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THE THEORY OF MARKEDNESS, PIED-PIPING AND PREPOSITION-STRANDING IN SECOND LANGUAGE ACQUISITION.

by

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A Thesis
submitted to the School of Gruadate Studies and Research
in partial fulfillment of the requirements for the M.A.
degree in Linguistics

University of Ottawa

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Dedicated to my mother, Minette, my wife, Edith, and to the memory of my grandmother, Rosetta.

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M.A.F.

ABSTRACT.

This thesis examines the theory of Markedness and the predictions of the Markedness Differential Hypothesis (MDH) in second language acquisition, with specific reference to the acquisition of pied-piping and preposition-stranding by native adult Francophones learning English as L2.

The theory of Universal Grammar (Chomsky 1982) states that the grammar of a language can be divided into a Core and a Periphery. Core grammar contains rules and conditions that are easily accessible to the language learner, and that are either invariant across languages, or fall within a very limited range defined by restricted parameters. Core grammar may be supplemented by a periphery, which contains rules that are relaxed, marked, less accessible, and generally language-specific. The theory predicts that more marked grammars are less accessible or harder to acquire than less marked grammars.

The potential extraction of an NP from a number of phrasal categories is defined by a syntactic parameter that is believed to have marked and unmarked options. For instance, the extraction of an NP from a Prepositional Phrase (Van Riemsdijk 1978; Hornstein and Weinberg 1981; Kayne 1981) is so defined. When the NP is extracted together with the preposition and preposed, the movement is referred to as pied-piping. For example:

John is talking to whom?

To whom$_i$ is John talking t$_i$?

Another possibility is that only the NP may be extracted and preposed, leaving the preposition stranded to the right of the verb. Such a movement is referred to as preposition-stranding. For example:

John is talking to whom?

Who(m)$_i$ is John talking to t$_i$?

There are a number of arguments which suggest that the movement involving pied-piping is made possible by a rule of core grammar, while preposition-stranding is a marked alternative that requires the application of a language-specific rule of reanalysis - a peripheral rule - for it to be acceptable in English. This reanalysis rule, which transforms the verb and the preposition into a complex verb, is considered marked because it is restricted to just a few languages and is limited to elements in the VP only. Pied-piping, on the other hand, is unmarked since it does not violate any universal constraint and is acceptable in almost every language that allows movement rules.

The theory of Markedness, ideally, predicts an earlier and easier acquisition of the pied-piping form as compared to the acquisition of the preposition-stranding form. In English, however, preposition-stranding is more frequently used in everyday colloquial conversation, while pied-piping tends to be reserved for formal registers. Thus, the learner's linguistic input will very likely have a predominance of stranded prepositions, and this could result in the acquisition of preposition-stranding earlier than pied-piping, contrary to the predictions of the theory of Markedness.

I set out to test this with learners of English as a second language. I conducted an experiment consisting of both written and oral tasks, covering productive and comprehension abilities with French speaking adult learners of English as L2. In this experiment, the subjects almost consistently produced more correct responses with stranded prepositions than with pied-piped prepositions. Furthermore, the rate of preposition-stranding increased with proficiency, and was a more pronounced increase than the rate of pied-piping. This suggests that intra-language frequency of a particular form or structure may have an important role to play in second language acquisition.

INTRODUCTION.

A major goal that researchers in language acquisition are trying to achieve is to come up with an adequate, unified theory that will explain the process of acquisition. Earlier research has concentrated on L1 acquisition, though in recent years there has been an increasing interest in the process of L2 acquisition. Initially much of the research was mainly descriptive, not explanatory, usually focussing on the pattern of L2 acquisition, and the extent to which it was similar to, or different from, L1 acquisition.

Generally there has been less controversy on most of the principles governing L1 acquisition than those governing L2 acquisition. L2 acquisition has produced varied and often conflicting results, since researchers have to take into account a number of variables such as Native Language interference, attitude, and motivation, which are not relevant to L1 acquisition. Two basic but conflicting hypotheses have emerged in recent research to explain the process of L2 acquisition:

1. That L1 is used as a reservoir which can be dipped into when L2 data proves inadequate; that L1 syntactic structure may be substituted in place of L2 syntactic structure, sometimes resulting in erroneous L2 constructions.

2. That L2 acquisition proceeds in much the same manner as L1 acquisition, and L2 develops without significant influence, if any, from L1.

The introduction of the theory of Generative Grammar and the concept of Universal Grammar by Chomsky during the sixties almost led to the demise of the Contrastive Analysis Hypothesis (CAH) which predicts the influence of L1 in L2 acquisition. However, some researchers are now beginning to focus attention once again on how the Native Language could become a source of explanation and prediction of errors and

difficulties in L2 acquisition, and this is linked with the emergence of the theory of Markedness and its predictions in L2 acquisition.

In this thesis, I propose to study the acquisition of pied-piping and preposition-stranding by native Francophone adults who are learning English as a second language. The theory of Markedness and the Markedness Differential Hypothesis (MDH) are examined, to determine the effects of their predictions on the acquisition of pied-piping and preposition-stranding.

In chapter one, Chomsky's theory of Universal Grammar (UG) and the setting of parameters in a language are discussed. The theory of Markedness is also introduced and the notion that the grammar of a language is divided into a Core and a Periphery. The application of core grammar rules yields structures that are considered unmarked, and a relaxation of these rules may result in marked alternate structures. These marked alternatives are usually made grammatical by the application of peripheral and language-specific rules.

Different languages employ different parameters of UG, and parametric variation between languages is believed to create learning problems in L2, as a result of inadequate resetting of the parameter(s) involved.

In chapter two, the movements involving pied-piping and preposition-stranding are introduced. These movements are made possible by the application of the rule of move-alpha. This rule accounts for the movement of a relative pronoun from its subject or object position to the COMP slot at the beginning of the sentence. Such a movement may involve a relative pronoun that is the object of a preposition. If the relative pronoun is preposed together with the preposition, the movement is referred to as pied-piping. For example :

To whom is John talking t ?
i i

Alternatively, only the relative pronoun may be moved to the initial COMP, while the preposition is left stranded to the right of the verb. This movement is referred to as preposition-stranding. For example :

Who(m) is John talking to t ?
i i

There are a number of arguments which suggest that preposition-stranding is marked relative to pied-piping. The movement involving pied-piping, it is argued, does not violate any universal constraint, and it is acceptable in almost every language that allows movement rules. The movement involving preposition-stranding is language-specific, and it is acceptable in very few languages. It is believed that all languages that accept preposition-stranding also accept pied-piping, but not vice versa.

In chapter three, some of the studies on pied-piping and preposition-stranding in L1 and L2 acquisition are presented, with different and conflicting results.

French (1984) conducted a study to test the comprehension and production of pied-piping and preposition-stranding in English children. Her results, she claims, fail to support the predictions of the Developmental Hypothesis that the unmarked form (pied-piping) should be acquired before the marked form (preposition-stranding) in L1 acquisition.

Mazurkewich (1984, 1985) conducted a written experiment on the acquisition of dative questions in English by native Francophones and native Inuktitut speakers. She claims that her results support the prediction of a developmental sequence in acquisition from the unmarked form (pied-piping) to the marked form (preposition-stranding). White (1983), however, questions this claim since the data of the Inuktitut speakers did not have any evidence of a developmental sequence. She does not rule out the possible influence of transfer on the French speakers since they have the pied-piping form in their L1 while the Inuktitut speakers do not.

With this in mind, I decided to conduct an experiment on this subject, and the results I have obtained and my analysis and conclusions are presented in chapters four and five.

In almost all the tests, the subjects consistently produced more correct responses with preposition-stranding (considered marked) than correct responses with pied-piping (considered unmarked). Preposition-stranding is considered marked but is more frequently used in English. Pied-piping is almost non-existent in informal everyday English. As a result, L2 learners acquiring English in an informal situation will be formulating hypotheses from data containing preposition-stranding rather than pied-piping structures. This could lead them to conclude that preposition-stranding is the norm in English. This could result in an earlier acquisition of preposition-stranding, and a preference for the use of stranded prepositions over pied-piped prepositions, when both forms have been acquired.

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CHAPTER I : THE THEORY OF MARKEDNESS AND THE SETTING OF PARAMETERS.

1.1. INTRODUCTION.

This chapter introduces the notion of Markedness as presented in the theory of Universal Grammar (UG), and discusses the Markedness Hypothesis and its implications in first- and second-language acquisition, and its role in explaining second-language errors and difficulties. The chapter also discusses the idea of parameters and parameter setting, and how parametric variation between languages may be the prime source of errors in the acquisition of a second language.

1.2. UNIVERSAL GRAMMAR, MARKEDNESS AND THE SETTING OF PARAMETERS.

The notion of Markedness is linked with Chomsky's theory of Universal Grammar (UG), which claims that human beings are born equipped with an innate knowledge of universal principles of grammar, and that they are predisposed to acquire any natural human language.

The theory of UG, Chomsky (1982) claims, has to fulfil two basic conditions:

> It must be compatible with the diversity of existing (indeed possible) grammars. At the same time UG must be sufficiently constrained and restrictive in the options it permits so as to account for the fact that each of these grammars develops in the mind, on the basis of quite limited evidence.
>
> (Chomsky 1982 : 3)

We should thus expect to find, Chomsky adds:

> A highly structured theory of UG based on a number of fundamental principles that sharply restrict the class of attainable grammars and narrowly constrain their form, but with parameters that have to be fixed by experience. If these parameters are embedded in a theory of UG that is sufficiently rich in structure, then the languages that are determined by fixing their values one way or another will appear to be quite diverse, since the consequences of one set of choices may be very different from the consequences of another set...
>
> (Chomsky 1982 : 3 - 4)

1.2.1. CORE GRAMMAR AND PERIPHERY.

The parameters may be open and set for a particular value on the basis of the linguistic input received, and fixing these parameters in one of the options permitted by UG leads to the development of a particular grammar called "core grammar", which languages ideally should conform to. Realistically, however, as a result of the heterogeneous nature of speech communities, a real language "will incorporate a periphery of borrowings, historical residues, inventions, and so on, which we can hardly expect to ...

incorporate within a principled theory of UG" (Chomsky 1982 : 8). Chomsky believes that UG determines a set of core grammars, which generally consist of unmarked options, and that UG makes allowance for the extension of core grammar to a marked periphery, which contains marked alternatives.

Core grammar is the unmarked part of a grammar, and is "optimally accessible" (Koster 1978). It is the most rigid part of a language, with rules and conditions that are "either invariant across languages, or fall within a very limited range" (Koster 1978 : 566). Rutherford and Sharwood-Smith describe core grammar as the part of a grammar which consists of:

> ...the constraints on the movement of elements within the sentence (i.e. constraints on alpha-movement), ... and the result of having set the parameters ... with varying degrees of markedness. The (relatively unmarked) core is supplemented by a marked periphery containing language-specific rules ...
>
> (Rutherford & Sharwood-Smith 1985 : 277)

The periphery contains rules that are relaxed, rules that often require "a more elaborate triggering experience" (White 1981), and are thus considered marked. These rules may violate core constraints and may generate 'irregular' constructions. This is the area in which languages differ a great deal.

1.3. THE NOTION OF MARKEDNESS.

Generally the theory of Markedness is a study of how one language may differ from another. It attempts to examine whether variation across languages may or may not be unlimited and arbitrary. As White (1981) puts it, the theory of Markedness is "a means of establishing the limits of possible grammars and the accessibility of grammars within those limits" (White 1981 : 257).

The unmarked case is generally considered to be more basic or central, possessing fewer features and conveying less information. It is implied in the marked case, which is considered 'unnatural', infrequent, complex, and language-particular.

There are different types of Markedness and Ferguson (1984) claims that the most common form of Markedness is an implicational series such as : A > B > C > D > E , where 'E' is believed to be present in the repertoire of all languages and 'A' is believed to be present in the repertoire of very few languages; and "any point in the series (implies) the presence of the element(s) to the right of it" (Ferguson 1984 : 249).

According to implicational Markedness least marked structures are believed to be present in the repertoire of almost every human language, and the more marked a structure is, the fewer languages it will be present in, with the most

marked structures being present in very few languages.

1.4. MARKEDNESS AND FIRST-LANGUAGE ACQUISITION.

Margot French (1984) outlines two conceptions of Markedness in L1 acquisition:

1. DEVELOPMENTAL HYPOTHESIS - A more popular view which claims that the child initially assumes the unmarked setting and proceeds developmentally from the unmarked to the marked.

2. LEARNABILITY HYPOTHESIS - that acquisition does not necessarily imply proceeding developmentally from the unmarked to the marked. Where both marked and unmarked settings are present, there is the probability of simultaneous realization of the two structures.

(French 1982 : 132)

The Developmental Hypothesis predicts that the child, in L1 acquisition, is predisposed to initially assume the unmarked setting, according to the theory of UG, and will later acquire the marked setting as a result of positive evidence of its existence in L1. The implication therefore is that the marked setting will neither be realized before the unmarked setting nor will it be realized at the same time as the unmarked setting. The Learnability Hypothesis, however, rejects the theory of a developmental process. It claims that where both the marked and unmarked settings are present in L1, the two structures may be realized

simultaneously.

Chomsky (1982) apparently supports the Developmental Hypothesis when he claims that the child approaches the task of language acquisition equipped with UG and an associated theory of Markedness which serves 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. In the absence of evidence to the contrary, unmarked options are selected.
>
> (Chomsky 1982 : 8)

According to White (1981), Markedness assumes that "a more highly valued or less marked grammar is ... easier to acquire than a marked one, requiring less elaborate triggering experience" (White 1981 : 257). The theory of Markedness (based on the Developmental Hypothesis) thus predicts that the more marked grammars are less accessible or harder to acquire than the less marked grammars in L1 acquisition, where the notion of Markedness connotes some form of complexity as opposed to simplicity, which is associated with unmarked grammars. Marked alternatives may only be considered after less marked options have been tried and have failed. Thus in a language with a high degree of Markedness, the child will first proceed through less marked options, and will eventually acquire the more marked

alternatives. All other things being equal, the theory of Markedness predicts that there will be a stage during acquisition when the L1 learner will have assumed the unmarked but not the marked setting, in spite of positive evidence for the marked setting in his linguistic input.

1.5. MARKEDNESS AND SECOND-LANGUAGE ACQUISITION.

In second-language acquisition studies, there are a number of definitions of the term 'Markedness', the most popular being Eckman's (1977) distributional definition which states that:

> A phenomenon A in some language is more marked than B if the presence of A in a language implies the presence of B; but the presence of B does not imply the presence of A.
>
> (Eckman 1977 : 320)

According to this definition the presence of a more marked structure in a particular language implies the presence of its less marked counterpart in that language, but not vice versa. That is, there is hardly any language in which a more marked structure is present, but its unmarked option is unacceptable.

Recently some attempts have been made to apply Chomsky's Government Binding Framework in second-language acquisition, to determine the roles of UG and the marked and unmarked properties of L1 and L2 and their effects on the speed and order of the acquisition of L2. As we have seen in L1

acquisition, the child is believed to initially assume the unmarked setting and later acquires the marked setting on the basis of specific evidence of its operation in the language. In L2 acquisition, however, the learner may be faced with conflicting evidence from two different languages, where L1 and L2 have parameters of UG set in different ways.

