

CONTRIBUTIONS
TO THE STUDY OF SPANISH VERB MORPHOPHONOLOGY

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ABSTRACT

CONTRIBUTIONS TO THE STUDY OF SPANISH VERB MORPHOPHONOLOGY

This thesis proposes an analysis that explains primarily the alternation [a-u] observed in the three irregular second conjugation verbs haber "to have", saber "to know", and caber "to fit (into)", and the alternation [p-β] observed in saber and caber. I claim that these verbs are morphophonologically related and that they constitute a subgroup of verbs with similar alternations in the present indicative, preterite indicative, and present subjunctive, which are different from those manifested by the regular verbs of the second conjugation.

The theoretical base of this study is the framework of generative phonology, specifically as proposed by Chomsky and Halle (1968). It will be enriched by taking into account three additional concepts used in phonological theory, namely GRADUAL DIFFUSION (Wang, 1969), LINEAR MODEL of applying phonological rules (Newton, 1970), and RULE SCHEMA INTERRUPTION (Foley, 1977).

The analysis is also concerned with five subsets of irregular first, second, and third conjugation verbs: a) placer

"to please" and traer "to bring"; b) poder "to be able", poner "to put", and responder "to answer"; c) querer "to want" and ver "to see"; d) hacer "to make", decir "to say", and venir "to come"; and e) andar "to walk", estar "to be", and tener "to have". The data are representative of Latin-American Spanish spoken by educated urban speakers, and are restricted to the simple verb forms in the preterite indicative. However, two kinds of data are used in relation to the second conjugation verbs placer, traer, and ver. Verb forms used by educated urban speakers which I will refer to as "Standard Data", and those forms still used by uneducated rural speakers which I will call "Relic Data". It is the purpose of this thesis to show: a) that the verbs placer, and traer are related to the three verbs haber, saber, and caber because they share the alternation [a-u] in the preterite relic forms; b) that poner, poder, and responder are also related to the same three verbs as well as to the subset (a) because of the raising of the root back vowel /o/ to [u] in the preterite indicative; c) how andar, estar, and tener which have an [u] in their preterites are related to haber, saber, and caber, and also to the subsets (a-d) mentioned above; d) that querer, ver, and venir, which manifest a front vowel [e-i] raising alternation, and hacer, decir, that have an [i] in their preterites, constitute a parallel with those verbs which show the back vowel [a-u], [o-u] alternations; and e) that the verbs mentioned in (a-d) above are linked together in terms

of shared morphophonological processes that operate gradually on various forms of the paradigms of their lexical items.

The rules of Glide Formation, Metathesis, Vowel Contraction, Vowel Reduction, and Vocalic Raising are formulated and motivated in order to account for the alternations [a-u], [o-u], and [e-i] observed in the set of irregular verbs mentioned above.

Historical and synchronic data from other Romance languages such as Portuguese, French, Italian, and Catalan are presented to support the rules, rule ordering, and underlying representations proposed in this study.

DEDICATION

to Mary, Marynés, and Maryluisa.

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CHAPTER 1

INTRODUCTION

1.1 SCOPE OF THE THESIS.

1.1.1 TOPIC TO BE COVERED.

The present thesis is a contribution to the study of Spanish verb morphophonology.

Spanish verbs are traditionally classified into three conjugations depending mainly on the theme vowel, that is, the vowel that follows the root of the verb.

First conjugation:

The present indicative of regular first conjugation verbs is illustrated in Table 1 with cantar, "to sing".

TABLE 1.

Present Indicative	Preterite Indicative
1.s. canto [kánto]	canté [kanté]
2.s. cantas [kántas]	cantaste [kantáste]
3.s. canta [kánta]	cantó [kantó]
1.p. cantamos [kantámos]	cantamos [kantámos]
3.p. cantan [kántan] ¹	cantaron [kantáron]

The root is cant and the theme vowel is a in all forms except in canto². The person-number endings are o, s, o, mos, and n respectively.

Thus, the Spanish regular first conjugation consists of those verbs whose theme vowel is a and the infinitive ending is -ar.

Second conjugation:

The present indicative of regular second conjugation verbs is illustrated in Table 2 with temer, "to fear".

TABLE 2.

Present Indicative		Preterite Indicative	
1.s.	temo [témo]	temí [temí]	
2.s.	temes [témes]	temiste [temíste]	
3.s.	teme [téme]	temió [temyó]	
1.p.	tememos [temémos]	temimos [temímos]	
3.p.	temen [témen]	temieron [temyéron]	

The root is tem and the theme vowel is e in all forms except in temo; the person-number endings are the same as in the first conjugation.

It follows that the Spanish regular second conjugation consists of those verbs whose theme vowel is e and the infinitive ending is -er.

Third conjugation:

The five forms of the present indicative of regular third conjugation verbs are illustrated in Table 3 with partir "to break".

TABLE 3.

