. Type</u>						
Type 1	77.8	75.9	64.3	62.5	55.6	66.7
Type 2	16.7	22.2	35.7	35.4	42.6	33.3
Type 3	55.6	50.0	47.6	77.1	79.6	73.3
Type 4	38.9	50.0	50.0	20.8	11.1	26.7
Type 5	22.2	37.0	30.0	50.0	38.9	53.3
Type 6	66.7	50.0	57.1	41.7	55.6	43.3
Type 7	5.6	0.0	0.0	0.0	0.0	0.0
Type 8	5.6	3.7	4.8	0.0	0.0	3.3
Type 9	0.0	0.0	0.0	0.0	0.0	0.0
Type 10	0.0	0.0	0.0	0.0	0.0	0.0
Type 11a	77.8	88.9	95.2	83.3	88.9	80.0
b	0.0	3.7	0.0	0.0	3.7	20.0
Type 12a	88.9	100.0	95.2	100.0	96.3	100.0
b	11.1	0.0	0.0	0.0	3.7	0.0
c	88.9	70.4	57.1	70.8	70.4	66.7
d	11.1	25.9	38.1	25.0	29.6	33.3

For types 3 and 4, the control group produced approximately equal numbers of both types; 55.6% type 3 and 38.9% type 4 for level 1; level 2: 50% type 3 and 50% type 4 sentences; level 3: 47.6% type 3 and 50% type 4. The experimental group, on the other hand, produced a much larger proportion of type 3 sentences than type 4; for level 1: 77.1% were type 3 and only 20.8% were type 4; level 2: 79.6% were level 3 and only 11.1% were type 4; finally for level 3, 73.3% were type 3 and 26.7% were type 4.

For those sentence types involving the interaction of both constructions, it is clear that types 5 and 6 are preferred in production, especially for the experimental group in which there is only one type 8 supplied and no type 7. As well there were no types 9 or 10 produced. In comparing the production of types 5 and 6 for the control group, one can see that there is a greater proportion of type 6 sentences supplied than type 5; for level 1: 22.2% are type 5 and 66.7% are type 6; level 2: 37% type 5 and 50% type 6; level 3: 30% type 5 and 57.1% type 6. The results for the experimental group are mixed. Levels 1 and 3 produce more type 5 sentences than type 6; 50% type 5 and 41.7% type 6 for level 1 and 53.3% type 5 and 43.3% type 6 for level 3. Level 2 subjects supply more type 6 (55.6%) sentences than type 5 (38.9%). The control group supplied a greater number of the more marked type 7 and 8 sentences than the experimental group did. Neither group produced type 9 and type 10 sentences.

The results for the nonalternating dative type 11a and b sentences are as expected for the control group. There was only one example of an ungrammatical 11b sentence produced by a level 2 subject; all of the other sentences produced were grammatical type 11a sentences. For the experimental group there were four type 11b sentences produced by subjects in levels 2 and 3. Given the results of the acceptability judgement task in which it was found that the experimental subjects were overgeneralizing the double-object construction to verbs which do not alternate, these results are as expected. The experimental subjects are overgeneralizing in production as well.

The results of the non-dative verb-particle constructions are as follows: there was one example of an ungrammatical type 12b sentence supplied by a level 1 control subject and one by a level 2 experimental subject. All of the other sentences produced were the grammatical type 12a sentences. These may be performance errors. As for the 12c and d sentences in which either form is grammatical, subjects produced more 12c sentences where the particle is contiguous to the verb than 12d sentences where the particle is separated.

Table 8 and Table 9 show the frequency and percentage of sentence types 1 and 2, respectively, as supplied in the sentence completion task. For level 1 of the experimental group, 30 sentences out of a total of 48, or 62.5% type 1 ([V-Prt-NP]) were produced. Only 17/48 (35.4%) of the sentences supplied are type 2, [V-NP-Prt]. For level 2, 30/54 or 55.6% of the subjects supply type 1 sentences, and 23/54

Table 8: FREQUENCY OF TYPES 1 & 2 - SENTENCE COMPLETION TASK

Group	Cont-E:1			Cont-E:2			Cont-E:3			Exp-M:1			Exp-M:2			Exp-M:3		
	n = 3			n = 9			n = 7			n = 8			n = 9			n = 5		
Response	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2
<u>Sent. #</u>																		
10	0	3	0	0	5	4	0	3	4	0	4	4	0	2	7	0	3	2
13	1	2	0	0	8	1	0	4	3	0	5	3	0	7	2	0	3	2
14	0	2	1	0	4	5	0	3	4	0	4	4	0	3	6	0	2	3
15	0	2	1	0	8	1	0	4	3	0	5	3	0	4	5	0	3	2
32	0	3	0	1	8	0	0	7	0	0	7	1	0	8	1	0	5	0
37	0	2	1	0	8	1	0	6	1	1	5	2	1	6	2	0	4	1