1.5.1. THE MARKEDNESS DIFFERENTIAL HYPOTHESIS.

Though differences do exist among languages, Eckman (1977, 1981) points out that not all differences between L1 and L2 cause learning problems in L2 acquisition. This is a modification of the Contrastive Analysis Hypothesis (CAH), whose strong version claims that all L2 errors are the result of L1 interference, and that the more similar L1 and L2 are, the less problems the learner will encounter in L2 acquisition. Conversely, the greater the differences between L1 and L2, the more problems the learner will have. The weaker version of the CAH however makes allowance for the influence of other factors, but maintains that a significant proportion of L2 errors stems from the effects of L1 interference.

Eckman suggests that there should be a means of determining which differences are significant and which are not, in explaining second-language acquisition errors. There should be a procedure for assigning values to available grammars and ranking them in order of relative

optimality; that is, a hierarchy of difficulty, which, according to Eckman, should fulfil certain basic requirements. Such a hierarchy should also be universal, (that is, it should be independent of any language, but yet applicable to all languages). An attempt to define such a procedure is the Markedness Differential Hypothesis (MDH) first proposed by Eckman (1977). The MDH claims that areas of difficulty in L2 may be determined by a systematic comparison of L1 and L2 grammars, and the markedness relations stated in UG. This hypothesis makes three predictions:

a. Those areas of the target language which differ from the native language and are more marked than the native language will be difficult.

b. The relative degree of difficulty of the areas of the target language which are more marked than the native language will correspond to the relative degree of Markedness.

c. Those areas of the target language which are different from the native language, but are not more marked than the native language will not be difficult.

(Eckman 1977 : 321)

Gundel (1982) however limits Eckman's hypothesis to typological markedness. Citing counter-examples to the

predictions of Eckman's hypothesis, she suggests that the class of implicational universals be limited in determining difficulty in language learning by proposing a Revised Markedness Differential Hypothesis (RMDH) which states that:

> Those phenomena in the target language which (differ from and) are more marked than corresponding phenomena in the same context in the native language will be difficult; those phenomena which differ from and are not more marked than corresponding phenomena in the same context in the native language will not be difficult.
>
> (Gundel 1982 : 16)

According to the predictions of the MDH and RMDH, the L2 learner will initially assume the unmarked setting and will later acquire the marked setting only on the basis of positive evidence. If L2 has an unmarked value and L1 has the marked, there will be no difficulty in the acquisition of the unmarked setting of L2. Conversely if L2 has the marked value and L1 has the unmarked, the learner will encounter some difficulty acquiring the marked setting of L2.

1.6. PARAMETRIC VARIATION AND SECOND-LANGUAGE ACQUISITION.

Parametric variation between languages is generally believed to be an important source of errors in L2 acquisition, as a result of inadequate resetting of the parameters involved (Van Riemsdijk 1978; Hornstein & Weinberg 1981). Lydia White (1984a) proposes that the L2

learner will be affected by L1 parameters based on the following conditions:

a. L1 and L2 have the same principle set in the same way : there should be no transfer problems and there may be "positive transfer".

b. L1 does not have some principle activated which is required in L2 : there should be no transfer. L2 data will motivate the principle in question and there will be no competition from an L1 setting.

c. L1 and L2 both instantiate some principle with parameters set in different ways : there will be transfer of the L1 parameter until the learner realizes, on the basis of L2 data, that the L1 setting is not appropriate.

d. L1 has some parameter set at the + value but L2 has the - value : there will be transfer of the L1 value until the learner realizes that the L1 parameter is not operative in L2.

(White 1984a : 7)

White believes that where L1 does not involve a particular parameter and L2 has the marked value, the learner will not necessarily go through the unmarked value first as Mazurkewich (1984) claims. In an experiment Mazurkewich (1984) conducted, Francophone subjects produced more unmarked forms - pied-piping - and there was a developmental sequence towards producing the marked form -

preposition-stranding. She further noted that the advanced subjects stranded more than the intermediate subjects who, in turn, stranded more than the beginners. For White the possibility exists for the learner to acquire the marked form without necessarily having to acquire the unmarked form first. She believes that if L1 is unmarked, the parameter setting will not affect the initial hypothesis and the L2 learner will choose the unmarked setting. Where L1 has the marked setting and L2 has the unmarked, the marked form may occur and even persist in the early interlanguage, since there has been positive evidence of its existence in L1 and the learner may not immediately notice its absence in L2 grammar. This assumption is however contrary to the popular consensus that the L2 learner will first try the unmarked option, since it is more basic and less complex.

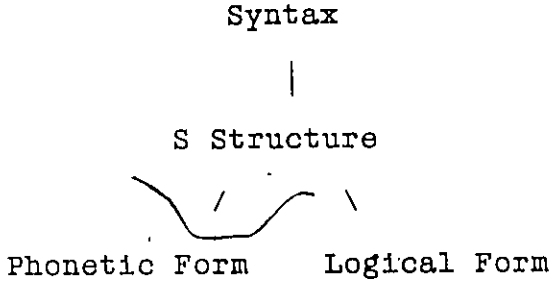
1.7. CONCLUSION.

Based on the predictions of the theory of Markedness, one could conclude that errors in L2 acquisition may be the result of parametric variation between L1 and L2 and an inadequate resetting of the parameters involved. Structures that are unmarked in L1 as well as in L2 are predicted to create no problems for L2 learners, while structures that are unmarked in L1 but are marked in L2 are expected to create learning problems. The theory further predicts increasing difficulty as the degree of markedness increases.

CHAPTER II : PIED-PIPING AND PREPOSITION-STRANDING.

2.1. INTRODUCTION.

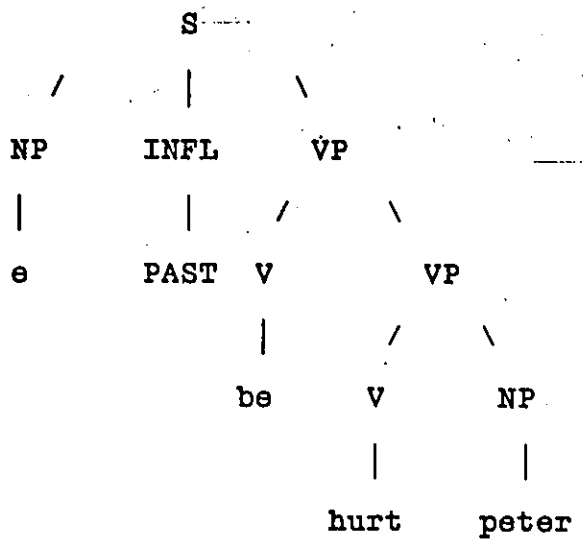
Universal Grammar, according to Chomsky (1982), has the following basic fundamental components:



(Chomsky 1982 : 17)

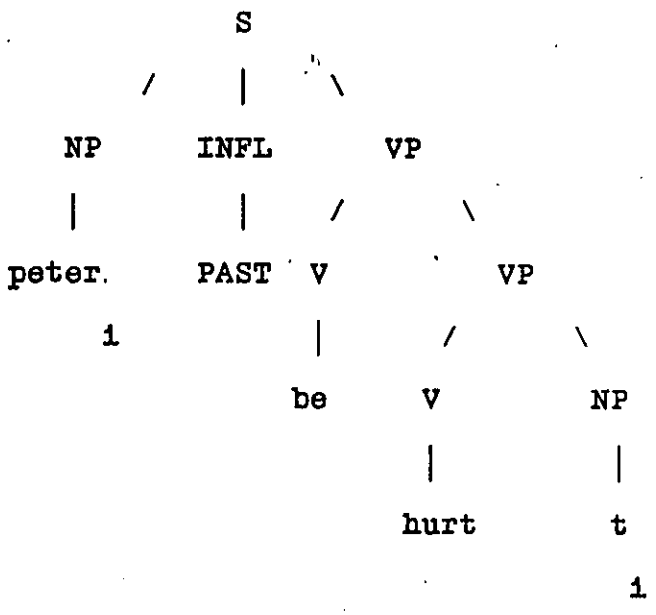
The Phonetic Form is the sound representation of the output of the S-Structure while the Logical Form gives meaning to the output.

Structures created by Phrase Structure rules in the Syntax may be transformed into new structures in the S-Structure by the rule of transformation, which has the form 'move-alpha', where 'alpha' is an arbitrary category. Languages have the option to employ the transformational rule of 'move-alpha' which, if employed, may be subject to some parametric variation. (Chomsky 1982 : 18). This rule, for instance, is responsible for the derivation of passive sentences in English. For example, the phrase Peter was hurt has been derived from the D-Structure - np-e- was hurt peter:



since the verb <u>hurt</u> is subcategorized to require an object (in this case - <u>peter</u>). The S-structure is derived as a result of alpha-movement, or more specifically, NP-movement. That is, the NP, <u>peter</u>, which is the object of the verb, <u>hurt</u>, is moved to the empty NP slot at the beginning of the sentence.

S-Structure:



(<u>peter</u> is co-indexed with the trace - the object of the V)

2.2. PIED-PIPING, PREPOSITION-STRANDING AND MARKEDNESS.

Wh-movement is another instance of the rule of 'move alpha', and it is in operation in many languages of the world. This involves the movement of a relative NP from its underlying position and its attachment to an empty slot in the COMP node. For example:

```
[ [   John [   killed [   a snake]]]]
 S NP       VP         NP

[ [   John [   killed [   what]]]]
 S NP       VP         NP
```

D-Structure :

```
[   e [ John killed what]]
 S'    S
```

S-Structure :

```
[   what   [ did John kill t ]]
 S'     i  S                 i
```

(Note: extraction of NP from a VP.)

The potential extraction of an NP from various types of phrasal categories is defined by a syntactic parameter that is believed to have marked and unmarked options. The extraction of an NP from a VP (see above) is considered unmarked relative to the extraction of an NP from a PP (Van Riemsdijk 1978; Hornstein & Weinberg 1981; Kayne 1981). Sometimes the whole PP in a sentence may be preposed and such a movement is referred to as pied-piping. At other times the NP may be extracted from the PP and preposed,

while the preposition is left stranded to the right of the verb. This movement is referred to as preposition-stranding. For example:

[[John [is talking [to [whom]]]]]
S NP VP PP NP

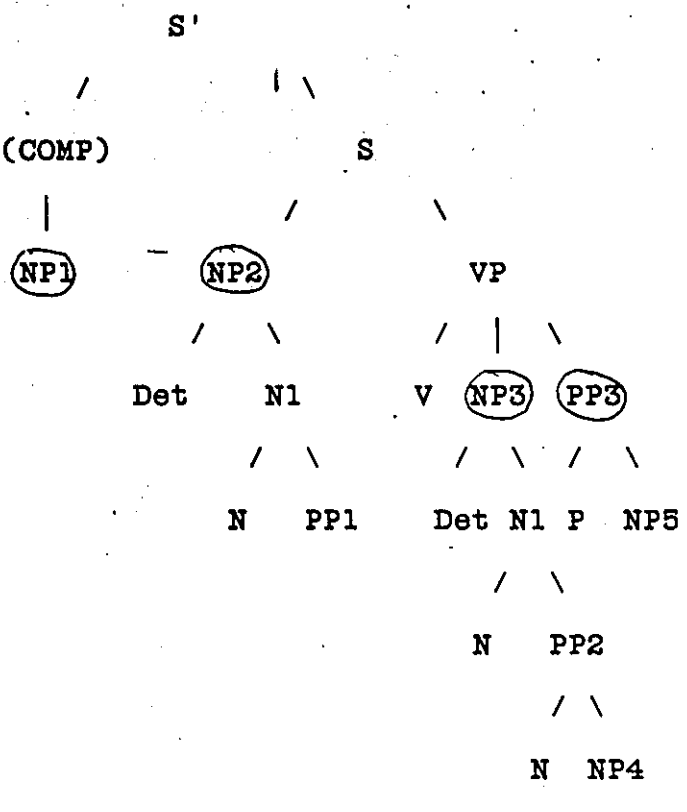
To whom is John talking? (Pied-piping)

Who(m) is John talking to? (Preposition-stranding)

Pied-piping is assumed to be unmarked and to belong to the core grammar of English, while preposition-stranding is considered a marked phenomenon that requires the application of a Reanalysis rule - a marked, language-specific, peripheral rule - for it to be acceptable in English. A number of explanations have been put forward to justify the claim that pied-piping is unmarked relative to preposition-stranding.

2.3. THE MAIN PROJECTION RULE.

Koster (1978) proposes the Main Projection Rule (MPR) which states that in core grammar, empty nodes are only possible in positions immediately dominated by categories of the Main Projection. Such categories include S', S and VP. For example:



(Koster 1978 : 570)

Only the encircled nodes may be empty. The other nonencircled phrase nodes (PP1, PP2, NP4, NP5) are too deeply embedded to be empty in core grammar. As a result, the NPs that are objects of prepositions may not be empty. Thus movement involving pied-piping is a condition of core grammar since it satisfies the requirements of the MPR. Movement involving preposition-stranding is a violation of the MPR, and is made possible only by a relaxation of this condition.

2.4. PREPOSITION-STRANDING AND SUBJACENCY.

The rule of 'move alpha', Chomsky suggests, has to be constrained, and one general property of this rule is that

when it is applied 'alpha' cannot be displaced 'too far' (Chomsky 1981 : 48). One constraint to this rule therefore is that its application may not cross more than one bounding node (that is, a phrase or clause boundary), in order that the principle of Subjacency may not be violated. The principle of Subjacency states that:

In the structure

... X ... [$_{\alpha}$ ... [$_{\beta}$ ... Y ...] ...]

where alpha and beta are bounding nodes and alpha does not exhaustively dominate beta, no rule may involve the positions Y and X.

Subjacency imposes restrictions on the application of the rule of 'move-alpha' - that alpha-movement may not cross more than one bounding node. Thus, a popular argument to account for the rarity of preposition-stranding across languages is that it violates the universal principle of Subjacency. Van Riemsdijk (1978) argues that PPs are also bounding nodes in English since they behave like syntactic islands in a number of constructions, and are total islands in many languages, with English and Dutch being possible exceptions since they allow the movement of the object of the preposition which is left stranded. Pied-piping does not violate Subjacency because the whole PP is moved. The learner, confronted with positive evidence of a violation like preposition-stranding in a language, later acquires it.