Present Indicative		Preterite Indicative	
1.s.	parto [páрто]	partí [partí]	
2.s.	partes [pártes]	partiste [partíste]	
3.s.	parte [párte]	partió [partyó]	
1.p.	partimos [partímos]	partimos [partímos]	
3.p.	parten [párten]	partieron [partyéron]	

The root is part and the person-number endings are the same as in the first and second conjugations. Since the theme vowel alternates between stressed i and unstressed e, I assume an underlying thematic i and a phonological rule which lowers the unstressed i to e as was proposed by Harris (1969).³

Thus, the Spanish regular third conjugation consists of those verbs whose theme vowel is i and the infinitive ending is -ir.

We may reasonably assume, then,

- a. That a verb is regular in the first, second, or third conjugation if the theme vowel and the person-number endings are as those of the corresponding pattern verbs displayed in Tables 1-3 above; and furthermore, the vocalic endings of the first and third person singular are stressed in their preterites.
- b. That a verb is irregular if its paradigm differs from that of the pattern verbs.

In this thesis, I will assume Harris' proposal that theme vowels do not appear as such in the lexicon. Rather, they are spelled out by a Readjustment rule with the effect of (1):

$$(1) \quad 0 \implies \begin{array}{l} a [1 \text{ conj}] \\ e [2 \text{ conj}] \\ i [3 \text{ conj}] \end{array} \text{Root} + _ _ X\#]v$$

The results of (1) are illustrated in (2):

$$(2) \quad \begin{array}{ll} \text{a. } [v \# [/am/] \#]v & [v \# [/com/] \#]v \\ \quad \quad \quad 1 \text{ conj} & \quad \quad \quad 2 \text{ conj} \\ \\ \text{b. } [v \# am+a \#]v & [v \# com+e \#]v \end{array}$$

Rule (1) applies to the underlying forms /am/ and /com/ in (2a) above, inserting the vowels a and e immediately after the

morpheme boundary in configurations (2b).

To support the assertion that theme vowels must be supplied by rule rather than being fully specified in the lexicon, Harris (1969:99) argues that there are just three conjugational classes and hence three different theme vowels and that this fact is not captured if each theme vowel is fully specified in the lexicon. In other words, if theme vowels are fully specified lexically, then it is a lexical idiosyncrasy of each verb stem that its theme vowel is not /u/ or /o/. (See Harris, 1969, section 3.8)

The purpose of this thesis is to propose an analysis that explains primarily the alternation [a-u] observed in the three irregular second conjugation verbs haber, "to have", saber, "to know", and caber "to fit (into)" and the alternation [p-β] observed in saber and caber. I will make the claim that these verbs are morphophonologically related and that they constitute a subgroup of verbs with similar alternations in the present indicative, preterite indicative, and present subjunctive, which are different from those manifested by the regular verbs of the second conjugation.*

The analysis will also be concerned with five subsets of irregular first, second and third conjugation verbs: (a) placer "to please" and traer "to bring"; (b) poder "to be able", poner "to put", and responder "to answer"; (c) querer "to want", and

ver "to see"; (d) hacer "to make", decir "to say", and venir "to come"; and (e) andar "to walk", estar "to be", and tener "to have". Placer and traer are related to the three verbs haber, saber, and caber because they share the alternation [a-u] in the preterite forms⁵. Poder, poner, and responder are also related to the same verbs as well as to the subset (a) because of the raising of the root back vowel /o/ to [u] in the preterite indicative⁶. Andar, estar and tener have an [u] in their preterites. I will show in 3.2.6. of chapter 3 how they are, therefore, related to haber, saber, and caber and also to the subsets (a-d) mentioned above. Querer, ver and venir, which manifest a front vowel [e-i] raising alternation, and hacer, decir, that have an [i] in their preterites, constitute, therefore, a parallel with those verbs which show the back vowel [a-u], [o-u] alternations. These data and the problems that arise will be discussed in Chapter 3.

In order to account for the alternations [a-u], [o-u], and [e-i] of the irregular first, second and third conjugation verbs under analysis, a set of phonological rules will be proposed in Chapter 3. The rules of Metathesis and Vocalic Raising, which are the most relevant to the analysis, will be formulated and motivated.

Also in Chapter 3, historical data from Spanish as well as from other Romance languages will be presented so as to support

the rules, rule ordering, and underlying representations proposed in this study.

It has been assumed traditionally that haber' is "an isolated verb" (see Bello, 1975:150)⁸ or, "a completely idiosyncratic verb" (see Harris, 1969:97). Thus, special attention will be directed towards discovering what is involved in the identity of the future endings -é, -ás, -á, -emos, -án and the present indicative forms of haber, and in the morphological and phonological relationship between irregular future stems like habr-, sabr-, , and cabr- and their respective infinitive forms haber, saber, and caber . Note that the only difference between habr- and haber is the absence of the theme vowel e in habr- . These and other related facts will lead to the conclusion that haber should not be considered an isolated verb but rather a member of a group morphophonologically related to saber and caber .