Table 9: PERCENTAGE OF TYPES 1 & 2 - SENTENCE COMPLETION TASK

Group	Cont-E:1			Cont-E:2			Cont-E:3			Exp-M:1			Exp-M:2			Exp-M:3		
	n = 3			n = 9			n = 7			n = 8			n = 9			n = 5		
Response	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2
<u>Sent. #</u>																		
10	0	100	0	0	56	44	0	43	57	0	50	50	0	22	78	0	60	40
13	33	67	0	0	89	11	0	57	43	0	62	38	0	78	22	0	60	40
14	0	67	33	0	44	56	0	43	57	0	50	50	0	33	67	0	40	60
15	0	67	33	0	89	11	0	57	43	0	62	38	0	44	56	0	60	40
32	0	100	0	11	89	0	0	100	0	0	88	12	0	89	11	0	100	0
37	0	67	33	0	89	11	0	86	14	12	63	25	11	67	22	0	80	20

(42.6%) supply type 2. Finally, for level three, the results show that 20/30 or 66.7% of the sentences supplied are type 1 sentences and 10/30 (33.3%) are type 2. For the control group, the results show a similar pattern. For level 1, 14/18 (77.8%) of the sentences supplied are type 1 and 3/18 (16.7%) are type 2; for level 2, 41/54 (75.9%) are type 1 and 12/54 (22.2%) are type 2; for level 3, 27/42 (64.3%) are type 1 and 15/42 (35.7%) are type 2. These results support those of the acceptability judgement task. Type 1 sentences in which the particle is contiguous to the verb are supplied more often than type 2 sentences where the particle is noncontiguous.

Tables 10 and 11 show the frequency and percentage of type 3 [V-NP-PP], and type 4 [V-NP-NP], respectively, as supplied in the sentence completion task. For the experimental group, the results are as follows: at level 1, 37/48 or 77.1% of the sentences supplied are type 3; at level 2 the value is 43/54 (79.6%) and at level 3, 22/30 (73.3%). The number of type 4 sentences supplied are 10/48 or 20.8% for level 1, 6/54 (11.1%) for level 2 and 8/30 (26.7%) for level 3. Much fewer type 4 sentences than type 3 are supplied by the experimental subjects.

The results for the control group are as follows: level 1 subjects supply 10/18 or 55.6% type 3 sentences and 7/18 or 38.9% type 4 sentences. Level 2 subjects supply 27/54 or 50.0% type 3 sentences and 27/54 or 50% type 4 sentences. Finally, level 3 subjects supply 20/42 or 47.6% type 3 sentences and 21/42 or 50.0% type 4 sentences. The control group produced approximately equal numbers of dative types 3 and 4, and a much higher percentage of type 4 sentences compared to the

Table 10: FREQUENCY OF TYPES 3 & 4 - SENTENCE COMPLETION TASK

Group	Cont-E:1			Cont-E:2			Cont-E:3			Exp-M:1			Exp-M:2			Exp-M:3		
	n = 3			n = 9			n = 7			n = 8			n = 9			n = 5		
Response	0	3	4	0	3	4	0	3	4	0	3	4	0	3	4	0	3	4
<u>Sent. #</u>																		
3	0	1	2	0	5	4	1	3	3	0	8	0	1	7	1	0	3	2
6	1	2	0	0	4	5	0	4	3	1	6	1	1	8	0	0	5	0
21	0	2	1	0	6	3	0	5	2	0	6	2	1	8	0	0	5	0
30	0	2	1	0	4	5	0	2	5	0	5	3	0	6	3	0	3	2
34	0	1	2	0	2	7	0	1	6	0	5	3	2	5	2	0	3	2
35	0	2	1	0	6	3	0	5	2	0	7	1	0	9	0	0	3	2

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Table 11: PERCENTAGE OF TYPES 3 & 4 - SENTENCE COMPLETION TASK

Group	Cont-E:1			Cont-E:2			Cont-E:3			Exp-M:1			Exp-M:2			Exp-M:3		
	n = 3			n = 9			n = 7			n = 8			n = 9			n = 5		
Response	0	3	4	0	3	4	0	3	4	0	3	4	0	3	4	0	3	4
<u>Sent. #</u>																		
3	0	33	67	0	56	44	14	43	43	0	100	0	11	78	11	0	60	40
6	33	67	0	0	44	56	0	57	43	12	75	13	11	89	0	0	100	0
21	0	67	33	0	67	33	0	71	29	0	75	25	11	89	0	0	100	0
30	0	67	33	0	44	56	0	29	71	0	62	38	0	67	33	0	60	40
34	0	33	67	0	22	78	0	14	86	0	62	38	22	56	22	0	60	40
35	0	67	33	0	67	33	0	71	29	0	88	12	0	100	0	0	60	40

experimental group. This reflects the control subjects' greater productive mastery of the dative alternation, especially the double-object structure.