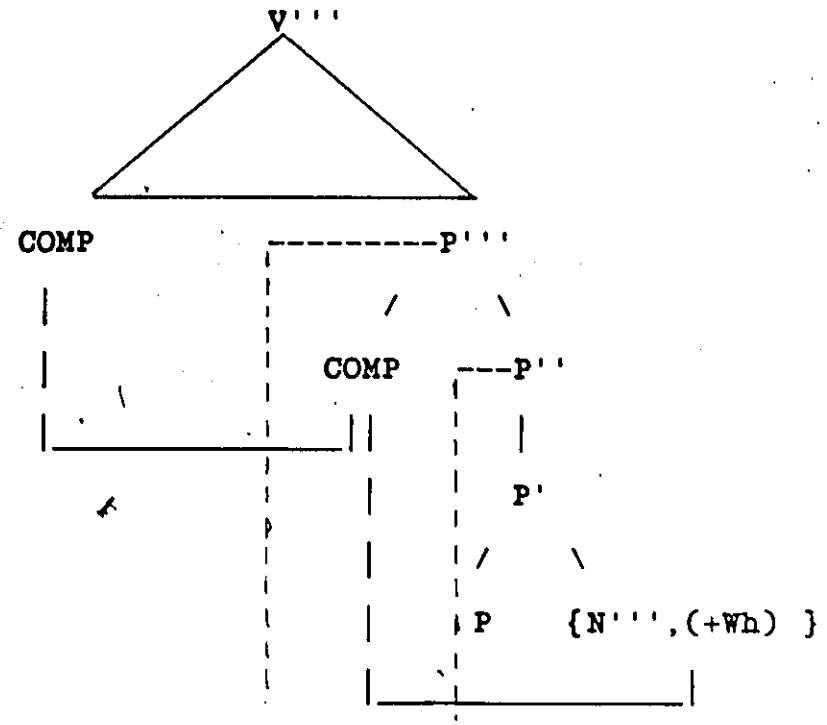
Thus cross-linguistically, preposition-stranding may be considered marked since it is acceptable in very few languages in the world. In addition, though it is a frequent and regular phenomenon in Wh-movement in English, prepositions cannot be indiscriminately stranded. For example:

* What did they leave nothwithstanding?
* This is the journalist that Bill resigned according to.
* Which break should we leave during?

(Van Riemsdijk 1978 : 145)

2.4.1. THE ESCAPE-HATCH THEORY.

According to Van Riemsdijk, PPs are essentially islands in English, and Wh-movement requires special rules to yield preposition-stranding. He proposes the "Escape-hatch" Theory which states that the position inside the PP is a special "escape-hatch" position that is beyond the scope of constraints. It is possible for Wh-movement to extract elements from a VP, which is a binding category, because the elements are moved into the COMP position. Because of the absence of a COMP position in NPs and APs, extraction is not permitted in these categories. Van Riemsdijk proposes that a PP in English probably has something like a COMP which acts as an "escape-hatch" to which the NP of the PP is attached before it is moved to the initial COMP:



(Van Riemsdijk 1978 : 227)

Only one bounding node is crossed during each movement, and Subjacency is not violated. In other languages (e.g. Romance languages), there is no COMP in the PP, and movement involving stranding violates Subjacency. Phrase structure rules generating PPs with COMPs are thus more marked relative to phrase structure rules generating PPs without COMPs.

Hornstein and Weinberg (1981), however, think that Van Riemsdijk's "Escape-hatch" Theory is inadequate to account for the grammaticality of preposition-stranding in English. A problem they find with Van Riemsdijk's analysis is that it fails to account for the ungrammaticality of structures with preposition-stranding in languages, such as French and

Italian, that have S' and not S as a bounding node. In the following sentences, movement of the object of the preposition to the COMP is across only one bounding node - the PP - but the sentences are still unacceptable:

a. La fille de qui il parlait
The girl of whom he spoke

FRENCH

b. * La fille qu'il parlait de
The girl who he spoke of

c. L'auto con la quale Giovanni ha portanto Mario
The car with which Giovanni drove Mario

ITALIAN

d. * L'auto la quale Giovanni ha portanto Mario con
The car which Giovanni drove Mario with

(Hornstein & Weinberg 1981 : 57)

2.5. THE RULE OF SYNTACTIC REANALYSIS.

Hornstein and Weinberg (1981) propose a rule of syntactic reanalysis to account for the grammaticality of preposition-stranding in English. This rule is based on Chomsky's (1981) idea that the verb and preposition undergo a marked rule of reanalysis to create a 'complex verb', to prevent the violation of a universal grammatical constraint on movement. Preposition-stranding, they claim, is made possible as a result of the operation of three different mechanisms:

1. A universal filter blocking oblique traces : An empty category (e.g. a trace) cannot be assigned oblique case. That is, where an NP has no lexical material and is marked oblique by the Case-marking convention, it should be ruled ungrammatical. i.e.:

$$*\ [\ \underset{\text{NP oblique}}{e}\ ]$$

(Hornstein & Weinberg 1981 : 60)

2. A language-specific rule of syntactic reanalysis which states that "in the domain of VP, a V and any set of contiguous elements to its right can form a complex V". That is :

V --› V* (where V c-commands all elements in V*)

For example, structure (a) may be reanalyzed as either (b) or (c) :

(a) [John [[talked [to Harry] [about Fred.]]]]
S VP V PP PP

(b) [John [[talked to Harry about Fred.]]]
S VP V

(c) [John [[talked to Harry about] Fred.]]
S VP V

(Hornstein & Weinberg 1981 : 60)

This rule is optional and it applies in the underlying structure.

3. A universal Case-marking convention : Every lexical NP must be assigned case after the application of all transformational rules and before filters apply, as follows:

a. An NP is marked [+ objective] if it is governed by V;

b. An NP is marked [+ oblique] if it is governed by P.

(Hornstein & Weinberg 1981 : 61)

'government' being defined as:

X governs Y if and only if

i. X is a governor (i.e. N, V, A, P)

ii. X c-commands Y (X c-commands Y if the first branching node dominating X also dominates Y); X does not dominate Y, nor Y, X.

iii. There is no intervening phrasal category (NP, VP, AP, PP, or S') between X and Y.

According to Hornstein and Weinberg, the reanalysis rule should be crucially ordered before case-marking.

Thus when a Wh-element that is directly governed by a preposition is moved, to prevent its trace from being marked oblique, the reanalysis rule should be applied if the PP is immediately dominated by the VP. By reanalyzing the verb and the preposition as a complex verb, the Wh-trace will be marked [+ objective].

2.5.1. THE EMPTY CATEGORY PRINCIPLE.

Hornstein and Weinberg's analysis is similar to Chomsky's (1982) rule of reanalysis. The difference, however, is that Chomsky proposes that this rule works in conjunction with the Empty Category Principle (ECP) rather

than the Oblique Case Filter. According to the ECP, an empty category [$_{\alpha}$ e] must be properly governed : where proper government is restricted to only categories with the features [+N] or [+V]; that is, nouns, verbs and adjectives, but not prepositions. By reanalyzing the verb and preposition as a complex verb, the conditions of the ECP are not violated.

The Case-marking Convention thus makes two predictions :

1. Reanalysis is limited to the elements in the VP, thus restricting stranding to only PPs that are in the domain of V.

2. Preposition-stranding is considered a marked phenomenon in assuming that Reanalysis is a marked rule of grammar.

(Hornstein & Weinberg 1981 : 63)

The reanalysis rule is language-specific and is generally absent in Romance languages such as French, Spanish, and Italian, where preposition-stranding will be a violation of the Oblique Case Filter or the Empty Category Principle, as demonstrated by the following examples:

a. FRENCH : À qui a-t-il donné l'invitation?
ENGLISH : To whom did he give the invitation?

b. FRENCH : * Qui a-t-il donné l'invitation à t ?
ENGLISH : Who did he give the invitation to?

2.5.2. KAYNE.

Kayne (1981) does not disagree with Hornstein and Weinberg's (1981) proposal that there exists a reanalysis rule in English but not in French. He, however, claims that there are other reanalysis rules in French, such as the ones operating in sentences involving causatives and idiomatic expressions. For example :

mettre fin à --> "put an end to"

(Kayne 1981 : 362)

Here, a verb (mettre) and a noun (fin) are amalgamated into one constituent :

[mettre [fin à]]
V NP V'

He concludes that French has a reanalysis rule of V -- NP, as shown in the following example:

Je veux que soit mis fin à la guerre.
I want that be put an end to the war.

(Kayne 1981 : 363)

Kayne further claims that there can be an amalgamation of two verbs into one constituent in French, and he proposes another reanalysis rule of V -- V. French, he claims, does not have a reanalysis rule of V (X) P (the amalgamation of the V and the P into one constituent, where X is an optional NP), which English does have.

Kayne further notes that in French, P assigns oblique case in the base, while V assigns objective case elsewhere than in the base (Kayne 1981 : 363), and he suggests that reanalysis between two lexical categories may only be possible if they assign case in the same way (Kayne 1981 : 363). His conclusion is that the difference between French and English, with reference to preposition-stranding, is that while P and V do not govern in the same way in French, they do in English, as P can govern structurally like V does. Thus two categories may be amalgamated into one constituent only when they govern in the same way.

2.6. PREPOSITION-STRANDING IN FRENCH.

This does not mean, however, that there is no form of stranding whatsoever in French. In the Québécois French dialect in particular, and to some extent in some Continental French dialects, there is evidence of stranding, especially with the prepositions 'avec' and 'pour'. Vinet (1979) attempts to outline when a preposition may or may not be stranded in colloquial French. Though most of her data are from the Québécois dialect, she claims that the following structures are also acceptable in other dialects of colloquial French around the world. Preposition-stranding, she claims, is acceptable when:

1. An intransitive preposition appears at the end of a sentence. For example:

La fille que je suis sorti avec
(The girl that I went out with)

Les gens que tu travailles pour
(The people that you work for)

(Vinet 1979 : 109)

2. An intransitive preposition appears at the end of clefts and topicalized structures. For example:

C'est lui que j'aime parler avec
(It is him that I like to talk with)

(Vinet 1979 : 111)

Preposition-stranding is, however, not acceptable in Root Wh-movement question forms and in indirect question forms, as noted by Vinet. For example:

1. * qui sors-tu avec?
   * qui tu sors avec?
   (who are you going out with?)
   avec qui que tu sors?
   (with whom are you going out?)

2. * qu'est-il parti avec?
   * quoi il est parti avec?
   (what did he go away with?)

3. *? je me demande qui elle parle avec
   (I wonder who she is talking with)

4. *? elle sait pas qui elle part avec
(she doesn't know who she is leaving with)

je ne sais pas avec qui qu'elle part
(I don't know with whom she is leaving)

(Vinet 1979 : 111)

Vinet further points out that stranding is generally not allowed for certain intransitive prepositions usually referred to as 'weak' prepositions. For example:

dans, sur, chez , vers, à, and de.

(Vinet 1979 : 114)

2.7. MARKEDNESS AND PREPOSITION-STRANDING.

The reanalysis rule of V (X) P is considered marked since it is restricted to just a few languages, and is limited to elements in the VP only. In some of the languages in which this rule operates, it is further restricted to only structures in which the V governs the PP; that is, there is no intervening phrasal category between the V and the PP. Extraction is thus allowed only from a PP governed by the V. For example:

'Who did John talk to?'

Other languages, like English, further allow extraction from a PP that is c-commanded by an NP which, in turn, is also c-commanded by the V or from a PP that is within an NP which

is c-commanded by the V. That is, there is an intervening NP between the V and the PP. For example:

'Who did John give the book to?'

Because the PP is separated from the V by an NP, this structure is more complicated syntactically and is considered more marked in relation to a structure in which the V governs the PP. It is generally believed that a language which allows extraction from a structure in which an NP intervenes between the V and the PP also allows extraction from a PP governed by the V. The converse is, however, not true. In Dutch, for instance, extraction from a PP governed by the V is acceptable while extraction from a PP that is c-commanded by an NP or is within the NP is not. Dutch will therefore permit the movement in structure (a) but not the movement in structures (b) and (c), while the three types of movements will be permitted in English:

(a)

[who [[John [did talk [to t]]]]]
 S' i S NP VP PP i

'Who did John talk to?'

(b)

[who [[John [did give [the book [to t]]]]]]
 S' i S NP VP NP PP i

'Who did John give the book to?'

NOTE : The verb <u>give</u> is subcategorized to have a PP.

(c)

[what [[John [did hit [the dog [with t]]]]]]
 S' S NP VP NP PP i

'What did John hit the dog with?'

NOTE : The PP is c-commanded by the NP, which is the direct object of the verb.

This is illustrated in the following examples in Dutch:

Waar heeft hij e mee gewerkt?

what has he e with worked

'What has he worked with?'

(e = empty category)

(Koster 1978 : 577)

Je zag een foto van iemand
You saw a picture of someone

* Wie zag je een foto van e ?
who saw you a picture of e ?
'Who did you see a picture of?'

Je wantrouwt de kwaliteit van het hout van een schip.
You suspect the quality of the wood of a ship.

* Welk schip wantrouw je de kwaliteit van het hout van e ?
which ship suspect you the quality of the wood of e ?
'Which ship do you suspect the quality of the wood of?'
(e = empty category)

(Koster 1978 :573)

2.8. CONCLUSION.

On the basis of the above arguments, pied-piping is considered unmarked relative to preposition-stranding which is considered marked. Pied-piping does not violate any universal constraint and is present in almost every language that allows movement rules. Preposition-stranding is made possible by the application of a marked rule of syntactic reanalysis, which is in operation in only a few languages. Extraction from a PP governed by the V is further considered less marked than extraction from a PP separated from the V by an NP, whichis believed to be the most marked and is claimed to be the least frequent and very language-specific.

Ideally then, if one should apply the theory of Markedness to L2 acquisition, the L2 learner's acquisition of the pied-piping structure should be easier and earlier than his acquisition of the preposition-stranding structure. He should further encounter more difficulty producing the structure of extraction from a PP c-commanded by an NP or from a PP within an NP, than producing the structure of extraction from a PP governed by the V. The theory further predicts that there will be a stage during L2 acquisition when the learner will have pied-piping in his Interlanguage (IL) but not preposition-stranding. He will later have the structure of extraction from a PP governed by the V in his IL, and, finally, as he becomes more proficient in L2. he will be able to produce the structure of extraction from a PP c-commanded by an NP or from a PP that is within an NP.

One of the predictions of the MDH is that:

> Those areas of the target language which differ from the native language and are more marked than the native language will be difficult.
>
> (Eckman 1977 : 321)

Preposition-stranding is generally unacceptable in French while it is acceptable in English, but is considered marked relative to pied-piping. The hypothesis therefore predicts that native Francophones (who have been exposed to the unmarked form - pied-piping - in their L1) are likely to encounter difficulty producing the marked form - preposition-stranding - in English.

A problem, however, with this hypothesis is that the unmarked form is used less frequently than the marked form in English. Preposition-stranding is considered marked as a result of cross-linguistic rarity, but this does not correlate with its frequency in English compared to the use of pied-piping which, though unmarked, is very unproductive and has almost disappeared from spoken English. L2 learners acquiring English in an informal setting will very likely be exposed to data with preposition-stranding, and that may lead to its acquisition earlier than pied-piping, contrary to the predictions of the Markedness hypothesis.

These are, then, some of the issues that need investigating to determine the real effects of the predictions of the theory of Markedness on the acquisition of pied-piping and preposition-stranding in second language acquisition; and this is the reason for my experiment which is presented in the following chapter.

CHAPTER III : THE PROJECT.