There have been several generative studies of the Spanish verb (Foley, 1965; Harris, 1969; Saciuk, 1969; Willis, 1969; Cressey, 1972; Harris, 1972; Hooper, 1974; St. Clair and Park, 1974; Hooper, 1976). All of them analyze and describe the regular verbs of Spanish. However, irregular verbs such as haber, saber , and caber have been systematically avoided by some linguists.

For example, Harris (1969:97) claims that haber is a completely idiosyncratic verb; later on, in a study of five classes of Spanish irregular verbs (see Harris, 1972:268, ft. note 11) he says that the present indicative of haber is unique and, therefore, it is ignored. Another example appears in St. Clair and Park's study of the irregular present tense verbs of Spanish (1974:98) in which they refer to the verb haber as a verb replete with problems for the analyst. With respect to the verb saber, St. Clair and Park (1974:98) say that the only form that they cannot handle is the first person singular sé "I know" and it is this form that not only makes saber irregular in the present but also a residual problem. Also, Foley (1965:71) claims that there is no explanation for the present indicative form sé, since we expect *sepo like quepo of the verb caber.

Foley (1965) and Cressey (1972) are, as far as I have been able to discover, the only ones who present generative analyses of the Spanish irregular verbs haber, saber, and caber.

Foley (1965, chapter 4) proposes a set of phonological rules to explain the vowel and consonantal alternations observed in the present indicative and the present subjunctive forms of the verbs caber and saber, and those observed in the preterite indicative of the three verbs. But Foley's analysis is very limited since he considers only those forms that can undergo the

set of rules that he proposes. Furthermore, only the verb caber is analyzed with reference to the present indicative and two verbs, caber and saber, with reference to the present subjunctive. All other forms are omitted.

In Chapter 2 of this thesis, Foley's analysis will be extended to the omitted forms of the three verbs haber, saber, and caber in order to demonstrate that it is inadequate to account for them.

Cressey (1972) lists a set of irregular preterite forms, specifically cupe, supe, hube, tuve, anduve, estuve, pude, puse, produje, traje, vine, hice, and dije, which must be explained "in terms of exception features associated with their lexical entries, that is, in terms of the phonological system outlined in Chomsky and Halle (1968)" (The Sound Pattern of English, New York, Harper, and Row). In fact, the preterite forms cupe, supe, hube, tuve, anduve, and estuve, are not discussed by Cressey since he assumes that the analysis of saber in terms of w increment rules proposed by Foley (1965) is correct and can be applied to them.

Consequently, two facts are important for Cressey:

- a. The stress pattern of irregular preterites such as v[í]ne (1st. person sing.) and v[í]no (3rd. person sing.)

differ from that of the regular verbs such as comer "to eat", first person sing. com[í] and third person sing. comi[ó].

- b. The root o's of poder and poner cannot be raised to u in their preterites p[ú]de and p[ú]se by the Raising rule proposed by Harris (1969:109).

In order to account for the irregular alternations observed in these preterite forms, Cressey postulates two phonological rules as minor cases of Harris' raising rule mentioned above. He concludes his analysis by claiming that his raising rule as a whole explains why non-low vowels in irregular preterite forms are raised and tensed wherever they happen to be in the verb forms.

It will be shown in Chapter 2 of this thesis that the Raising rule as formulated by Cressey does not express any valid generalization. In fact:

- a. Cressey's rules do not explain why the root a's of saber, caber, haber, and placer from the second conjugation are raised to u in the preterite.
- b. Cressey's rules do not account for the appearance of the

vowel u in the preterites estuve and anduve from the first conjugation, and tuve from the second conjugation.

- c. Cressey's rules cannot explain why the root low vowel a of hacer from the second conjugation is raised to i in the preterite.

1.1.2 THEORETICAL APPROACH.

This study is presented primarily within the framework of generative phonology, specifically as proposed by Chomsky and Halle (1968) in The Sound Pattern of English.

I assume, following Chomsky and Halle, that the phonological component of a generative grammar is a system of rules that applies to the surface structure representation of an utterance as modified by the Readjustment Rules. This is then converted into a phonetic representation, using the information that is present in the surface structure representation that ultimately derives from the syntactic rules and the lexical entries.

Chomsky and Halle (1968) propose that phonological rules are applied in a linear⁹ order, each rule operating on the string as modified by all earlier applicable rules. This

proposal is also important for our analysis.

The theoretical base of the study will be enriched by taking into account three additional concepts used in phonological theory, namely GRADUAL or LEXICAL DIFFUSION¹⁰ of phonological changes across the lexicon as proposed by Wang (1969), Chen (1972), and reanalyzed by Chen and Wang (1975), LINEAR ORDER of applying phonological rules as described by Newton (1970)¹¹, and RULE SCHEMA INTERRUPTION proposed by Foley (1977). We will be deviating in this particular way from Chomsky and Halle's model.