Tables 12 and 13 show the frequency and percentage of types 5, 6, 7 and 8 supplied in the sentence completion task. Types 9 and 10 are not represented because none of the subjects, experimental or control, produced these sentence types. From the results for the experimental group, it is apparent that most of the sentences supplied are either type 5 or type 6. For level 1, 24/48 or 50% of the sentences are type 5 and 20/48 (41.7%) are type 6. Level 2 subjects supply 21/54 (38.9%) type 5 sentences and 30/54 (55.6%) type 6 sentences. Level 3 subjects produced 16/30 or 53.3% type 5 and 13/30 or 43.3% type 6. Only one type 8 sentence was supplied which counts for only 1/30 of the total sentences supplied or 3.3%. For the control group, the results show a similar pattern. For level 1, only 4/18 or 22.2% are type 5 sentences whereas 12/18 or 66.7% are type 6. There was one example of a type 7 sentence and one example of a type 8 sentence in level 1 which comprised 5.6% of the total sentences supplied each. For level 2, 20/54 or 37.0% of the sentences are type 5 and 27/54 or 50.0% of the sentences are type 6. There are two type 8 sentences which comprise 3.7% of the total. Finally for level 3, 13/42 or 31.0% are type 5 sentences and 24/42 or 57.1% are type 6. Again there are 2 type 8 sentences which made up 4.8% of the total sentences supplied.

One difference between the experimental and control groups is that the control group produced more type 6 sentences containing the unmarked dative and

Table 12: FREQUENCY OF TYPES 5, 6, 7 & 8 - SENTENCE COMPLETION TASK

Group	Cont-E:1 n = 3			Cont-E:2 n = 9			Cont-E:3 n = 7			Exp-M:1 n = 8			Exp-M:2 n = 9			Exp-M:3 n = 5														
	0	5	6	7	8	0	5	6	7	8	0	5	6	7	8	0	5	6	7	8										
Response	0	5	6	7	8	0	5	6	7	8	0	5	6	7	8	0	5	6	7	8	0	5	6	7	8					
<u>SDt...f</u>																														
7	0	0	2	1	0	1	6	2	0	0	0	4	3	0	0	0	6	2	0	0	0	4	5	0	0	0	4	1	0	0
8	0	0	3	0	0	1	4	3	0	1	1	2	4	0	0	2	6	0	0	0	2	3	4	0	0	0	4	1	0	0
11	0	1	1	0	1	3	0	9	0	0	1	0	5	0	1	1	1	6	0	0	0	3	6	0	0	0	0	4	0	1
18	0	2	1	0	0	3	5	3	0	0	0	1	6	0	0	0	1	7	0	0	0	1	8	0	0	0	2	3	0	0
24	0	0	3	0	0	0	1	7	0	1	0	1	5	0	1	0	3	5	0	0	0	4	5	0	0	0	1	4	0	0
28	0	1	2	0	0	2	4	3	0	0	1	5	1	0	0	1	7	0	0	0	1	6	2	0	0	0	5	0	0	0

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Table 13: PERCENTAGE OF TYPES 5, 6, 7 & 8 - SENTENCE COMPLETION TASK

Group	Cont-E:1 n = 3			Cont-E:2 n = 9			Cont-E:3 n = 7			Exp-M:1 n = 8			Exp-M:2 n = 9			Exp-M:3 n = 5														
	0	5	6	7	8	0	5	6	7	8	0	5	6	7	8	0	5	6	7	8										
Response	0	5	6	7	8	0	5	6	7	8	0	5	6	7	8	0	5	6	7	8	0	5	6	7	8					
<u>SDt...f</u>																														
7	0	0	67	33	0	11	67	22	0	0	0	57	43	0	0	0	75	25	0	0	0	44	56	0	0	0	80	20	0	0
8	0	0	100	0	0	11	45	33	0	11	14	29	57	0	0	25	75	0	0	0	23	33	44	0	0	0	80	20	0	0
11	0	33	33	0	33	0	0	100	0	0	14	0	72	0	14	12	13	75	0	0	0	33	67	0	0	0	0	80	0	20
18	0	67	33	0	0	11	56	33	0	0	0	14	86	0	0	0	12	88	0	0	0	11	89	0	0	0	40	60	0	0
24	0	0	100	0	0	0	11	72	0	11	0	14	72	0	14	0	38	62	0	0	0	44	56	0	0	0	20	80	0	0
28	0	33	67	0	0	23	44	33	0	0	14	72	14	0	0	12	88	0	0	0	11	67	32	0	0	0	100	0	0	0

noncontiguous particles than type 5 with the unmarked dative and contiguous particle, whereas the experimental group (with the exception of level 2) supplies slightly more type 5 sentences than type 6.