3.1. INTRODUCTION.

Given the discussions in the preceding chapters, I have set out to study whether the predictions of the Markedness theory hold for Francophones learning English as a second language. Will they encounter problems producing or processing structures containing stranded prepositions, as the theory predicts, or will there not be any problem at all, since preposition-stranding is more frequently used than pied-piping in everyday spoken English? The theory also predicts the most difficulty at the beginners level, and less difficulty as proficiency in English increases. A structure containing an intervening NP between the V and the PP is considered more marked than a structure in which the V immediately precedes the PP (i.e. the V governs the PP). The theory thus predicts more difficulty when L2 learners of English are confronted with the former structure and less difficulty with the latter. This should also be most marked at the beginners level and should be less marked with increasing proficiency.

3.2. PREVIOUS WORK.

French (1984) conducted a study in which thirty-three (33) English children were tested on their comprehension and production of pied-piping and preposition-stranding. The children were classified under three age categories:

1. 5.6 (years, month) - 4.7
2. 4.5 - 3.9
3. 3.5 - 2.11

French's data revealed no significant differences in both the comprehension and production tests. There were no significant differences both within and across age groups. She concludes that her results failed to support the claim of the Developmental Hypothesis that the unmarked form (pied-piping) is acquired before the marked form (preposition-stranding) in L1 acquisition.

Mazurkewich (1984, 1985) conducted a study on the acquisition of dative questions by native French speakers and native Inuktitut speakers. Her subjects were classified under three categories - Beginners, Intermediate and Advanced. This was a written task in which the subjects were provided with a number of declarative sentences which they were asked to change into question forms by questioning an underlined phrase. For example:

Cathy gave a book <u>to</u> <u>Kevin</u>.

Expected grammatical responses would be:

To whom did Cathy give the book? (pied-piping)
Who(m) did Cathy give the book to? (preposition-stranding)

Mazurkewich's results showed that there was a

developmental sequence towards acquiring the marked form with the subjects learning dative questions by first using the pronoun who(m) without a preposition. That is, there was no distinction made between the grammatical functions of the direct and indirect object pronouns. Mazurkewich noted that this omission of the preposition in dative questions was prominent in the responses of the subjects classified as Beginners, and there was a progressive decrease in omitting the preposition through the Intermediate and Advanced levels. She claims that her subjects later learned the unmarked form of dative questions (pied-piping) before finally learning the marked form (preposition-stranding). Mazurkewich further proposes that there is an intermediate stage in the process of the acquisition of dative questions during which L2 learners produce structures containing double prepositions; that is, the preposition is both stranded and pied-piped, as in:

to whom did she give the book to?

The French subjects produced more unmarked forms, while the Inuit subjects produced a higher percentage of marked forms than unmarked forms. Mazurkewich's conclusion is that both French and Inuit subjects acquired unmarked datives before marked ones, but the Inuit subjects produced more marked forms than their French counterparts because they (the Inuit subjects) were more advanced in their knowledge of English than the French subjects.

White (1983), however, does not completely rule out the possible influence of transfer since the results of the Inuit subjects did not support the claim of a developmental sequence. She suggests that the predominance of pied-piped prepositions in the data of the French subjects may be attributed to the fact that the pied-piped dative question form is present in their L1, and the Inuit subjects pied-piped less because such a structure is not present in their L1.

3.3. THE PILOT STUDY.

I conducted a pilot study in March/April 1987, in which six adult Francophone subjects were used. Four of the subjects had taken formal courses in English for two years or more. The other two had only twelve weeks of formal courses, but one of them was very proficient in English. The tests conducted were very similar to the tests in this study (see below). Results showed that the subjects generally produced more pied-piped prepositions than stranded prepositions. About one-third of all the stranded prepositions were produced by the single advanced subject who had only twelve weeks of formal courses in English. It is also important to note that the subject that was the least proficient in English produced a significant number of structures in which the prepositions were omitted. Because the number of subjects (six) used in the pilot study was so small, I could not use the results to make any strong

claims.

3.4. THE PRESENT STUDY.

3.4.1. SUBJECTS.

Twenty-four subjects were selected for this study. They were all adult Francophones (with ages ranging from 18 - 27 years), and were learning English as a second language at the Centre for Second Language Studies, University of Ottawa. The subjects fall under three categories as determined by the Centre as follows:

Group I : Advanced-Elementary Level (henceforth Elementary Level)

Group II : Intermediate Level (Low and High Intermediates)

Group III : Advanced Level.

Each group comprised of eight subjects.

3.4.2. THE TESTS.

The English sentences used in this study were judged acceptable in English by native Anglophones, and the French sentences were provided by an adult Francophone, and judged acceptable by other native speakers, though some had reservations on the grammaticality of the sentences with stranded prepositions. The number of prepositions used in the experiment was limited to five - at, to, on, for, with. (The last two were included as their translation equivalents may be stranded in colloquial French under certain

circumstances.)

The sentences used were mainly of four types:

1. Sentences with extraction from a PP governed by the V (this term will used throughout the thesis to identify those prepositional phrases that are strictly subcategorized by the verb). For example:

PIED-PIPING (P/P) : To whom is Peter talking?

PREPOSITION-STRANDING (P/S) : Who(m) is Peter talking to?

2. Sentences with extraction from a structure in which there is an intervening NP between the V and the PP. For example:

P/P : To whom did John give the book?

P/S : Who(m) did John give the book to?

This structure is syntactically more marked than the preceding structure as far as movement involving the preposition is concerned.

3. Sentences with verbs that together with a preposition may constitute a semantic unit and could be reanalyzed as complex verbs, such as: work for, rely on. For example:

P/P : This is the professor for whom he is working.

P/S : This is the professor who(m)/that he is working for.

This is to determine whether the functioning of a verb and preposition as one semantic unit may significantly favour the use of stranded prepositions over pied-piped prepositions in sentences they appear in.

4. Sentences with verbs that require a preposition in English but do not in French, such as: écouter : listen to, attendre : wait for. For example:

P/P : For whom are we waiting?

P/S : Who(m) are we waiting for?

This is to determine whether prepositions omitted are the result of Transfer or the fact that movement of a WH-word in a sentence containing a preposition is considered more marked in relation to movement of a WH-word in a sentence that does not contain a preposition.

These four types of sentences were present in all the tests.

There were two forms of tests : Oral and Written.

ORAL TESTS.

The oral section was divided into three parts. The first part (Completion) was a Production test that was designed to elicit responses that could be stranded or pied-piped. The example was designed so that the response stimulus did not contain a preposition whose position might have influenced the subjects' responses:

The dog bit the man.
This is the man who/that the dog bit.....

The sentences in the tests, however, contained prepositions that could be stranded or pied-piped. For example:

The boy explained the problem to the man.
P/P : This is the man to whom the boy explained the problem.
P/S : This is the man whom the boy explained the problem to.

John paid the cashier for the ring.
P/P : This is the ring for which John paid the cashier.
P/S : This is the ring that John paid the cashier for.

The second part was a Repetition test. Ten sentences (including the four types mentioned above) were heard by the subjects, and each sentence was to be repeated within ten seconds, in order that the responses would be spontaneous. Half of the total number of sentences contained pied-piped

prepositions, and the remaining half contained stranded prepositions. Here are samples of the sentences in this test:

That was the police officer whom John reported the matter to.

She is the woman whom he was waiting for.
Here is the gun with which the hunter killed the elephant.
He is the kind of person on whom we can rely.

In part three, a Comprehension test, the subjects had to make Grammatical Judgements on ten sentences containing stranded as well as pied-piped prepositions. These sentences were judged grammatical by three native Anglophones. The subjects were to determine, in their opinion, whether the sentences were (a) acceptable in English, (b) unacceptable in English, (c) they had no idea. This exercise was designed to test whether sentences with certain structures would be difficult to process within ten seconds, and thus declared ungrammatical. Sentences used in this test included the following:

To which programme is he listening?
Which bed did she put the bag on?
There is the girl at whom John was staring.

WRITTEN TESTS.

The written section, which consisted Production tests, was divided into four parts. In part I (Conjoining), the subjects were presented with five pairs of sentences and they had to join each pair to form single sentences. The objective of this test was to elicit responses that could contain either stranded or pied-piped prepositions. The example did not contain any preposition as its position might have influenced the choice of the subjects:

This is the man. The dog bit the man.
This is the man whom/that the dog bit.....

Samples from this test are as follows:

This is the chair. The boy is sitting on the chair.
P/P : This is the chair on which the boy is sitting.
P/S : This is the chair which/that the boy is sitting on.

Here is the cloth. The boy is washing the car with the cloth.
P/P : Here is the cloth with which the boy is washing the car.
P/S : Here is the cloth which/that the boy is washing the car with.

In part II (Rearrangement), the subjects were presented with five sentences in which the words had been jumbled up.

The sentences contained prepositions which could be stranded or pied-piped. The subjects were to rearrange the words to form questions. This was to determine whether the subjects were inclined to strand or pied-pipe prepositions in indirect questions. The example for this test did not contain any preposition as its location might have influenced the responses of the subjects:

she where going is?

where is she going?

Samples from the test include the following:

did party throw a whom they for?

P/P : For whom did they throw a party?

P/S : Whom did they throw a party for?

conclusion they which did at arrive?

P/P : At which conclusion did they arrive?

P/S : Which conclusion did they arrive at?

Part III (Questions and Answers), was also designed to elicit responses that could contain pied-piped or stranded prepositions. Subjects were presented with general questions for which they had to provide answers that should contain prepositions. For example:

Which radio station do you listen to often?

P/P : The radio station to which I listen often is CHEZ 106 FM.

P/S : The radio station that I listen to often is CHEZ 106 FM.

Which newspaper or magazine do you rely on most in Canada?

P/P : The newspaper on which I rely most is The Citizen.

P/S : The newspaper that I rely on most is The Citizen.

Part IV was a Translation exercise. Subjects were presented with ten sentences in French, containing prepositions, which they had to translate into English. In the English translation the prepositions could be stranded or pied-piped. For example:

Le professeur qu'il travaille pour s'appelle Stephan.

P/P : The professor for whom he works is called Stephan.

P/S : The professor that he works for is called Stephan.

Voici le baton avec lequel Pierre a battu le chien.

P/P : Here is the stick with which Peter hit the dog.

P/S : Here is the stick that/which Peter hit the dog with.

In all the written tests and also in the first oral test, the subjects had to produce responses which, ideally, should contain prepositions that could be pied-piped or stranded. These tests have thus been classified as Production tests.

The second oral test was a Repetition test and the third oral test was a Comprehension test, since the subjects had to understand the meanings of the sentences before making grammatical judgements on them. The results of these tests and the subsequent discussion are presented in chapters IV and V respectively.

CHAPTER IV : RESULTS.

4.1. INTRODUCTION.

According to the predictions of the theory of Markedness and the Markedness Differential Hypothesis, Francophones should experience less problems with structures containing pied-piped prepositions. The degree of difficulty should increase if the preposition is stranded, and the difficulty should be more marked if there is an intervening NP between the Verb (V) and the Prepositional Phrase (PP), and relatively less marked if the PP is governed by the V. The theory further predicts that the degree of difficulty should decrease with increasing proficiency in English. Ideally, therefore, the data for the Elementary subjects should contain a predominance of pied-piping, and less stranding, especially when an NP intervenes between the V and the PP. The occurrence of stranded prepositions should increase at the Intermediate Level, and the highest number of stranding should occur at the Advanced Level.

There was a total of seven (7) tests. I have classified all four of the written tests plus the first oral test (Completion) as Production Tests since the subjects were expected to produce responses with prepositions that could be stranded or pied-piped. The second oral test was a Repetition Test, and the third oral test was a Comprehension Test in which the subjects were expected to pass grammatical judgements on sentences in English. Some of the sentences

contained stranded prepositions and others had the prepositions pied-piped.

The Chi-square test has been done on the results of all the tests to determine whether differences were statistically significant or not.

4.2. PRODUCTION TESTS.

The responses of the subjects have been classified under the following categories:

1. Pied-piping (P/P) - when the preposition is pied-piped;

2. Preposition-stranding (P/S) - when the preposition is stranded;

3. Preposition omitted (P/O) - when the preposition is omitted;

4. Double prepositions (D/P) - when two prepositions are produced, i.e. both pied-piping and stranding, as in:

This is the girl with whom he has decided to go out with.

5. Wrong Response (W/R) - this includes all no responses and the attempted responses that are wrong.

The differences in the Production Tests correlated with levels of proficiency were statistically significant ($p < 0.001$). Below is a tabulation of the Observed Frequencies

(F) of the different variables and their corresponding percentages (table 1).

Table 4.2.a

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	12	5.0	26	10.83	64	26.67	102	14.17
P/S	51	21.25	101	42.08	115	47.92	267	37.08
P/O	74	30.83	58	24.17	31	12.92	163	22.64
D/P	-	-	7	2.92	10	4.17	17	2.36
W/R	103	42.92	48	20.0	20	8.33	171	23.75
TTL	240		240		240		720	

There was a marked decrease in the number of wrong responses, corresponding to increasing proficiency in English. A total of 42.92% of the responses at the Elementary Level were wrong. This was more than twice that at the Intermediate Level (20%), whose wrong responses also more than doubled those at the Advanced Level (8.33%). This was expected as the Elementary subjects (the least proficient) had the most difficulty with English relative clauses containing prepositions, which are considered more marked than relative clauses without prepositions. This

difficulty became less marked as proficiency in English increased.

Significant increases were also recorded in the production of both stranded and pied-piped prepositions, corresponding to increasing levels of proficiency. However, contrary to the predictions of the Markedness Hypothesis, the total percentage of strandings produced - 37.07% - was was much much higher than that of of pied-pipings -14.17%. It is also important to note that the decreasing number of wrong responses with with increasing proficiency was made up for by a noticeable increase in the production of pied-piped prepositions than stranded prepositions, contrary to what one might have expected (see fig. 4.2.a). Though each level produced more stranding than pied-piping, the difference was most conspicuous at the Elementary Level, and became less conspicuous with increasing levels of proficiency. The Elementary subjects produced over four times more stranding than pied-piping. The Intermediate subjects produced over three times but less than four times more stranding than pied-piping, while the Advanced subjects produced less than twice more stranding than pied-piping.

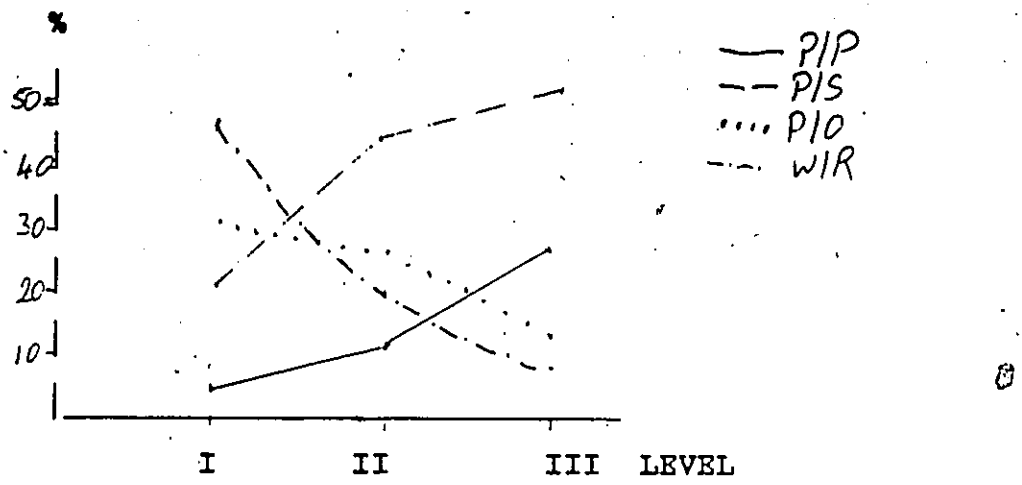
The production of pied-piping at the Intermediate Level was about twice that produced at the Elementary Level, while the amount produced at the Advanced Level was about two and a half times that produced at the Intermediate Level. Over 62% of the total number of pied-pipings was recorded at the

Advanced Level compared to 43% of stranding.