Chen and Wang (1975) present evidence drawn from the history of Chinese, English, and Swedish, as well as from language acquisition, to support the claim that a phonological change propagates itself gradually across the lexicon, from morpheme to morpheme. Ideally, before the change, all speakers will use sound [x] in all relevant morphemes; after the change, all speakers will use sound [y] in the same set of morphemes.

I hypothesize that irregular alternations shared by the Spanish verbs haber, saber, and caber may be explained in a fairly simple and natural way if we adopt Wang and Chen's concept of Lexical Diffusion. If this can be shown to be the case, evidence from Spanish will lend further support to the diffusionist hypothesis.

Two concepts are fundamental with respect to the hypothesis of Lexical Diffusion:

- a. The temporal dimensions of a phonological process that can be external and internal. The external time dimension is concerned with the relative chronology of phonological processes, that is, the external relation between rules in terms of time sequence. And the internal time dimension which deals with the chronological profile, (cf. Wang and Cheng, 1970) of the gradual evolution, and expansion or regression, of a single phonological process. The dimension of time may be studied in each of three relatively independent parameters:
 - 1) phonetic, i.e. from sound [x] to sound [y];
 - 2) lexical, i.e. from morpheme to morpheme in the relevant part of an individual's vocabulary; and
 - 3) social, i.e. from speaker to speaker across dialects as well as within dialects.

- b. The lexical dimensions of a phonological process. A phonological rule may operate, within a given period of time, in many different ways, for example:

- 1) It gradually extends its scope of operation to a larger and larger portion of the lexicon, until all relevant items have been transformed by the process;
- 2) It may stop at a certain period of time and then continue affecting all relevant lexical items;
- 3) It may cease after it has operated over only a part of the relevant vocabulary, never becoming complete. In this case, we have an only partially successful sound change.
- 4) It may be thwarted by another rule competing for the same lexemes.

Questions such as why some morphemes change earlier than others, whether morphemes follow the same change schedule from speaker to speaker, and how speakers influence each other's change schedules, according to Wang (1969), are probably in large part insoluble on the basis of purely linguistic considerations, since they appear to depend on many social factors. Thus, consideration has to be given to the social aspects of language use, as well as to the structural aspects internal to the language.

The analysis presented in this thesis will be concerned

only with the second concept, i.e. the lexical dimensions of a phonological process.¹² In other words, it will deal with a kind of process that has gradually been applying to the forms of the verbs haber, saber, and caber. A set of phonological rules applies to the verb haber, fewer rules to the forms of the verb saber, and even fewer rules to caber. The set appears to have lost some impetus, as will be shown by forms which have not undergone the change. It is possible if not probable that the set of rules will eventually apply to those forms not yet affected by it. Furthermore, the above mentioned process has also been applying gradually to the tenses of the three verbs: a set of rules applies in the present indicative, fewer rules in the preterite, and even fewer in the present subjunctive. It will also be shown that the three verbs under analysis are reasonably assumed to be conditioned by grammar to be subject to a different number of phonological rules.

I claim that if the Gradual Diffusion hypothesis is correct, the irregular forms are not those which traditionally have been considered irregularities such as he "I have", has "you have-sing.", hemos "we have", and han "they have", but rather habemos¹³ "there are" which has not yet been "made regular" by the particular phonological processes.

Wang (1969) and Chen and Wang (1975) do not insist that lexical diffusion is the only means by which morphemes change.

They claim that this is one of the primary means through which a sound change implements itself. According to this view, during the early phase of the change, only a small set of the relevant morphemes is affected. Some of the affected morphemes may change to the y-pronunciation directly. Other morphemes, however, will at first have both the x-pronunciation and the y-pronunciation, fluctuating either randomly or according to factors such as time or style.

Therefore, the hypothesis of Lexical Diffusion suggests (Wang, 1969:15) that, at any given time in any living language, we should expect to find several sets of morphemes with dual pronunciations.¹⁴ According to Wang (1969:15-16), in Chinese dialects, there are large sets of morphemes which have two pronunciations, one literary, the other colloquial. In English, many morphemes have two pronunciations, such as those involving accent pattern [áebdəmən / əbdówmən], postvocalic r [sərprájz / səprájz], vowel labialization [káetəlɔg / káetəlag], vowel length [rūf / ruf], syllabicity [táwl / táwəl], j-glides [nū / njū], voicing of intervocalic obstruent clusters [éksIt / égzIt].

To generate the correct phonetic representations corresponding to the forms of the present indicative, preterite indicative, and present subjunctive of the verbs haber, saber, and caber, as well as those of the preterite indicative of the verbs poder and placer, two phonological rules, specifically

Spirantization and β -deletion have to apply twice in the derivation. Two alternatives are logically possible:

- a. Spirantization and β -deletion are two rules still active in the derivation when other processes come into operation; and
- b. Spirantization and β -deletion are two "persistent"¹⁵ rules, i.e. rules which remain in effect "over a long period of time during the history of a language" and exert their influence whenever "through the operation of other changes" their structural description comes to be fulfilled.¹⁶

Alternative (a) is representative of the linear model proposed by Newton (1970). This constitutes the second additional concept which will enrich the theoretical base of this study.