Tables 14 and 15 show the frequency and percentage respectively of type 11a and b sentences supplied in the sentence completion task, which involve non-alternating dative verbs. One would expect that if the experimental group has mastered the dative alternation and has learned to restrict it to those verbs which alternate, then they will not supply type 11b sentences which are ungrammatical in English. Level 1 subjects supply 20/24 or 83.3% type 11a sentences and no type 11b sentences. Level 2 subjects supply 24/27 or 88.9% type 11a sentences and only 1/27 or 3.7% type 11b sentence. Level 3 subjects supply 12/15 or 80.0% 11a sentences and 3/15 or 20.0% 11b sentences. Specifically, for level 3, 2 subjects out of 5 supply ungrammatical sentences for sentence #12 and 1 out of 5 supply an ungrammatical 11b sentence type for #36. These results support the findings of the acceptability judgement task; namely, that the experimental subjects are overgeneralizing the double-object construction to those verbs which do not permit the alternation. For the control group, 7/9 or 77.8% of the sentences supplied by level 1 subjects are type 11a and none are type 11b. For level 2, 24/27 or 88.9% are 11a's and 1/27 or 3.7% is an 11b sentence. Finally, for level 3, 20/21 or 95.2% of the sentences are type 11a and none are type 11b. Except for the one type 11b sentence supplied, these results are as

Table 14: FREQUENCY OF TYPES 11A & 11B - SENTENCE COMPLETION TASK

Sent. #	Cont-E:1			Cont-E:2			Cont-E:3			Exp-M:1			Exp-M:2			Exp-M:3		
	n = 3			n = 9			n = 7			n = 8			n = 9			n = 5		
	0	a	b	0	a	b	0	a	b	0	a	b	0	a	b	0	a	b
2	1	2	0	2	7	0	0	7	0	2	6	0	1	7	1	0	5	0
12	1	2	0	0	9	0	0	7	0	2	6	0	1	8	0	0	3	2
36	0	3	0	0	8	1	1	6	0	0	8	0	0	9	0	0	4	1

Table 15: PERCENTAGE OF TYPES 11A & 11B - SENTENCE COMPLETION TASK

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Sent. #	Cont-E:1			Cont-E:2			Cont-E:3			Exp-M:1			Exp-M:2			Exp-M:3		
	n = 3			n = 9			n = 7			n = 8			n = 9			n = 5		
	0	a	b	0	a	b	0	a	b	0	a	b	0	a	b	0	a	b
2	33	67	0	22	78	0	0	100	0	25	75	0	11	78	11	0	100	0
12	33	67	0	0	100	0	0	100	0	25	75	0	11	89	0	0	60	40
36	0	100	0	0	89	11	14	86	0	0	100	0	0	100	0	0	80	20

expected. There is only one L1 speaker who produced one overgeneralization of the double-object construction.

Tables 16 and 17 show the frequency and percentage of type 12a and b sentences supplied in this task. The results here are very clear. 100% of the experimental subjects in levels 1 and 3 and 96.3% of the level 2 subjects supply 12a sentences where the particle is obligatorily contiguous, which are grammatical in English. There was only one case of an ungrammatical 12b sentence. For the control group, 8/9 or 88.9% of the sentences supplied by the level 1 subjects are type 12a, whereas 1/9 or 11.1% of the sentences are type 12b's. For level 2, 100% are type 12a and for level 3, 20/21 or 95.2% are type 12a and none are 12b's.

Tables 18 and 19 show the frequency and percentage of types 12c and d sentences supplied in the sentence completion task that contain verbs which permit contiguous and noncontiguous particles. For level 1 experimental subjects, 17/24 or 70.8% supply 12c sentences and 6/24 or 25.0% supply 12d sentences. For level 2, 19/27 or 70.4% supply 12c sentences and 8/27 or 29.6% supply 12d sentences. Level 3 subjects supply 10/15 or 66.7% 12c sentences and 5/15 or 33.3% 12d sentences. The experimental subjects show a clear preference in their use of 12c sentences, which have the structure [V-Prt], over 12d sentences in which the particle is moved. The control group subjects make similar responses. Level 1 subjects supply 8/9 or 88.9% 12c sentences and 1/9 or 11.1% 12d sentences. Level 2 subjects supply 19/27 or 70.4% 12c sentences and 7/27 or 25.9% 12d sentences. Finally, level 3 subjects

Table 16: FREQUENCY OF TYPES 12A & 12B - SENTENCE COMPLETION TASK

Sent. #	Cont-E:1			Cont-E:2			Cont-E:3			Exp-M:1			Exp-M:2			Exp-M:3		
	n = 3			n = 9			n = 7			n = 8			n = 9			n = 5		
	0	a	b	0	a	b	0	a	b	0	a	b	0	a	b	0	a	b
9	0	3	0	0	9	0	1	6	0	0	8	0	0	9	0	0	5	0
26	0	3	0	0	9	0	0	7	0	0	8	0	0	9	0	0	5	0
33	0	2	1	0	9	0	0	7	0	0	8	0	0	8	1	0	5	0