As Mazurkewich(1984, 1985) predicted, the Elementary subjects omitted the highest number of prepositions (30.83%). This was higher than their correct responses for both pied-piping and preposition-stranding. It was also higher than that produced at the Intermediate Level (24.17%), and there was a sharp decline at the Advanced Level where only 12.92% was recorded.

Mazurkewich also suggested an intermediate stage in the acquisition of prepositions in English, during which subjects produce double prepositions (i.e. both pied-piping and preposition-stranding). There was no occurrence of this at the Elementary Level, while the Intermediate and Advanced subjects produced seven (7) and ten (10) double prepositions respectively. However, the occurrence of double prepositions was so few (accounting for only 2.36% of the total number of responses) that they were probably the effects of performance factor rather than the results of a stage or level being attained. This could be supported by the fact that native speakers of English sometimes make this mistake in speech. The following percentage graph (fig. 4.2.) shows the degree of increases and decreases of the different variables among the three levels.

Figure 4.2.



In the Production Tests, 77 out of a total number of 432 responses (17.82%) for structures in which the PP is governed by the V (henceforth V-PP structure) were wrong. This was almost half of that recorded in structures that had NPs intervening between the V and the PP (henceforth V-NP-PP structure), where 94 out of a total number of 288 responses (32.64%) were wrong.

There was a higher percentage of correct responses for the V-PP structure than for the V-NP-PP structure. The percentage of stranded prepositions for the former structure - 47.69% - was higher than that for the latter structure - 21.18%. There was, however, a higher percentage of pied-piping for the V-NP-PP structure - 19.1% - compared to 10.88% for the V-PP structure.

A higher percentage of prepositions were omitted in more marked structures (V-NP-PP) - 25.35% - as they were more

difficult to process, compared to 20.83% omitted for sentences with the V-PP structure.

These statistics are presented in table 4.2.b.

Table 4.2.b

	V-PP		V-NP-PP		TOTAL	
	F	%	F	%	TTL	%
P/P	47	10.88	55	19.1	102	14.17
P/S	206	47.69	61	21.18	267	37.08
P/O	90	20.83	73	25.35	163	22.64
D/P	12	2.78	5	1.74	17	2.36
W/R	77	17.82	94	32.64	171	23.75
	432		288		720	

4.2.1. COMPLETION (ORAL TEST I).

In this test, differences in the responses among the three levels were statistically significant ($p < 0.001$). See table 4.2.1.a. for results.

Table 4.2.1.a

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	-	-	1	2.5	6	15.0	7	5.83
P/S	1	2.5	6	15.0	13	32.5	20	16.67
P/O	11	27.5	19	47.5	8	20.0	38	31.67
D/P	-	-	2	5.0	1	2.5	3	2.5
W/R	28	70.0	12	30.0	12	30.0	52	43.33
	40		40		40		120	

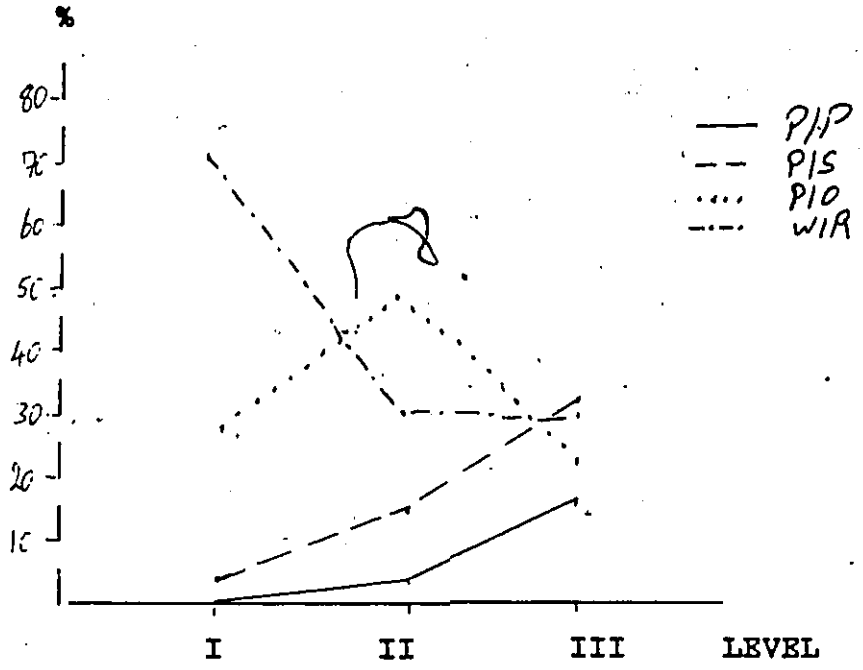
The most striking factor about the data at the Elementary Level was that 70% of their responses were wrong. This sharply decreased to 30% at both the Intermediate and Advanced Levels. The fairly high percentage of wrong responses was not too surprising as this was an oral test, and the subjects did not have a lot of time to produce a response.

No pied-piping was produced at the Elementary Level and only 2.5% and 15% were recorded at the Intermediate and Advanced Levels respectively. Again the increase in the percentages of pied-piping as levels of proficiency increased was very significant, with 88% of the total number of pied-pipings being recorded at the Advanced Level. On the other hand, the increase in the use of stranded prepositions was more gradual, with the least being produced at the Elementary Level and the most being produced at the Advanced Level (see fig 4.2.1.). The production of preposition-stranding was significantly higher than that of pied-piping, with each level producing more stranded than pied-piped prepositions.

The highest number of omitted prepositions was recorded at the Intermediate Level (47.5%) compared to 27.5% at the Elementary Level and 20% at the Advanced Level. One might have expected the Elementary subjects (the least proficient) to have omitted the highest number of prepositions. However the number of wrong responses they produced was so high that even though the prepositions were omitted in almost all of their remaining responses, the number was still less than those omitted by the Intermediate subjects, who produced a significantly lower number of wrong responses. The Advanced subjects omitted the fewest number of prepositions as their correct responses were much higher than the correct responses of the other levels. The only three cases of double prepositions were recorded at the Intermediate Level

(2) and the Advanced Level (1). See figure 4.2.1.

Figure 4.2.1.



Differences in the responses were also significant with regards to sentences with V-PP structure and V-NP-PP structure (table 4.2.1.b).

Table 4.2.1.b

	V-PP		V-NP-PP		TOTAL	
	F	%	F	%	TTL	%
P/P	2	4.17	5	6.94	7	5.84
P/S	11	22.92	9	12.5	20	16.67
P/O	21	43.75	17	23.61	38	31.67
D/P	2	4.17	1	1.39	3	2.5
W/R	12	25.0	40	55.56	52	43.33
	48		72		120	

55.56% of the total number of responses for sentences with the V-NP-PP structure were wrong. This was more than twice the percentage of wrong responses for sentences with the V-PP structure. The number of correct responses decreased from 27.09% (4.17% - P/P, 22.92% - P/S) for sentences with the V-PP structure, to 19.44% (6.94% - P/P, 12.5% - P/S) for the V-NP-PP structure. As a result of the relatively low number of wrong responses for V-PP structure, more prepositions were omitted - 43.75% - compared to 23.61% for the V-NP-PP structure. More double prepositions were recorded for the V-PP structure than for the V-NP-PP structure, though the total output for both structures was very small (only 2.5%).

4.2.2. CONJOINING (WRITTEN TEST I).

Differences in this test were statistically significant with regards to levels of proficiency ($p < 0.001$).

Table 4.2.2.a

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	-	-	2	5.0	9	22.5	11	9.17
P/S	4	10.0	22	55.0	24	60.0	50	41.67
P/O	25	62.5	16	40.0	4	10.0	45	37.5
D/P	-	-	-	-	3	7.5	3	2.5
W/R	11	27.5	-	-	-	-	11	9.17
	40		40		40		120	

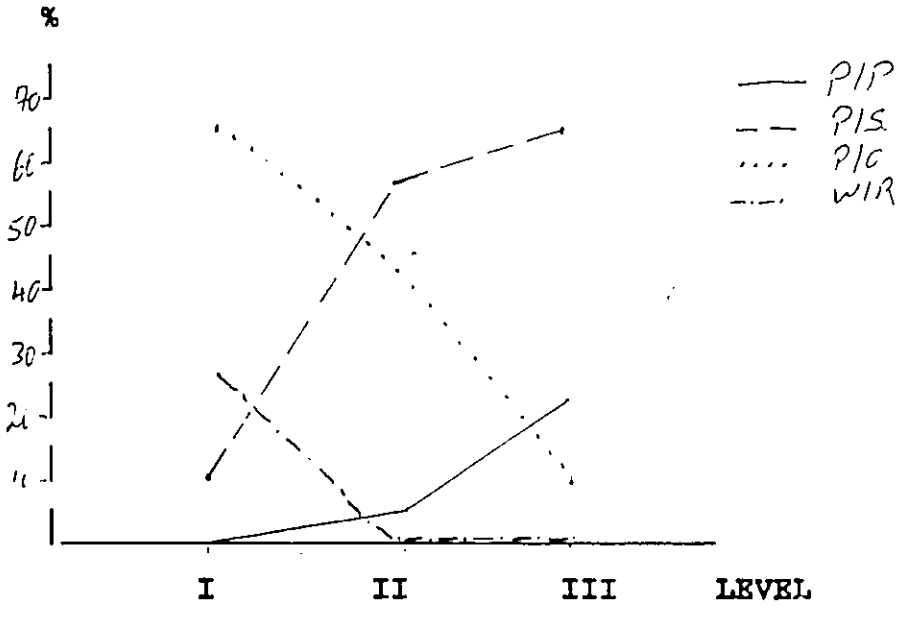
The total percentage of wrong responses was much lower than that of the Completion test. This was not surprising because as a written test the subjects had more time to decide on and review their responses. All the wrong responses were recorded at the Elementary Level. No pied-piping was recorded at this Level and the use of pied-piped prepositions increased as proficiency increased. The Intermediate subjects produced 2 (5%) prepositions that were pied-piped compared to 9 (22.5%) produced by the Advanced

subjects.

The total number of pied-pipings was also fewer than the total number of stranded prepositions, with the Elementary subjects accounting for the least and the Advanced subjects the most. The use of preposition-stranding increased fairly significantly from 10% at the Elementary Level to 55% at the Intermediate Level. Though the Advanced subjects produced to highest percentage of stranding - 60%, the increase over that produced by the Intermediate subjects was not so significant (see fig. 4.2.2).

62.5% of the responses at the Elementary Level had the prepositions omitted, compared to 40% at the Intermediate Level and down to only 10% at the Advanced Level. The Advanced subjects accounted for the only three double prepositions produced.

Figure 4.2.2.



In this test there was no significant difference between the percentages of wrong responses recorded for both V-PP and V-NP-PP structures. The percentage of correct responses for the V-PP structure - 56.95% - was somewhat higher than that for the V-NP-PP structure - 41.66%, with the V-PP structure recording 51.39% and 5.56%, and the V-NP-PP structure recording 27.08% and 14.58% for stranded and pied-piped prepositions respectively. As a result, fewer prepositions were omitted in sentences with the V-PP structure (30.56%), the less marked, than in sentences with the V-NP-PP structure (47.92%), which is considered more marked (see table 4.2.2.b).

Table 4.2.2.b

	V-PP		V-NP-PP		TOTAL	
	F	%	F	%	TTL	%
P/P	4	5.56	7	14.58	11	9.17
P/S	37	51.39	13	27.08	50	41.67
P/O	22	30.56	23	47.92	45	37.5
D/P	2	2.78	1	2.08	3	2.5
W/R	7	9.72	4	8.33	11	9.17
	72		48		120	

4.2.3. REARRANGEMENT (WRITTEN TEST II).

Responses in this test as a result of different levels of proficiency were statistically significant ($p < 0.001$). This test was more difficult than the CONJOINING Test because the subjects had to construct grammatical sentences out of meaningless strings of words. See table 4.2.3.a for results.

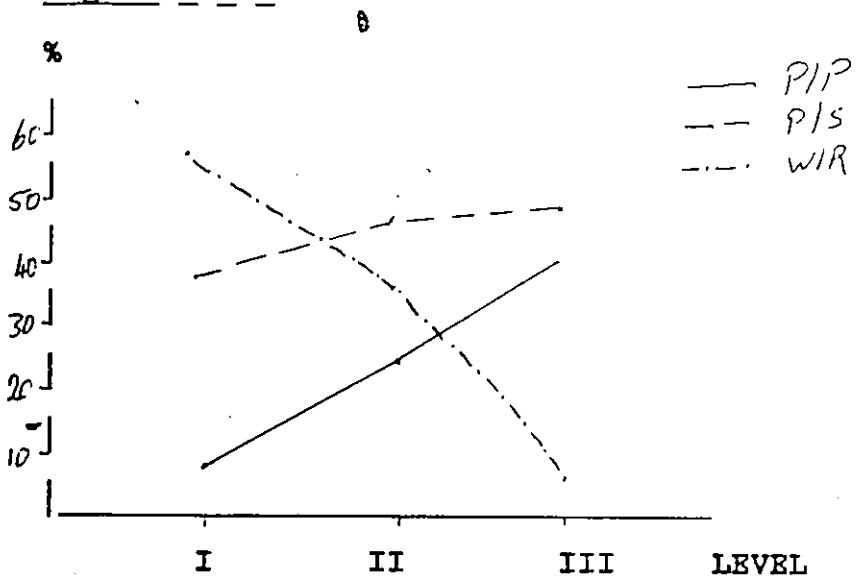
Table 4.2.3.a

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	3	7.5	9	22.5	16	40.0	28	23.33
P/S	15	37.5	18	45.0	19	47.5	52	43.33
D/P	-	-	-	-	3	7.5	3	2.5
W/R	22	55.0	13	32.5	2	5.0	37	30.83
	40		40		40		120	

As a result of this difficulty, 30.83% of the total number of responses were wrong. The highest percentage of wrong responses was recorded at the Elementary Level - 55%, followed by the Intermediate Level with 32.5% - which is almost the same as the average responses for all the groups (30.83%) - and only 5% at the Advanced Level.