Newton claims that historical changes result from trends which take place in time, so that the appropriate image is not punctual but linear; his evidence is from dialects of Modern Greek. Alternative (b) is postulated by generative phonology.

I assume that the interpretation of phonological rules as lines, that is, in the sense of alternative (a), is better able

to handle the case of Spanish than the "point-rule assumption of conventional generative phonology".¹⁷

That Spirantization and β -deletion apply gradually across the present indicative, present subjunctive, and preterite indicative forms of the second conjugation verbs haber, saber, and caber will be shown in Chapter 3. This constitutes a piece of evidence to assume that the hypothesis of LEXICAL DIFFUSION is compatible with the concept of LINEAR ORDER of applying phonological rules.

1.1.3 THE DATA.

The data may be considered representative of Latin-American Spanish spoken by educated urban speakers,¹⁸ and is restricted to the simple verb forms corresponding to a subset of Spanish irregular verbs of the first, second, and third conjugation in the present indicative, preterite indicative, and present subjunctive.

In this thesis, two kinds of data will be used in relation to the second conjugation verbs placer, traer, and ver. Verb forms used by educated urban speakers which I will refer to as "Standard Data", and those forms still used by uneducated rural speakers which I will call "Relic Data". Occasional reference will also be made to "Colloquial Speech".

The forms this study is concerned with are given in four sets of paradigms.

The first set deals with the present indicative of the so-called irregular second conjugation verbs haber "to have" <Lat. habēre, saber "to know" <Lat. sapēre, and caber "to fit into" <Lat. capēre.¹⁹

The second set of paradigms is in turn divided into two groups of forms. The first group is made up of the first conjugation verbs estar "to be" <Lat. stāre and andar "to walk" <Lat. adnāre,²⁰ and the second conjugation verbs poder "to be able" <Lat. potēre, poner "to put" <Lat. pōnēre, placer "to please" <Lat. placēre, tener "to have" <Lat. tenēre, and responder "to answer" <Lat. respōndēre.²¹ All of them manifest a high vowel [u] in the root of the preterite indicative, and preterite subjunctive.²² The second group is formed by the second conjugation verbs hacer "to make" <Lat. fācēre and querer "to want" <Lat. quaerēre, and the third conjugation verbs decir "to say" <Lat. dīcēre and venir "to come" <Lat. vēnīre which have a high vowel [i] in the root of the same tense, that is, the preterite indicative.²³

The third set of paradigms involves the present subjunctive of the three verbs presented in the first set of paradigms.

The fourth set of paradigms includes the Spanish second conjugation verbs traer "to bring" < Lat. 3rd.conj. trahĕre and ver "to see" < Lat. 2nd.conj. vidĕre. Placer and responder are also included in this set.

Traer is morphophonologically related to those verbs of group 1. First, the vowels of the first and third person singular endings in the preterite indicative standard and relic forms of this verb are not stressed as in temer "to fear", 1st. person sing. tem[í] and 3rd. person sing. temi[ó], which, as was pointed out in Table 2 above, is the pattern of the Spanish second conjugation. Second, the root vowel a of the preterite in traje "I brought" alternates with the root vowel [u] manifested by those verbs of group 1 as seen in the relic form truje "I brought" Old Spanish troxe, derived from *trauxi and in turn from *traxui Lat. traxi.²⁴

The second conjugation verb ver is related to those of the second group in the second set of paradigms because it manifests the alternation [e-i] in the preterite indicative. In fact, two relic forms vide "I saw" and vido "he saw" are used in the preterite beside the standard ví "I saw" and vió "he saw" in the same areas as the relic forms of traer.²⁵

The verb placer has preterite standard forms such as plací, placieron,²⁶ and the preterite relic forms plugo and pluguieron

(see Table 13 in the Data).²⁷ It is morphophonologically related to the verbs of group 1 for the same reasons as the verb traer, i.e. the unstressed vowel of the first person singular ending in plug[o] , and the appearance of the high vowel [u] in the preterite relic forms.

The second conjugation verb responder "to answer" has standard and relic forms in the preterite like traer, ver, and placer. Standard forms such as respondí, respondiste , etc. do not pose any problem to the analysis in this thesis. But the relic forms repuse , repusiste, repuso, etc. (see Table 13 in the Data) are morphologically and phonologically identical to the preterite forms of the second conjugation verb reponer "to replace". This verb is formed by the prefix re which means "again" and the irregular second conjugation verb poner "to put".

However, repuse "I answered" is semantically different from repuse "I replaced". The first comes from Latin respōndēre and the second comes from Latin repōnēre.