Table 17: PERCENTAGE OF TYPES 12A & 12B - SENTENCE COMPLETION TASK

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Sent. #	Cont-E:1			Cont-E:2			Cont-E:3			Exp-M:1			Exp-M:2			Exp-M:3		
	n = 3			n = 9			n = 7			n = 8			n = 9			n = 5		
	0	a	b	0	a	b	0	a	b	0	a	b	0	a	b	0	a	b
9	0	100	0	0	100	0	14	86	0	0	100	0	0	100	0	0	100	0
26	0	100	0	0	100	0	0	100	0	0	100	0	0	100	0	0	100	0
33	0	67	33	0	100	0	0	100	0	0	100	0	0	89	11	0	100	0

Table 18: FREQUENCY OF TYPES 12C & 12D - SENTENCE COMPLETION TASK

Sent. #	Cont-E:1 n = 3			Cont-E:2 n = 9			Cont-E:3 n = 7			Exp-M:1 n = 8			Exp-M:2 n = 9			Exp-M:3 n = 5		
	0	c	d	0	c	d	0	c	d	0	c	d	0	c	d	0	c	d
5	0	3	0	0	8	1	0	4	3	1	6	1	0	7	2	0	4	1
17	0	3	0	0	7	2	0	5	2	0	8	0	0	8	1	0	5	0
22	0	2	1	1	4	4	1	3	3	0	3	5	0	4	5	0	1	4

Table 19: PERCENTAGE OF TYPES 12C & 12D - SENTENCE COMPLETION TASK

Sent. #	Cont-E:1 n = 3			Cont-E:2 n = 9			Cont-E:3 n = 7			Exp-M:1 n = 8			Exp-M:2 n = 9			Exp-M:3 n = 5		
	0	c	d	0	c	d	0	c	d	0	c	d	0	c	d	0	c	d
5	0	100	0	0	89	11	0	57	43	12	75	12	0	78	22	0	80	20
17	0	100	0	0	78	22	0	71	29	0	100	0	0	89	11	0	100	0
22	0	67	33	11	44	44	14	43	43	0	37	63	0	44	56	0	20	80

supply 12/21 or 57.1% 12c sentences and 8/21 or 38.1% 12d sentences. The control subjects also prefer the unmarked sentence type to the marked one.

6.3 Discussion

Studies by Fischer (1971, 1976), Cook (1976), and Mazurkewich and White (1984) show that the prepositional dative is easier to learn and is acquired before the double-object construction by first language learners of English. As mentioned earlier, the Gropen et al. (1989) study showed, on the other hand, that their subjects used both dative structures at a very early age. However, first language research on adults and older children show an emergence of the unmarked prepositional dative first followed by the marked double-object dative. The research on the emergence of dative structures in second language studies is clear. Mazurkewich (1984b) and Hawkins (1987) demonstrate that there is a developmental sequence in the acquisition of the dative alternation; the unmarked [NP PP] complement is acquired before the marked [NP NP] complement. As well, results of a pilot study conducted in 1989 by this researcher support these conclusions; second language students preferred the unmarked form of the dative to the marked form.

As for the verb-particle construction, this study supports the analysis proposed by Van Dongen (1919), Live (1965), Bolinger (1971), Absalom (1973), and Fraser (1976); namely, that the particle is contiguous to the verb in its basic, underlying

form. First language research conducted by Clifton (1977) and Browman (1986) suggest that subjects prefer sentences containing the contiguous particle to those containing a noncontiguous particle. As well, Clifton's study points to a continuum of acceptability of sentences containing verb-particle constructions which depends on the position of the particle in the sentence. A contiguous particle is judged acceptable by more subjects than a particle between NP's which in turn is judged acceptable over a sentence-final particle.

The findings of this study tend to support the claims of markedness, the studies posited above and in discussion of the studies in Chapter 3. In some cases, however, only a trend is indicated as the differences have not been shown to be statistically significant.

In the acceptability judgement task which reflects comprehension, more subjects from both groups judged sentences containing the unmarked prepositional dative (type 3) acceptable over those containing the marked double-object dative (type 4), although results of a two-tailed t-test showed this difference not to be significant. Results of sentences containing the verb-particle construction indicate that subjects prefer sentences with a contiguous particle to those with a noncontiguous particle. Again, however, results of the t-test showed that neither group accepted type 1 [V-Prt-NP] sentences significantly more than type 2 sentences [V-NP-Prt] which, again, suggests that particle movement has been acquired. For those sentences involving the interaction of the dative alternation and the verb-particle construction, the results show that the most unmarked sentence type [V-Prt-NP-PP] is judged the most acceptable.