Generally more stranded prepositions (43.33%) were recorded than pied-piped prepositions (23.33%). The Elementary subjects produced the least numbers of both stranded and pied-piped prepositions, followed by the Intermediate and Advanced subjects respectively. However, the increase in the use of pied-piping was more pronounced than the increase in the use of preposition-stranding (see fig. 4). The Elementary subjects pied-piped the prepositions in 7.5% of their responses. This increased sharply to 22.5% at the Intermediate Level and 40% at the Advanced Level. The increase in the use of stranded prepositions was slight - from 37.5% at the Elementary Level to 45% at the Intermediate Level and 47.5% at the Advanced Level. No prepositions were omitted and the only three occurrences of double prepositions were recorded at the Advanced Level (see fig. 4.2.3.)

Figure 4.2.3.



The percentage of correct responses sharply declined from 81.41% for the V-PP structure to 54.17% for the V-NP-PP structure. The percentage of stranded prepositions for the V-PP structure (70.83%) was higher than that for pied-piping (14.58%), while the V-NP-PP structure recorded 25% and 29.17% of stranded and pied-piped prepositions respectively.

The percentage of wrong responses was almost three times higher for the V-NP-PP structure (41.67%) - the more marked - than that for the V-PP structure (14.58%) - the less marked (see table 4.2.3:b).

Table 4.2.3.b

	V-PP		V-NP-PP		TOTAL	
	F	%	F	%	TTL	%
P/P	7	14.58	21	29.17	28	23.33
P/S	34	70.83	18	25.0	52	43.33
D/P	-	-	3	4.17	3	2.5
W/R	7	14.58	30	41.67	37	30.83
	48		72		120	

4.2.4. QUESTIONS AND ANSWERS (WRITTEN TEST III).

Responses in this test as a result of differences in levels of proficiency were statistically significant ($p < 0.01$). This test was different from the other Production tests in that all the stimulus questions contained stranded prepositions which could have influenced the decisions of the subjects in determining the place of the preposition. Secondly only sentences with the V-PP structure were used in the test.

Table 4.2.4.

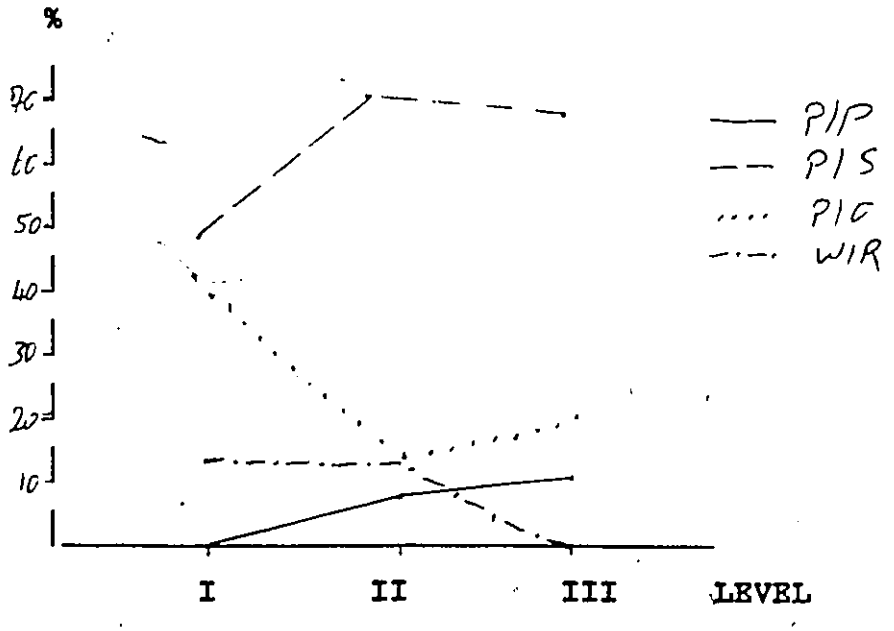
	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	-	-	3	7.5	4	10.0	7	5.83
P/S	19	47.5	27	67.5	26	65.0	72	60.0
P/O	16	40.0	5	12.5	8	20.0	29	24.17
D/P	-	-	-	-	2	5.0	2	1.67
W/R	5	12.5	5	12.5	-	-	10	8.33
	40		40		40		120	

As was expected, given the nature of the test material, the total percentage of pied-piping was very low - 5.83% - compared to 60% of preposition-stranding. At the Elementary

Level, no pied-piping was recorded, compared to 19% of preposition-stranding at that same level. The percentages increased to 7.5% and 67.5% at the Intermediate Level for pied-piping and preposition-stranding respectively. The percentage of pied-piping increased to 10% at the Advanced Level, while there was a decrease in preposition-stranding to 65%.

The highest number of omitted prepositions was recorded at the Elementary Level (40%), compared to 12.5% and 20% at the Intermediate and Advanced Levels respectively. The Advanced subjects omitted more prepositions than the Intermediate subjects since they did not produce any wrong response. 5% of the responses at the Intermediate Level as well as at the Elementary Level were wrong. The two cases of double prepositions were accounted for by the Advanced subjects.

Figure 4.2.4.



4.2.5. TRANSLATION (WRITTEN TEST IV).

If one had expected a predominance of preposition-stranding in the preceding test, then pied-piping should dominate the responses in this test, given the nature of the test materials. Out of a total of ten stimulus sentences, eight contained prepositions that were pied-piped compared to only two which contained stranded prepositions.

Table 4.2.5.a

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	9	11.25	11	13.25	29	36.25	49	20.42
P/S	12	15.0	28	35.0	33	41.25	73	30.42
P/O	22	27.5	18	22.5	11	13.75	51	21.25
D/P	-	-	5	6.25	1	1.25	6	2.5
W/R	37	46.25	18	22.5	6	7.5	61	25.42
	80		80		80		240	

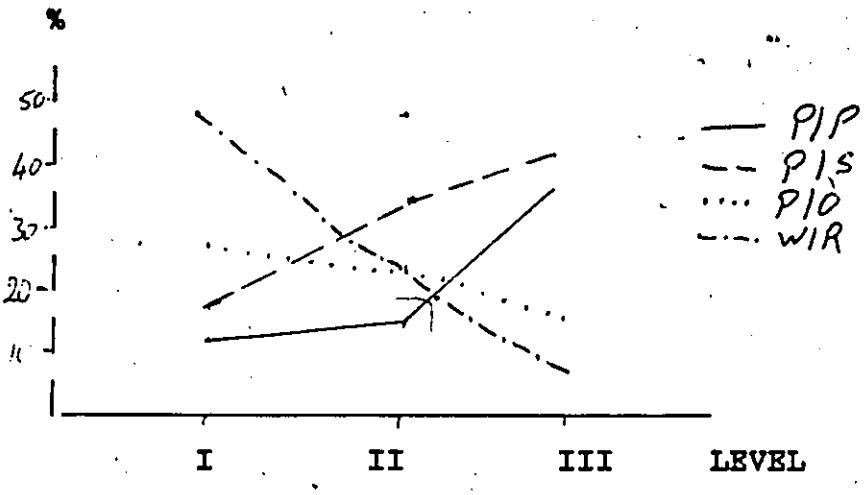
The percentage of pied-piping - 20.42% - was generally high, but was still lower than the percentage of pied-piping in the Rearrangement test - 23.33%, which did not have stimulus sentences that contained pied-piped prepositions. In the Translation test, the percentage of preposition-

stranding - 30.42% - was still higher than that of pied-piping. The Elementary subjects produced the lowest percentage of pied-piping - 11.25% - though this was the highest they produced in all the Production tests. The production of pied-piping increased to 13.75% at the Intermediate Level, and up to 36.25% at the Advanced Level. The increase of preposition-stranding from 15% at the Elementary Level to 35% at the Intermediate Level was fairly pronounced. This is probably the result of an increase in the use of pied-piping in this test by the Elementary subjects. The use of stranded prepositions increased slightly at the Advanced Level to 41.25%.

The Elementary subjects produced a fairly high percentage of wrong responses - 46.25% - which might be partly due to their limited English vocabulary. This was down to 22.5% at the Intermediate Level and only 7.5% at the Advanced Level.

In 27.5% of their responses, the Elementary subjects omitted the prepositions, and there was a gradual decrease to 22.5% and 13.75% at the Intermediate and Advanced Levels respectively. Only 6 double prepositions (2.5% of the total number of responses) were recorded, 5 at the Intermediate Level and 1 at the Advanced Level. The Elementary subjects did not produce any double prepositions.

Figure 4.2.5.



As in the other tests, the total percentage of correct responses in sentences with the V-PP structure - 54.86% - was higher than that for the V-NP-PP structure - 44.8%, though the latter structure recorded more pied-piped than stranded prepositions. The V-PP structure recorded 36.11% and 29.4% while the V-NP-PP structure recorded 21.88% and 22.92% of stranded and pied-piped prepositions respectively. More prepositions were also omitted in more marked structures - 34.36% - compared to 30.6% in less marked structures. The 6 double prepositions recorded were in sentences with the V-PP structure. Unlike the results of the other tests, the percentage of wrong responses for sentences with the V-PP structure was higher than that for sentences with the V-NP-PP structure (see table 4.2.5.b). One should not however rule out the possible influence of vocabulary problems as one factor responsible for the production of wrong responses.

Table 4.2.5.b

	V-PP		V-NP-PP		TOTAL	
	F	%	F	%	TTL	%
P/P	27	18.75	22	22.92	49	20.42
P/S	52	36.11	21	21.88	73	30.17
P/O	18	12.5	33	34.36	51	21.25
D/P	6	4.17	-	-	6	2.5
W/R	41	28.47	20	20.83	61	25.42
	144		96		240	

4.3. COMPREHENSION TEST : GRAMMATICAL JUDGEMENT (ORAL TEST III).

This was a listening and comprehension test in which the subjects had to determine whether the sentences they heard in English were grammatical, ungrammatical, or whether they had no idea. Since this was an oral test, the subjects had limited time to respond to the stimulus sentences. Because all the sentences were grammatical, I have classified those judged ungrammatical as well as those the subjects had no idea about as wrong responses, because the correct response for all the sentences should be grammatical. Unfortunately, there were no significant differences in the responses of the three groups and neither could any trend or pattern be

determined (see table 4.3.a).

Table 4.3.a

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
cor P/P	17	21.25	28	35.0	24	30.0	69	28.75
cor P/S	22	27.5	20	25.0	23	28.75	65	27.08
wrg P/P	23	35.0	12	15.0	16	20.0	51	21.25
wrg P/S	18	22.5	20	25.0	17	21.25	55	22.92
	80		80		80		240	

My conclusion for this result is that the subjects were of the impression that some of the sentences were grammatical and some were not. Because it was an oral test, they did not have enough time to analyse each sentence and come up with a response within ten seconds. I conclude that their responses were sometimes arbitrary.

This conclusion is reinforced by the figures obtained for sentences with the V-PP structure and the V-NP-PP structure (see table 4.3.b).

Table 4.3.b

	V-PP		V-NP-PP		TOTAL	
	F	%	F	%	TTL	%
cor P/P	21	17.5	48	40.0	69	28.75
cor P/S	31	25.83	34	28.33	65	27.08
wrg P/P	27	22.5	24	20.0	51	21.25
wrg P/S	41	34.17	14	11.67	55	22.92
	120		120		240	

Contrary to what one would have expected, the percentage of correct responses for sentences with the V-PP structure was lower than that recorded for sentences with the V-NP-PP structure, for both pied-piping and preposition-stranding. The percentage of wrong responses for sentences with the V-PP structure was surprisingly higher than that for sentences with the V-NP-PP structure.

The results of this Comprehension test were therefore inconclusive.

4.4. REPETITION (ORAL TEST II).

In this test, 10 sentences, some containing pied-piped prepositions and others stranded prepositions, were to be repeated by the subjects. The results are presented in table 4.4.a.

Table 4.4.a

"	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
cor P/P	10	12.5	20	25.0	30	37.5	60	25.0
cor P/S	14	17.5	26	32.5	28	35.0	68	28.33
P/O	11	13.75	9	11.25	4	5.0	24	10.0
D/P	1	1.25	5	6.25	12	15.0	18	7.5
W/R	44	55.0	18	22.5	5	6.25	67	27.92
P/P›P/S	-	-	2	2.5	1	1.25	3	1.25
	80		80		80		240	

Note : P/P›P/S - Pied-piped preposition in stimulus sentence is stranded in the response.

At the Elementary Level, 55% of the responses were wrong, and there was a marked decline as levels of proficiency increased, with the Intermediate and Advanced Levels recording 22.5% and 6.25% of wrong responses respectively.

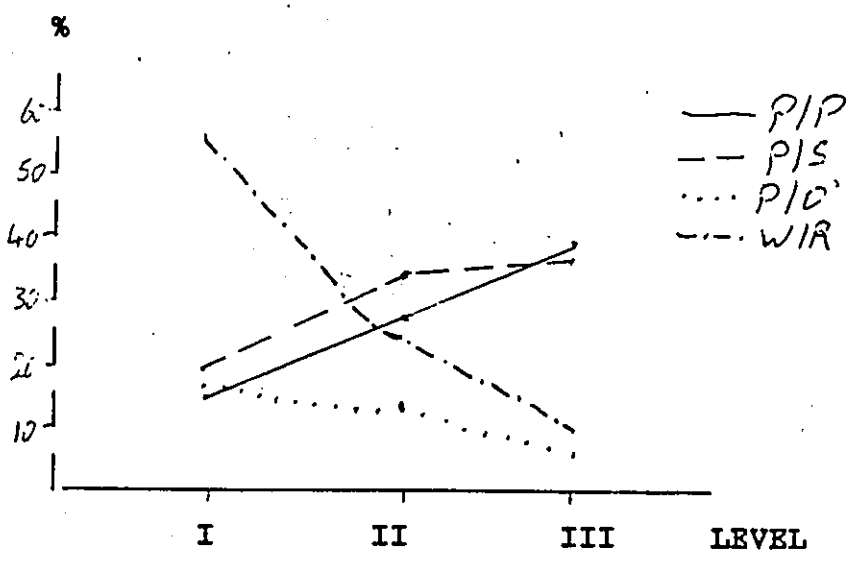
Generally more sentences with stranded prepositions (28.33%) were repeated correctly than sentences with pied-piped prepositions (25%). However, the difference between the two was much less than the differences in the Production tests. The Elementary subjects correctly repeated the fewest number of sentences with stranded as well as pied-piped prepositions, and there were corresponding increases as levels of proficiency increased. However the increase in the number of correct sentences with pied-piping was more marked than the increase for those with stranded prepositions (see fig. 4.4.). As a matter of fact, 50% of the total number of correct sentences with pied-piping were accounted for by the Advanced subjects, compared to 41.18% of the total number of correct sentences with stranded prepositions that they accounted for.

As was expected, the highest percentage of prepositions omitted was at the Elementary Level - 13.75% - compared to 11.25% and 5% at the Intermediate and Advanced Levels respectively. The highest percentage of double prepositions was recorded in this test - 7.5%. This was not surprising as this was an oral test, and native English speakers are sometimes guilty of the use of double prepositions, unconsciously, usually in speech.

There were three instances (two at the Intermediate Level and one at the Advanced Level) in which pied-piped prepositions in stimulus sentences were stranded in the

responses. There was however no occurrence of a preposition being pied-piped in a response whose stimulus sentence contained a stranded preposition. This seems to suggest that the subjects had less difficulty with, or preferred the use of stranded prepositions over pied-piped prepositions.