In chapter 3, subsection 3.2.3., I will show that the preterite forms repuse, repusiste, repuso, repusimos, repusieron represent a case of lexical confusion between the verb poner "to put" and the verb responder "to answer". This lexical confusion is observed not only in Spanish but in almost all Romance

languages. Note here that the case of responder and reponer is not unique in Spanish. The second conjugation verb ser "to be" and the third conjugation verb ir "to go" have morphologically and phonologically identical forms in the preterite indicative and preterite subjunctive: fuí, fuiste, fué, fuimos, fueron, "I was, you were, he was, etc., and I went, you went, he went, etc." in the preterite indicative and fuera, fueras, fuera, fuéramos, fueran, "I were, you were, he were, etc., and I went, you went, he went, etc." in the preterite subjunctive respectively.

The assumption made above is partly supported by the Real Academia Española (1976:308) which points out that "el verbo responder, además de su perfecto simple regular respondí, conserva su perfecto fuerte ordinario repuse, repusiste ... (antiguo respuse del Latin *responsi por respondi) que coincide hoy con el perfecto fuerte de reponer."

Summarizing, three points are fundamental in Chapter 1:

- a. The analysis proposed in this thesis will explain how the three Spanish second conjugation verbs haber, saber, and caber, which manifest a back vowel [a-u] raising alternation, are morphophonologically related not only to each other but also to five subsets of other Spanish irregular verbs from the first, second and third

conjugations: a) placer and traer; (b) poder, poner, and responder; (c) querer and ver; (d) hacer, decir and venir; and (e) andar, estar and tener.

- b. The study will be based on the framework of generative phonology. This theoretical base will be enriched by taking into consideration three additional concepts used in phonological theory, i.e. LEXICAL DIFFUSION (Wang, 1969) and (Chen and Wang, 1975), LINEAR ORDER of applying phonological rules (Newton, 1970), and RULE SCHEMA INTERRUPTION (Foley, 1977).
- c. The data used in the argumentation for the hypothesis above are representative of Latin-American Spanish spoken by educated urban speakers.²⁸

The Spanish forms this study is concerned with are given in four sets of paradigms, as follows:

1.1.3.1. PRESENT INDICATIVE.

TABLE 4.

	HABER	[aβér]	SABER	[saβér]	CABER	[kaβér]
1.s.	he	[é]	se	[sé]	quepo	[képo]
2.s.	has	[ás]	sabes	[sáβes]	cabes	[káβes]
3.s.	ha	[á]	sabe	[sáβe]	cabe	[káβe]
1.p.	hemos	[émos]	sabemos	[saβémos]	cabemos	[kaβémos]
	habemos	[aβémos]				
3.p.	han	[án]	saben	[sáβen]	caben	[káβen]

1.1.3.2. PRETERITE INDICATIVE.

1.1.3.2.1. GROUP 1. FIRST CONJUGATION.

TABLE 5.

ESTAR	[estár]	ANDAR	[andár]
1.s. estuve	[estúpe]	anduve	[andúpe]
2.s. estuviste	[estupíste]	anduviste	[andupíste]
3.s. estuvo	[estúpo]	anduvo	[andúpo]
1.p. estuvimos	[estupímos]	anduvimos	[andupímos]
3.p. estuvieron	[estupyéron]	anduvieron	[andupyéron]

SECOND CONJUGATION.

TABLE 6.

HABER	[aβér]	SABER	[saβér]
1.s. *hube ²⁹	[úpe]	supe	[súpe]
2.s. *hubiste	[upíste]	supiste	[supíste]
3.s. hubo	[úpo]	supo	[súpo]
1.p. *hubimos	[upímos]	supimos	[supímos]
3.p. *hubieron	[upyéron]	supieron	[supyéron]

TABLE 7.

CABER	[kaβér]	PODER	[poðér]
1.s. cupe	[kúpe]	pude	[púðe]
2.s. cupiste	[kupíste]	podiste	[puðíste]
3.s. cupo	[kúpo]	pudo	[púðo]
1.p. cupimos	[kupímos]	podimos	[puðímos]
3.p. cupieron	[kupyéron]	podieron	[puðyéron]

TABLE 8.

PONER	[ponér]	TENER	[tenér]
1.s. puse	[púse]	tuve	[túpe]
2.s. pusiste	[pusíste]	tuviste	[tuβíste]
3.s. puso	[púso]	tuvo	[túpo]
1.p. pusimos	[pusímos]	tuvimos	[tuβímos]
3.p. pusieron	[pusyéron]	tuvieron	[tuβyéron]

1.1.3.2.2. GROUP 2. SECOND CONJUGATION.

TABLE 9.

HACER	[asér]	QUERER	[kerér]
1.s. hice	[íse]	quise	[kíse]
2.s. hiciste	[isíste]	quisiste	[kisíste]
3.s. hizo	[íso]	quiso	[kíso]
1.p. hicimos	[isímos]	quisimos	[kisímos]
3.p. hicieron	[isyéron]	quisieron	[kisyéron]

TABLE 10.

DECIR	[desír]	VENIR	[benír]
1.s. dije	[díxe]	vine	[bíne]
2.s. dijiste	[dixíste]	viniste	[biníste]
3.s. dijo	[díxo]	vino	[bíno]
1.p. dijimos	[dixímos]	vinimos	[binímos]
3.p. dijeron	[dixéron]	vinieron	[binyéron]

1.1.3.3. PRESENT SUBJUNCTIVE. SECOND CONJUGATION.

TABLE 11.