Other sentence types which contain one or two of the marked structures fall into a continuum of acceptability based on their degree of markedness. In general, type 5 sentences which contain a contiguous particle and a prepositional dative are the most unmarked and are judged the most acceptable. Type 6 sentences which contain a noncontiguous particle and a prepositional dative are judged next most acceptable. Type 7 and 8 sentences are more marked than types 5 and 6 because they contain a contiguous particle and a double-object dative and a noncontiguous particle and a double-object dative respectively. These sentence types are judged less acceptable than types 5 and 6 as is predicted by markedness. Type 9 sentences which contain a sentence-final particle and a double-object dative and type 10 sentences which contain sentence-final particle and a prepositional dative are judged the least acceptable by both the experimental group and the control group.

The results of the acceptability judgement task also show a slight difference in response between the experimental group and the control group. For types 5 and 6, the control group prefers type 6 sentences which contain a noncontiguous particle and a prepositional dative. The experimental group, on the other hand prefers type 5 sentences with the unmarked contiguous particle and the unmarked prepositional dative. Looking at types 7 and 8 which contain the double-object dative and the verb-particle construction, it is clear that both groups show a preference for type 8 sentences which contain a noncontiguous particle. This patterning is seen to reflect a developmental sequence in the experimental group that reflects the preference shown in the control group.

Results of the production task indicate that the subjects showed a reliance on unmarked constructions. This is in contrast to their comprehension abilities as reflected in the results obtained from the acceptability judgement task where they show better knowledge of both unmarked and marked constructions but where preference is still given to the unmarked ones. In the production of sentences involving the interaction of both target structures, the control group produce more sentences types which contain a noncontiguous particle and a prepositional dative whereas the experimental group supply more sentences types which contain both unmarked structures. Furthermore, the control group produced five sentences containing the marked double-object construction and noncontiguous particle compared to the experimental group which only produced one. The control group also produced the sole example of the marked double object and contiguous particle construction.

The results of the sentence completion task for sentence types 1 to 10 reflect those elicited by the acceptability judgement task. There was, however, a greater reliance on unmarked constructions compared to marked ones in the production task which more clearly suggests a developmental sequence with respect to the dative alternation and to the verb-particle constructions.

FOOTNOTES

1. See Appendix B.
2. For a complete description of type 12 sentences see section 5.4.
3. See Appendix C.
4. See section 5.4 for a structural description and an example of types 9 and 10.
5. See section 5.4 for a structural description of sentence types 5-10.
6. Frequencies appear in Table 3.

CHAPTER 7

Conclusion

7.1 Summary of Findings

This thesis looks at the acquisition of the dative alternation and verb-particle constructions and their interaction in second language learners of English. The experimental findings in this thesis are consistent with language acquisition research that has been reported in the literature. Specifically, the unmarked dative forms and verb-particle constructions show a tendency to be more readily acceptable on a comprehension task compared to their marked counterparts when they were tested separately. These results were strongly confirmed in a production task. Results of the interaction of the dative alternation and particle movement show the relative acceptability of sentence types that reflect the markedness claims posited. That is, sentence types involving the unmarked dative complement [NP PP] and the unmarked contiguous verb-particle constructions as in (1) and the more marked noncontiguous verb-particle forms as in (2):

- (1) John gave back the book to Mary
- (2) John gave the book back to Mary

are more readily judged acceptable compared to sentence types which contain the marked dative complement, [NP NP], and the unmarked contiguous verb-particle constructions as in (3) and the more marked noncontiguous verb-particle forms as in (4):

- (3) John gave back Mary the book
- (4) John gave Mary back the book

Insofar as comprehension of these constructions is concerned, results show that in general, there is no significant difference in the acceptability of sentence types within "compatible" pairs. This suggests that developmentally, verb-particle movement, which is accounted for by a general movement rule, is acquired before the dative alternation, which is derived by a lexical rule with language specific constraints. The results of the production test confirm these results; the second language subjects showed an overwhelming reliance on the unmarked forms of both constructions, as did the control group but to a lesser extent.

7.2 Implications for Acquisition Research

French (1985) has suggested that markedness may not necessarily be involved in an explanation of acquisition stages. However, this thesis has shown that markedness, which follows from the principles and parameters framework of UG, is important in explaining the order of acquisition of syntactic constructions in English.

This study has shown that there is a differential of acceptability which appears to reflect a developmental sequence in the acquisition of the dative alternation, particle movement and the interaction of both. In general, unmarked forms are learned before marked ones. What is needed, however, is a longitudinal study on the acquisition of these structures which will show over time the acquisition sequence that emerges from the interaction of these structures.