Figure 4.4.



There was a higher percentage of correct responses for both pied-piping and preposition-stranding for sentences with the V-PP structure than for sentences with the V-NP-PP structure. There were also more wrong responses when the sentences had the more marked structure - 37.5% - compared to only 21.53% when the sentences had the less marked structure. Higher percentages of both omitted prepositions and double prepositions were also recorded for the V-PP structure than for the V-NP-PP structure, since sentences with the V-PP structure accounted for a comparatively lower

percentage of wrong responses (see table 4.4.b).

Table 4.4.b

	V-PP		V-NP-PP		TOTAL	
	F	%	F	%	TTL	%
cor P/P	37	25.69	23	23.96	60	25.0
cor P/S	43	29.86	25	26.04	68	28.33
P/O	16	11.0	8	8.33	24	10.0
D/P	15	10.42	3	3.13	18	7.5
W/R	31	21.53	36	37.5	67	27.92
P/P?P/S	2	1.39	1	1.04	3	1.25
	144		96		240	

4.5. FURTHER OBSERVATIONS.

There was no conclusive evidence that L1 interference played an important role in determining the responses of the subjects. Even if it did, it was probably limited to the Elementary Level. As I mentioned in Chapter III, some of the verbs used in the experiment require prepositions in English but do not in French. For example: listen to : écouter, pay for : payer, wait for : attender. The theory of Transfer would predict the omission of these prepositions by Francophones learning English. In the Production tests, out of a total number of 163 prepositions omitted, only 32

were in constructions containing these verbs. (The Elementary subjects accounted for 14, and the number decreased to 12 and 7 at the Intermediate and Advanced Levels respectively). There was no such omission in the Completion test. These figures are however not significant enough to conclude that prepositions were omitted as a result of Transfer.

In English also, some verbs together with a following preposition may constitute semantic units, and such constructions are believed to favour the use of preposition-stranding over the use of pied-piping. Some of these verbs were used in the experiment. For example : Rely on, look at, arrive at, wait for, pay for. About one-third of the total number of stranding in the Production tests (84 out of 267) were in constructions containing these verbs - 38 at the Advanced Level, 33 at the Intermediate Level and 13 at the Elementary Level. This might be one of the factors responsible for the large number of strandings in the experiment.

Incidentally, a construction like wait for may constitute a semantic unit in English, but also does not have an overt preposition in French. For Francophones learning English as a second language, the theory of Transfer predicts the omission of the preposition while the fact that the construction constitutes a semantic unit predicts stranding of the preposition.

Included in the Translation test was the following sentence :

Le taxi qu'il attendait n'est pas arrivé.

P/P : The taxi for which he was waiting did not arrive.

P/S : The taxi that he was waiting for did not arrive.

Out of a possible total of 24 responses, 15 contained stranded prepositions and only 7 had the prepositions omitted. There was no stranding at the Elementary Level, while it accounted for 6 of the omitted prepositions. This could be an added reason for acknowledging the claim that verbs and prepositions that constitute semantic units may be partly responsible for the decision to strand a preposition.

CHAPTER V : DISCUSSION AND CONCLUSION.

5.1. DISCUSSION.

Across languages, the presence of preposition-stranding implies the presence of pied-piping, but not vice versa. Thus, according to Eckman's (1977) distributional definition of Markedness (see chapter I), pied-piping is unmarked and preposition-stranding is the marked alternative. Eckman further suggests that in second-language acquisition, there is the need for a procedure to be developed that should assign values to available grammars, and rank them in order of relative optimality: that is, a hierarchy of difficulty which should be universal. He proposes that the MDH is an attempt to define such a procedure. One of the predictions of this hypothesis states that:

> Those areas of the target language which differ from the native language and are more marked than the native language will be difficult.
>
> Eckman 1977 : 321)

In an ideal situation, therefore, the production and comprehension of structures with preposition-stranding, which is considered marked and is generally unacceptable in French, should be difficult for Francophones learning English as a second language. This difficulty should become less pronounced as proficiency increases.

The results of my experiment, however, reveal the opposite, not only for the experiment as a whole, but also for the individual tests. In the Production tests, the percentages of prepositions stranded were much higher than the percentages of prepositions pied-piped. In the Repetition test, however, though there was a higher percentage of stranding in the number of correct responses, the difference was not as significant as it was in the Production tests. One reason for this might be the fact that in the Production tests, the subjects had the option to strand or pied-pipe the prepositions. That is, it was a matter of preference. The decision to strand did not always imply difficulty producing constructions with pied-piped prepositions. In the Repetition test, wrong responses were probably the results of difficulty in comprehending and reproducing the sentences, and not a matter of preference. In any case, with the exception of the Grammatical Judgement test, there was generally a higher incidence of preposition-stranding than pied-piping.

The Elementary subjects were more comfortable with preposition-stranding than with pied-piping. In all the tests (excluding the Grammatical Judgement test), they recorded more correct responses with stranded prepositions than with pied-piped prepositions. In fact, in three out of the five Production tests, they did not produce any pied-piped preposition. The Intermediate subjects also accounted for more stranded than pied-piped prepositions, and so did

the Advanced subjects.

As was expected, the Elementary subjects produced the fewest number of correct responses for both pied-piping and preposition-stranding, followed by the Intermediate subjects, and finally the Advanced subjects. However, in percentage terms, the increases in the occurrence of preposition-stranding between the Intermediate and Advanced Levels were marginal in most cases. On the other hand, corresponding increases in the occurrence of pied-piping was remarkably pronounced. Thus the increases in the percentages of correct responses with pied-piping among the different levels was more significant than those recorded for preposition-stranding. Taking into consideration only the correct responses in all the levels, there was an increase in the percentages of pied-piping and a corresponding decrease in the percentages of preposition-stranding, as levels of proficiency increased (see tables and figures below). The only exceptions are the Translation and the Grammatical Judgement tests. In the Translation test, the number of correct responses for pied-piping at the Elementary Level increased probably because the stimulus sentences contained pied-piped prepositions. As I mentioned earlier, no definite pattern was observed in the Grammatical Judgement test probably because of a flaw in the research design, and its results were therefore not representative of the proficiency of the subjects. Here are tables and percentage graphs of the correct responses for the different

levels in the other tests :

Table 5.1.a PRODUCTION TESTS TOTAL

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	12	19.05	26	20.47	60	34.88	98	27.07
P/S	51	80.95	101	79.53	112	65.12	264	72.93
	63		127		172		362	

Figure 5.1.a PRODUCTION TESTS TOTAL.

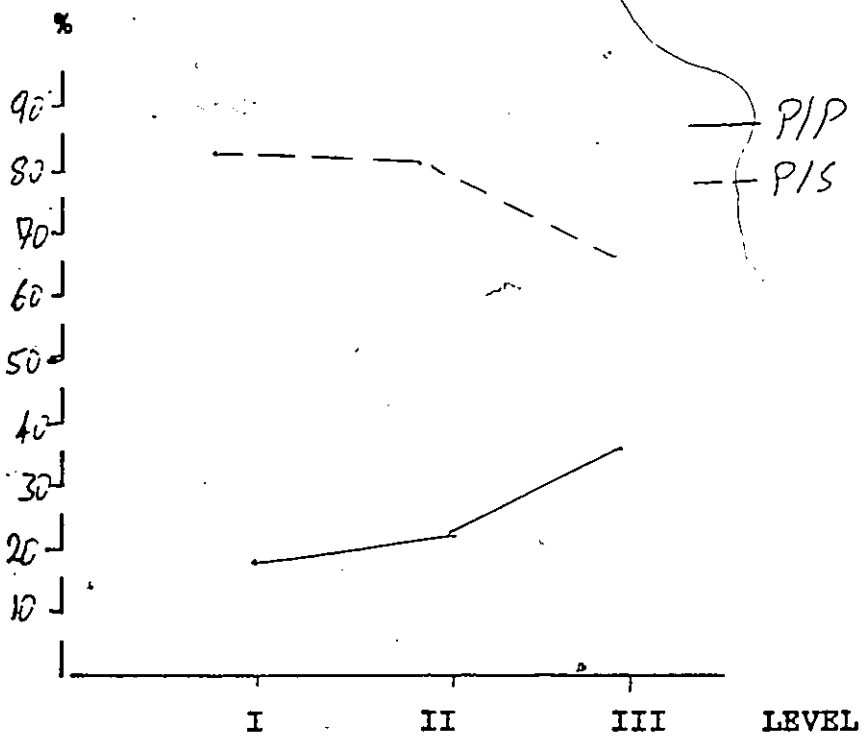


Table 5.1.b COMPLETION TEST.

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	-	_	1	14.29	2	16.67	3	15.0
P/S	1	100	6	85.71	10	83.33	17	85.0
	1		7		12		20	

Figure 5.1.b COMPLETION TEST.

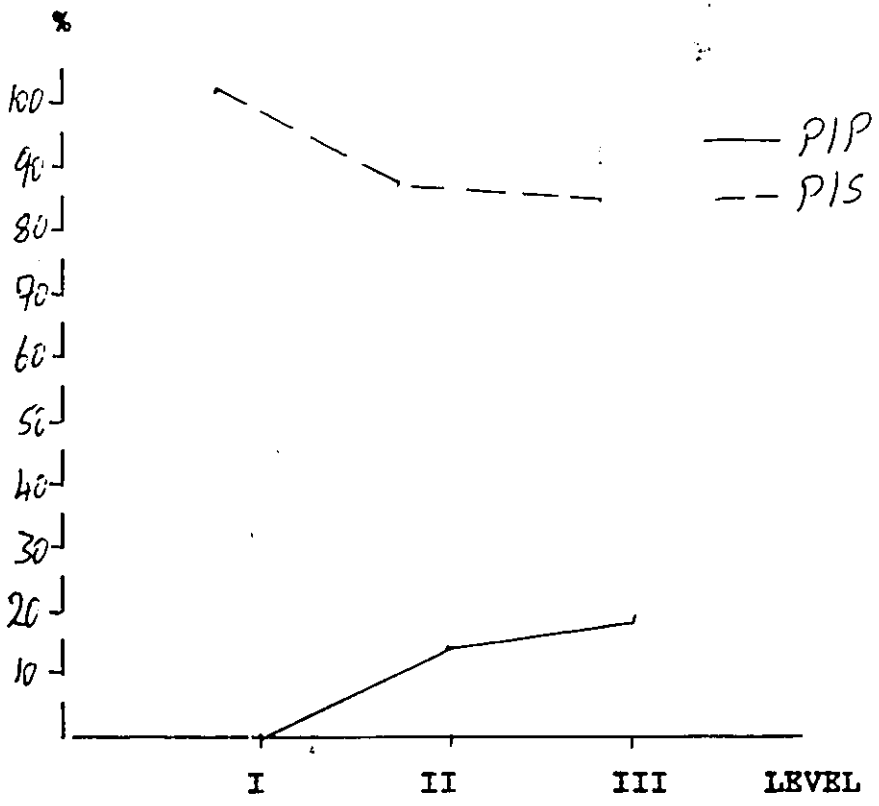


Table 5.1.c CONJOINING TEST.

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	-	-	2	8.33	9	27.27	11	18.03
P/S	4	100.0	22	91.67	24	72.73	50	81.97
	4		24		33		61	

Figure 5.1.c CONJOINING TEST.

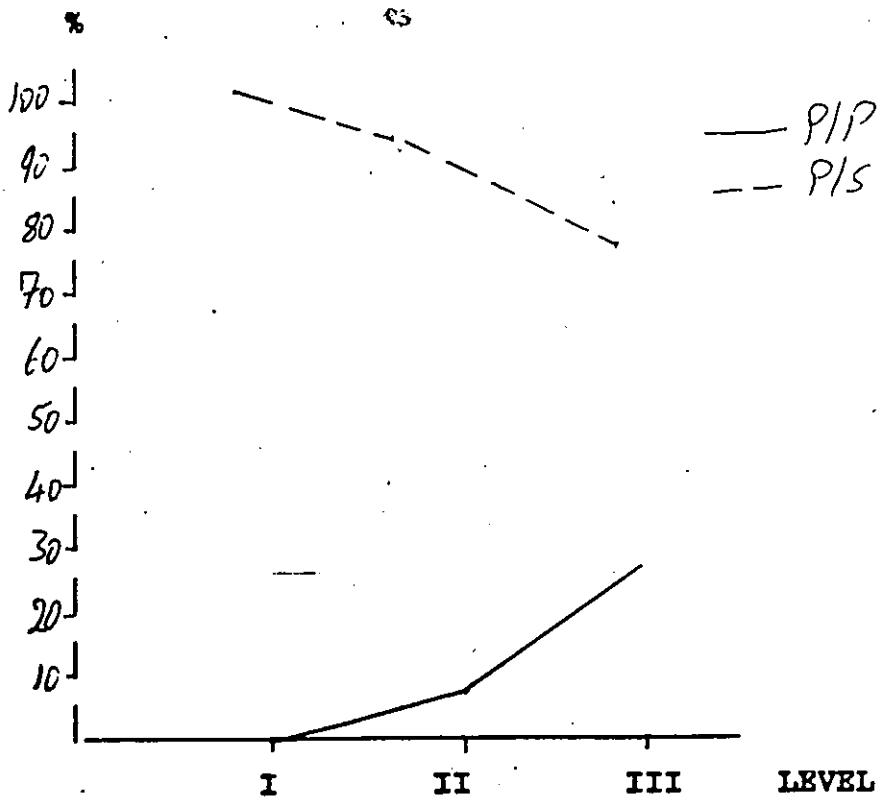


Table 5.1.d REARRANGEMENT TEST.

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	3	16.67	9	33.33	16	45.71	28	35.0
P/S	15	83.33	18	66.67	19	54.29	52	65.0
	18		27		35		80	

Figure 5.1.d REARRANGEMENT TEST.

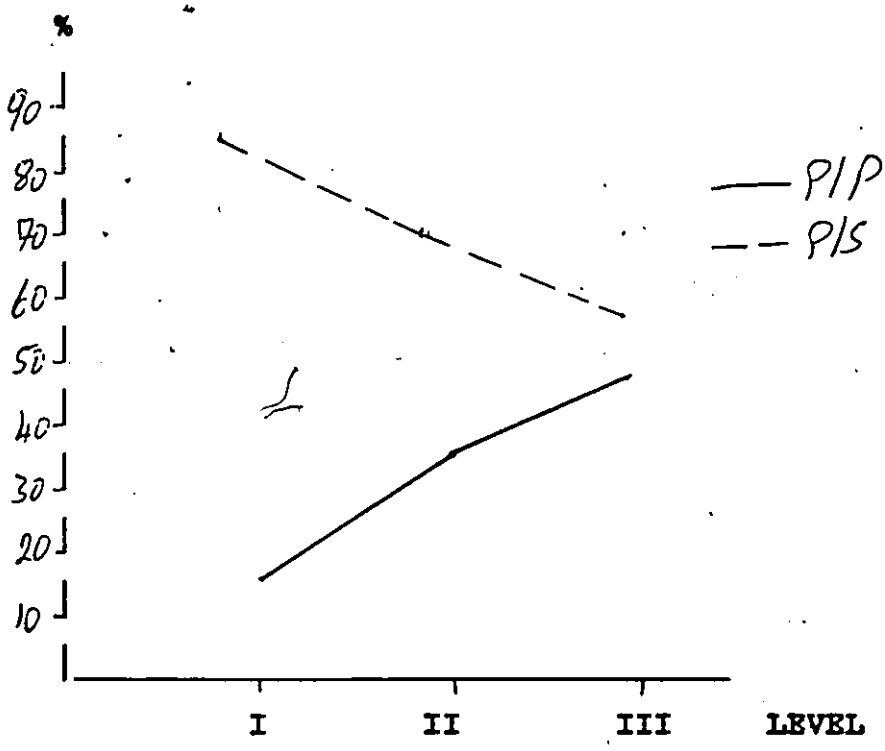


Table 5.1.e QUESTIONS AND ANSWERS.