	HABER	[aβér]	SABER	[saβér]	CABER	[kaβér]
1.s.	haya	[áya]	sepa	[sépa]	quepa	[képa]
2.s.	hayas	[áyas]	sepas	[sépas]	quepas	[képas]
3.s.	haya	[áya]	sepa	[sépa]	quepa	[képa]
1.p.	hayamos	[ayámos]	sepamos	[sepámos]	quepamos	[kepámos]
3.p.	hayan	[áyan]	sepan	[sépan]	quepan	[képan]

1.1.3.4. PRETERITE INDICATIVE. SECOND CONJUGATION.

TABLE 12.

TRAER [traér] VER [bér]

Standard Forms:

1.s.	traje	[tráxe]	ví	[bí]
2.s.	trajiste	[traxíste]	viste	[bíste]
3.s.	trajo	[tráxo]	vió	[byó]
1.p.	trajimos	[traxímos]	vimos	[bímos]
3.p.	trajeron	[traxéron]	vieron	[byéron]

Relic Forms:

1.s. truje	[trúxe]	vide	[bíðe]
3.s. trujo	[trúxo]	vido	[bíðo]

TABLE 13.

1.s. PLACER	[plaser]	RESPONDER	[responder]
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Standard Forms:

1.s. plací	[plasí]	respondí	[respondí]
2.s. placiste	[plasíste]	respondiste	[respondíste]
3.s. plació	[plasyó]	respondió	[respondyó]
1.p. placimos	[plasímos]	respondimos	[respondímos]
3.p. placieron	[plasyéron]	respondieron	[respondyéron]

Relic Forms:

1.s.	--	--	repuse	[repúse]
2.s.	--	--	repusiste	[repusíste]
3.s. plugo	[plúyo]		repuso	[repúso]
1.p.	--	--	repusimos	[repusímos]
3.p. pluguieron	[pluyéron]		repusieron	[repusyéron]

FOOTNOTES TO CHAPTER 1.

- ¹ Second person plural verb forms that agree with the subject vosotros "you-plural" are forms that do not occur in ordinary discourse in any dialect of Latin-American Spanish. For this reason, they are ignored in this work on Spanish verb morphophonology. These forms, however are perfectly ordinary, a part of every speaker's everyday language, in other dialects, particularly the speech of Spain usually referred to as "Castilian".
- ² See Harris (1969:67) for a detailed discussion of why the theme vowel does not appear phonetically in the first person singular canto.
- ³ See Harris (1969:68) for the application of lowering and theme vowel deletion rules.
- ⁴ This is not to say that other linguists have disagreed with this claim. On the contrary, Bello (1881), Cuervo (1881), and Foley (1965) have shown interesting relations between the three verbs even though their analyses have been too restricted.
- ⁵ I am referring here to the preterite relic forms of placer and traer, that is, plugo, pluquieron and truje, trujo respectively. These two verbs also have standard forms such as plací, placiste, etc., and traje, trajiste, etc.

(See Table 13 in the Data)

- 6 I am referring to the irregular preterite forms of responder, that is, repuse, repusiste, etc. This verb also has regular preterite forms such as respondí (see Table 13 in the Data).
- 7 Haber "to have" is the perfect auxiliary verb in Spanish. It never means "have" in the sense of "possess", "own"; this meaning is represented by tener.
- 8 This is the 13th. edition of Andrés Bello's grammar of Spanish. The first edition was published in 1881 by Echeverría Hermanos. It contains notes written by Cuervo and an alphabetical index. In fact, Bello's grammar and Cuervo's notes appear in one volume and have been traditionally considered one work. However, in this thesis, I will refer to Bello's grammar as 'Bello (1881)' and to Cuervo's notes as 'Cuervo (1881)'.
- 9 It is stated later in The Scund Pattern of English (see (39), p. 344) that "to apply a rule, the entire string is first scanned for segments that satisfy the environmental constraints of the rule. After all such segments have been identified in the string, the changes required by the rule are applied simultaneously".
- 10 The term "Gradual Diffusion" is employed in this study as well as "Lexical Diffusion" with no difference in meaning.
- 11 The term linear comes from Newton's interpretation of

rules as lines and his manner of linking crucial end-points by broken lines. Newton (1970) also uses punctual as the opposite term referring to the model stated by generative phonology according to which rules apply once in the cycle in the given order in forming a derivation, precisely whenever their structural description is met.

12 This does not mean that the concept of the temporal dimensions is less important for the analysis.

13 Both forms hemos and habemos correspond to the first person plural of haber; hemos is the auxiliary and habemos has been restricted to the so-called impersonal constructions meaning "exist" as in the example: Habemos cuatro personas "there are four persons".