To my knowledge, this is the first in depth study to look at the second language acquisition of the interaction of the dative alternation and particle movement. More research on this topic must be done before any definitive conclusions can be made; however, it shows the importance of linguistic theory to language acquisition regarding the notion of explanatory adequacy and how the theory of markedness can account for acquisition phenomena like the dative alternation and particle movement.

APPENDIX A

Name: _____

Read the essay below and fill in the blanks using a word that you think belongs there. Use only **ONE** word for each blank. You have 10 minutes to complete this task.

Some Things Do Not Change

Modern pottery is very much like that of ancient times. Men began to need pots when _____ began agriculture. They needed pots _____ cook their new _____; grain, peas _____ beans. These foods have to be cooked slowly _____ water. They shaped the first pots inside baskets and baked them on _____ open fire. Later they invented a new method. They took a long thin roll of clay and coiled _____ round and round. They smoothed the pot with _____ fingers and baked it in an oven. Then, about 3000 B.C., a man invented the potter's wheel. The potter put some clay in the middle of the wheel and turned the wheel very quickly. He shaped the pot with his _____. A good potter _____ work quickly. He could sell a lot of pots, too, _____ they were beautiful. Potters _____ the first craftsmen - and artists. They painted flowers, animals and _____ patterns on their pots. Modern pots, cups, plates and vases are sometimes made of porcelain - fine white china - that are like _____ vases, plates, cups and pots of ancient times. _____ porcelain is not new. The Chinese invented it about 700 A.D. Some things have changed very little since ancient times.

- | | |
|--|-------------------|
| 10. Susan brought the sandwiches to Mary. | Not A _ _ _ A |
| 11. Susan walked up the street. | Not A _ _ _ A |
| 12. Brian passed Thomas the pencil back. | Not A _ _ _ A |
| 13. Heather tried on the dress. | Not A _ _ _ A |
| 14. Sam described the film to Joan. | Not A _ _ _ A |
| 15. Shirley never does the dishes. | Not A _ _ _ A |
| 16. Jack sold off Sam the furniture. | Not A _ _ _ A |
| 17. Mary pulled on the rope. | Not A _ _ _ A |
| 18. Mark recommended the book to Anne. | Not A _ _ _ A |
| 19. Karen sent the package off. | Not A _ _ _ A |
| 20. Jack sold the furniture off. | Not A _ _ _ A |
| 21. Jerry gave back the book to Robert. | Not A _ _ _ A |
| 22. Sam described Joan the film. | Not A _ _ _ A |
| 23. Jack sold off the furniture to Sam. | Not A _ _ _ A |
| 24. Jerry gave the book to Robert back. | Not A _ _ _ A |
| 25. Susan brought Mary the sandwiches out. | Not A _ _ _ A |
| 26. Mary pulled the rope on. | Not A _ _ _ A |
| 27. Mark recommended Anne the book. | Not A _ _ _ A |
| 28. George always listens to the teacher. | Not A _ _ _ A |
| 29. John handed the children the candy. | Not A _ _ _ A |
| 30. Jack sold the furniture to Sam. | Not A _ _ _ A |
| 31. Susan brought Mary the sandwiches. | Not A _ _ _ A |

- | | |
|--|-------------------|
| 32. Karen sent the package to Mark off. | Not A _ _ _ A |
| 33. Brian passed the pencil back. | Not A _ _ _ A |
| 34. Mark kicked in the door. | Not A _ _ _ A |
| 35. Norman read the book quietly. | Not A _ _ _ A |
| 36. Brian passed back the pencil. | Not A _ _ _ A |
| 37. Karen sent the package to Mark. | Not A _ _ _ A |
| 38. Jerry gave the book to Robert. | Not A _ _ _ A |
| 39. Susan brought the sandwiches out to Mary. | Not A _ _ _ A |
| 40. Karen sent the package off to Mark. | Not A _ _ _ A |
| 41. Karen sent Mark the package off. | Not A _ _ _ A |
| 42. Jack sold Sam off the furniture. | Not A _ _ _ A |
| 43. John handed the children the candy out. | Not A _ _ _ A |
| 44. Susan brought out the sandwiches to Mary. | Not A _ _ _ A |
| 45. Karen sent Mark the package. | Not A _ _ _ A |
| 46. Jerry gave the book back to Robert. | Not A _ _ _ A |
| 47. Susan brought out the sandwiches. | Not A _ _ _ A |
| 48. Greg is usually on time for school. | Not A _ _ _ A |
| 49. Jerry gave Robert back the book. | Not A _ _ _ A |
| 50. John handed out the candy to the children. | Not A _ _ _ A |
| 51. Jack sold Sam the furniture. | Not A _ _ _ A |
| 52. John handed the candy out to the children. | Not A _ _ _ A |
| 53. Karen sent off Mark the package. | Not A _ _ _ A |