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	-	-	3	10.0	4	13.33	7	8.86
P/S	19	100.0	27	90.0	26	86.67	72	91.14
	19		30		30		79	

Figure 5.1.e QUESTIONS AND ANSWERS.

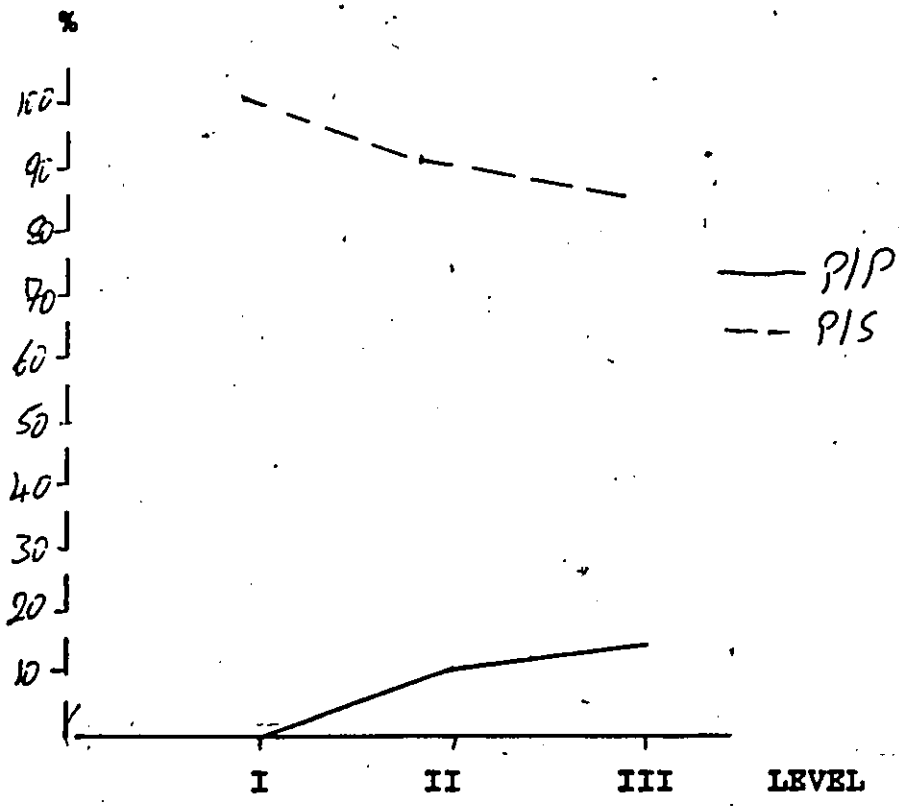


Table 5.1.f TRANSLATION.

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	9	42.86	11	28.21	29	46.77	49	40.16
P/S	12	57.14	28	71.79	33	53.23	73	59.84
	21		39		62		122	

Figure 5.1.f TRANSLATION.

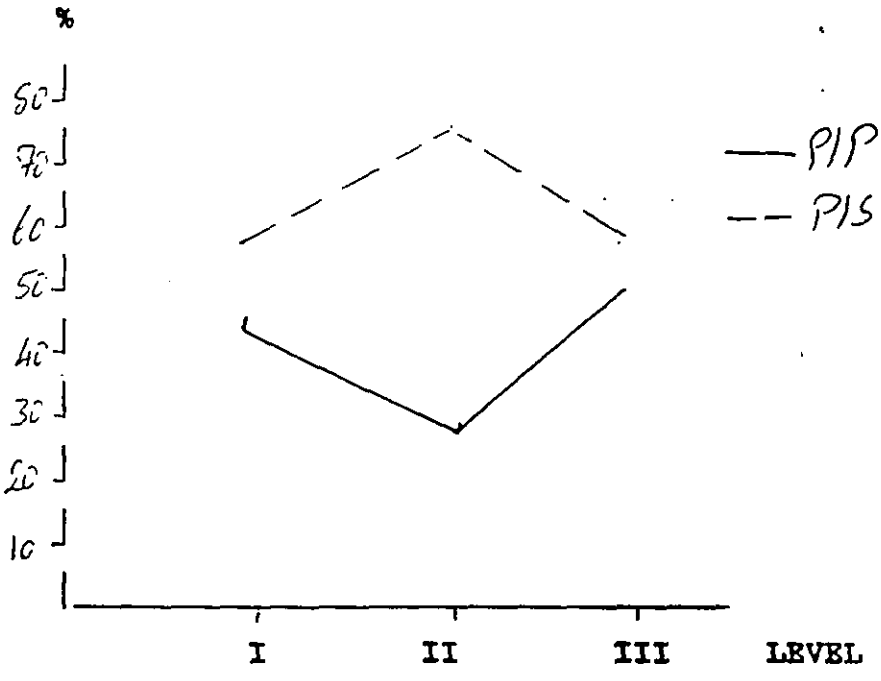
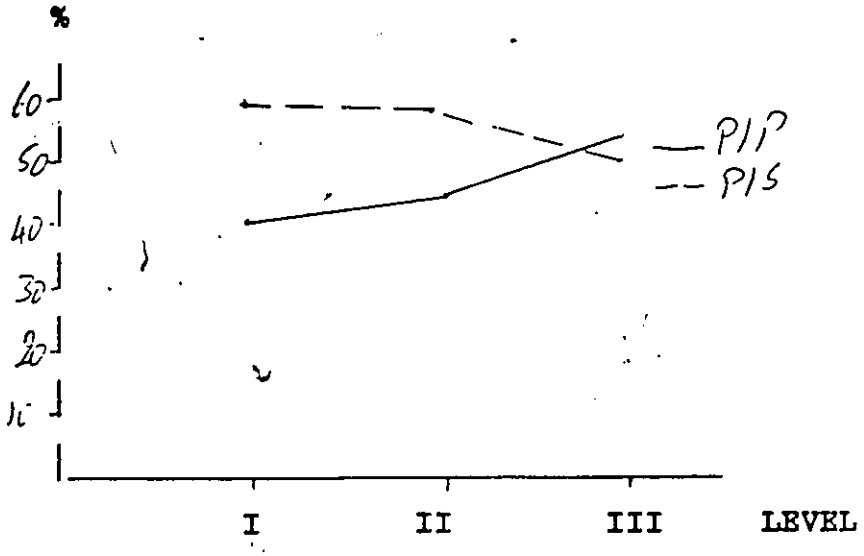


Table 5.1.g REPETITION.

	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	F	%	F	%	F	%	TTL	%
P/P	10	41.67	20	43.83	30	51.72	60	46.88
P/S	14	58.33	26	56.52	28	48.28	68	53.12
	24		46		58		128	

Figure 5.1.g



5.2. CONCLUSION.

In L1 acquisition, the Learnability Hypothesis, which conflicts with the predictions of the Developmental Hypothesis, claims that acquisition does not necessarily imply proceeding developmentally from the unmarked to the

marked form. This hypothesis suggests the probability of simultaneous realization of both the marked and the unmarked forms where both settings are present in a language (see French 1982 : 132). White, on parametric variation and second-language acquisition, also proposes that if "L1 does not have some principle activated which is required in L2, there should be no transfer.(The) L2 data will motivate the principle in question and there will be no competition from an L1 setting" (White 1984a : 7). This means that the learner will not necessarily go through the unmarked setting first as the theory of Markedness suggests.

According to the theory of UG, the child in L1 acquisition formulates hypotheses about rules governing a language based on the linguistic input received and an associated theory of Markedness. Goodluck (1986) proposes two opposing hypotheses with respect to pied-piping and preposition-stranding :

1. The RAPID PROJECTION Theory : that the child's innate knowledge of the universal principles of grammar, interacting with input data, enables him to project a grammar that conforms to the unmarked form. Such a grammar will make allowance for pied-piping even in the event of its absence in the child's linguistic input, since it will, for example, include a rule of leftward movement from subject or direct object position. Pied-piping will thus be an easy choice over preposition-stranding (Goodluck 1986 : 89).

2. The RESTRICTED INTERPRETATION Theory : that in the event of a lot of evidence of stranding and an absence of pied-piping in the child's linguistic input, he might project a grammar based, not on the "superficial" theory of cross-linguistic frequency, but rather on input frequency within the language. In such a situation, the movement involving preposition-stranding might become one of the basic rules in the child's grammar, and the acquisition of pied-piping could prove difficult for some time (Goodluck 1986 : 89 , 101).

In Goodluck's experiment, children had more difficulty with the movement of pied-piping than they had with the movement of preposition-stranding. Her results failed to support the theory of Rapid Projection.

The results of my experiment also seem to make a case for the Restricted Interpretation Theory in the case of adult L2 learners. The subjects generally preferred or had less difficulty with preposition-stranding than with pied-piping, and this difficulty became less apparent with increasing proficiency.

There are thus two conflicting principles involved in the production and comprehension of pied-piping and preposition-stranding. Across languages, pied-piping is more widespread and acceptable than preposition-stranding. Within the language (English), however, the use of preposition-

stranding is more widespread in everyday spoken English, while pied-piping is reserved for formal registers. Apparently, when there is a conflict between a language-internal and a language-external principle, the language-internal principle takes precedence in acquisition. That is, intra-linguistic frequency supersedes inter-linguistic frequency in determining what will be difficult and what will not be difficult in language acquisition; in this case, L2 acquisition.

5.3. SUGGESTIONS FOR FUTURE RESEARCH.

Further research is needed to determine what effects conflict between the Restricted Interpretation Theory (Goodluck : 1986) and the MDH may have on the predictions of the theory of Markedness. Cross-linguistic rarity or frequency is also often used as a yardstick in determining structures that are unmarked relative to a marked alternative. Maybe these do not always correspond to difficulty or simplicity in acquisition, especially if the marked form is more prevalent in the language.

Perhaps more research should also be done on whether the inclination to strand a preposition may be influenced by the types of verbs used in the constructions. Maybe there is a tendency to strand more in a construction in which the verb and the preposition constitute a semantic unit, and less if the verb is independent of the preposition.

APPENDIX.

QUESTIONAIRE.

1. What is your first language?_____

2. Do you speak any other language(s)? _____ Which?_____

3. What is the dominant language in the region where you grew up?_____

4. Which language(s) do you speak at home? _____

5. Which language are you most comfortable with?_____

6. Have you taken any formal courses in English? ____ For how long?_____

7. Have you taken formal courses in any other languages? Which and for how long?

_____

8. How long have you been exposed to English (T.V., Radio, Printed Media, friends, neighbours, etc.)?

_____

9. Have you lived in an English-speaking area? For how long?_____

10. Why would you like to speak English?

_____

11. Age (optional)? _____

12. Sex? _____

ORAL TESTS.

TEST I : COMPLETION.

Complete the following sentences :

Example : The dog bit the man.

This is the man whom/that the dog bit.....

Now do the following :

1. The boy explained the problem to the man.

   This is the man .....

2. The truck arrived at this intersection.

   This is the intersection .....

3. John paid the cashier for the ring.

   This is the ring .....

4. The boy is washing the car with a cloth.

This is the cloth .....

5. The girl is walking on the sand.

This is the sand .....

TEST II : REPETITION.

Repeat the following as accurately as you can :

1. This is the man to whom he gave the book.
2. This is the decision which they arrived at.
3. Here is the gun with which the hunter killed the elephant.
4. That was the Police Officer whom John reported the

matter to.

5. He is the kind of person on whom we can rely.
6. She is the woman whom he was waiting for.
7. This is the album at which he was looking.
8. This is the girl whom he has decided to go out with.
9. This is the bed which the child put the bag on.
10. This is the doll for which the baby was crying.

TEST III : GRAMMATICAL JUDGEMENT.

Determine whether the following sentences are acceptable in English or not :

(a) - Acceptable ; (b) - Not acceptable ; (c) - Don't know

1. To which programme is he listening?
2. This is the table on which he put the book.
3. Which student are we waiting for?
4. There is the girl at whom John was staring.
5. Which cloth did the boy wash the car with?
6. For which books do we have to pay the cashier?
7. Which bed did she put the bag on?
8. This is the picture which they are staring at.
9. With which brush did he scrub the floor?
10. Whom does he listen to?

WRITTEN TESTS.

TEST I : CONJOINING.

Join these pairs of sentences to form single sentences :

Example : This is the man. The dog bit the man.

This is the man whom/that the dog bit.....

Now do the following :

1. This is the student. The professor gave the book to the student.

_____

2. Here is the cloth. The boy is washing the car with the cloth.

_____

3. There is the statue. He is pointing at the statue.

_____

4. This is the chair. The boy is sitting on the chair.

_____

5. Here is the pen. We were looking for the pen.

_____

TEST II : REARRANGEMENT.

Rearrange the following to form questions :

1. playing what is with she?

_____

2. book give he whom to the did?

_____

3. desk which on put he did pencil the?

_____

4. conclusion they which did at arrive?

_____

5. did party throw the whom they for?

_____

TEST III : QUESTIONS AND ANSWERS.

Please provide answers for the following questions :

Example : Which country would you like to visit?

The country which/that I would like to visit is France

Now do the following :

1. Which radio programme do you listen to often?

The radio programme .....

2. Which newspaper or magazine do you rely on most in Canada?

The newspaper/magazine .....

3. Which member of the family do you go out with most?

The member of my family .....

4. Which picture do you look at frequently at home?

The picture .....

5. If you have the opportunity, which Company or Corporation would you like to work for?

The Company/Corporation .....

TEST IV : TRANSLATION.

Please translate the following into English :

1. La femme à qui John a parlé lui a indiqué la direction.

_____

2. La fille que je suis sorti avec habite à Montréal.

_____

3. Le taxi qu'il attendait n'est pas arrivé.

_____

4. Voici le bureau sur lequel il a deposé le stylo.

_____

5. L'homme que j'ai désigné du doigt est mon superviseur.

_____

6. Le professeur qu'il travaille pour s'appelle Stephan.

_____

7. Voici le baton avec lequel Pierre a battu le chien.

_____

8. La fille à qui Paul a donné l'invitation habite dans la maison voisine.

_____

9. Voici la photo sur laquelle il était mis en vedette.

_____

10. Le lit sur lequel il a mis le sac était très grand.

_____

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