- | | | | | |
|--|-------|----|----|------|
| 54. Karen sent off the package. | Not A | __ | __ | __ A |
| 55. Robert looked the number up. | Not A | __ | __ | __ A |
| 56. Mike really plays hockey well. | Not A | __ | __ | __ A |
| 57. John jumped the pool in. | Not A | __ | __ | __ A |
| 58. John handed the children out the candy. | Not A | __ | __ | __ A |
| 59. Brian passed the pencil to Thomas. | Not A | __ | __ | __ A |
| 60. Jack sold the furniture off to Sam. | Not A | __ | __ | __ A |
| 61. Susan brought the sandwiches out. | Not A | __ | __ | __ A |
| 62. Susan brought the sandwiches to Mary out. | Not A | __ | __ | __ A |
| 63. Judy nearly lost the lottery ticket. | Not A | __ | __ | __ A |
| 64. John handed the candy to the children. | Not A | __ | __ | __ A |
| 65. John handed the candy to the children out. | Not A | __ | __ | __ A |
| 66. Jerry gave Robert the book. | Not A | __ | __ | __ A |
| 67. Jack sold Sam the furniture off. | Not A | __ | __ | __ A |
| 68. Brian passed the pencil to Thomas back. | Not A | __ | __ | __ A |
| 69. Brian passed back the pencil to Thomas. | Not A | __ | __ | __ A |
| 70. Susan brought out Mary the sandwiches. | Not A | __ | __ | __ A |
| 71. Martha went directly to the library. | Not A | __ | __ | __ A |
| 72. Susan brought Mary out the sandwiches. | Not A | __ | __ | __ A |
| 73. Jerry gave back the book. | Not A | __ | __ | __ A |
| 74. Brian passed back Thomas the pencil. | Not A | __ | __ | __ A |
| 75. John handed out the children the candy. | Not A | __ | __ | __ A |

76. Susan explained Thomas the answer. Not A _ | _ | _ A
77. Jerry gave Robert the book back. Not A _ | _ | _ A
78. John handed out the candy. Not A _ | _ | _ A
79. John jumped in the pool. Not A _ | _ | _ A
80. Steven carefully closed the door. Not A _ | _ | _ A
81. Karen sent Mark off the package. Not A _ | _ | _ A
82. Karen sent off the package to Mark. Not A _ | _ | _ A
83. Jack sold the furniture to Sam off. Not A _ | _ | _ A
84. Brian passed Thomas back the pencil. Not A _ | _ | _ A
85. Jerry gave the book back. Not A _ | _ | _ A
86. Jason writes poems beautifully. Not A _ | _ | _ A
87. Brian passed Thomas the pencil. Not A _ | _ | _ A
88. Robert looked up the number. Not A _ | _ | _ A

Name: _____

Sex: _____ Age: _____

APPENDIX C

Complete each of the following sentences using the words on the right hand side. You may add other words, but be sure that all of the words on the right hand side are used. For example:

Ralph _____

car
garage
took

1. Judy _____

lottery-ticket
nearly
lost

2. Sam _____

film
described
Joan

3. Brian _____

passed
Thomas
pencil

4. Norman _____

read
quietly
book

5. Heather _____
_____ dress
on
tried
6. Karen _____
_____ Mark
package
sent
7. John _____
_____ children
out
handed
candy
8. Susan _____
_____ out
Mary
sandwiches
brought
9. John _____
_____ jumped
pool
in
10. Karen _____
_____ package
off
sent
11. Brian _____
_____ Thomas
back
pencil
passed

12. Mark _____
_____ Anne recommended book
13. John _____
_____ candy out handed
14. Jerry _____
_____ book gave back
15. Brian _____
_____ pencil back passed
16. Jessica _____
_____ goes bed often late
17. Robert _____
_____ looked up number

18. Karen _____
_____ package
sent
off
Mark
19. George _____
_____ listens
teacher
always
20. Steven _____
_____ door
closed
carefully
21. Jack _____
_____ Sam
furniture
sold
22. Mark _____
_____ in
kicked
door
23. Martha _____
_____ directly
library
went
24. Jerry _____
_____ book
gave
back
Robert

25. Shirley _____
_____ does
never
dishes
26. Susan _____
_____ up
street
walked
27. Mike _____
_____ well
plays
really
hockey
28. Jack _____
_____ off
sold
Sam
furniture
29. Jason _____
_____ writes
beautifully
poetry
30. Jerry _____
_____ gave
Robert
book

31. Greg _____
_____ school
is
time
usually
32. Jack _____
_____ off
sold
furniture
33. Mary _____
_____ on
pulled
rope
34. Susan _____
_____ brought
Mary
sandwiches
35. John _____
_____ children
candy
handed
36. Susan _____
_____ answer
explained
Thomas

37. Susan _____

sandwiches
brought
out

Name: _____

Sex: _____ Age: _____

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