14 In the phonetic literature, these twin forms have been referred to as "doublets".

15 The term "persistent" was first used by Chafe (1967) in his article: "The Ordering of Phonological Rules", in IJAL 34, 115-136, and then taken into consideration by Newton (1970).

16 See Newton (1970:43).

17 Newton has presented several instances of rule application in Greek showing that strict adherence to "point rule" phonology involves the recognition of asymmetry violation, i.e. when, for example, two rules A and B are so related

that A bleeds B and B feeds A, or where the relation between two rules is one of mutual feeding (see Newton, 1970:32-35); the recognition of transitivity violation, i.e. where, for instance, a rule A feeds B and B feeds C, but at the same time A is so ordered that it is crucially preceded by rule C (see Newton, 1970:36-41); and in both cases, the abandonment of ordered sets of rules.

18 The term "educated urban standard" is usually defined as L.A.S., that is, Latin-American Standard.

19 The data for Latin and all the etymological data in this thesis are taken from García de Diego (1954): Diccionario Etimológico Español e Hispánico, Lewis (1901): A Latin Dictionary for Schools, Corominas (1961): Diccionario Crítico Etimológico de la Lengua Castellana, and Donadiu y Buignau (1890): Diccionario de la Lengua Castellana con la correspondencia Catalana.

20 There are three different explanations about the source of andar:

a. Corominas says that andar comes from Romance *amlare which in turn comes from Lat. ambulāre. Also French aller and Italian andare, according to Corominas, come from Latin ambulare. Romance *amlare originated Romance annare which went to Catalan anar and Rumanian înnare.

b. García de Diego says that andar comes from Lat.

ambitāre. This in turn originates Cat. anar, and Port. and Gall. andar.

c. Donadiu and Buignau says that andar comes from "Latín adnare por transposición de la d y n".

21 The verbs placer and responder appear in the fourth set of paradigms and not in the first group of the second set because they have standard and relic forms like traer and ver. . However, they belong to the second set because of the u of the preterite relic forms.

22 The forms of the preterite subjunctive are hubiera "I had", supiera "I knew", cupiera "I fitted", podiera "I could", etc. These forms are paradigmatically related to the third person plural of the preterite indicative hubieron, supieron, cupieron, podieron, etc. For this reason, subjunctive forms are ignored in the first set of the second paradigm as well as in the rest of the present analysis.

23 Note that the three verbs haber, saber, and caber of the first set of paradigms are also included in the second set. (See forms in Table 6 in the Data)

24 The relic verbal forms truje "I brought", and trujo "he brought" are heard beside the standard traje, trajo in the rustic and vulgar speech of Latin-American Spanish spoken in the Andes, and also in Caribbean Spanish spoken in Trinidad. (See Moodie (1973:93))

Bello (1881:146) considers the verb traer a member of "El quinto orden o grupo de formas afines" (the fifth class or group of related forms), made up also of haber, saber, caber, and placer, because the vowel a of the root was raised to u in the preterite indicative truje "I brought", the preterite subjunctive trujese o trujera, and the future subjunctive trujere. Bello also points out that people from the lower classes still use these forms of the verb traer.

Cuervo (1881:82, note 76-IV) includes the preterite forms of traer in a group that he refers to as 'pretéritos fuertes' (strong preterites). These preterites are given in group 1 of the first set of paradigms.

25 See Bello (1881:159) and Moodie (1973:93).

26 In fact, Spanish speakers do not use these forms. Instead, they use the second conjugation verb forms of complacer which means "to please" like placer.

27 According to Bello (1881:147), in Old Spanish the verb placer was conjugated only in the third person singular of the preterite indicative plugo "he, she pleased", present subjunctive plega "he, she pleases", preterite subjunctive pluquiera o pluquiese, and future subjunctive pluquiere. And around the 19th. century, it began to be conjugated in every mood, tense, number, and person.

With respect to the present use of placer, the Real

Academia Española (R.A.E.) (1976:293, ft. note 74) says:
"Las formas con -g- no se emplean hoy en la lengua
hablada, pero tienen estado literario, a pesar de su
carácter marcadamente arcaico".

In spite of R.A.E.'s statement, the relic forms of placer
are certainly used by uneducated speakers in some
Latin-American rural areas and is perfectly ordinary in
church as a part of every priest's language in religious
ceremonies.

28 The standard and relic data presented in this thesis has
been checked with the native speakers Alberto Eisenkraft
from Peru; Lucy de Stephen from El Salvador; Juan Pérez,
Nelson y Marjeli Onzaga from Colombia; Germán and Jovita
Wesphal from Chile; Rita de Grandis from Argentina; Nelly
Villegas from Uruguay; and Mary Uzcátegui R., Luis Gómez,
Pablo Sivila, and Felipe Ortega from Venezuela.

29 Observe that hube, hubiste, hubimos, and hubieron are
preterite forms not in use in Modern Spanish. This is the
reason for considering them archaic forms.

CHAPTER 2

PREVIOUS ANALYSES: A CRITIQUE

This second chapter is divided into three sections: The first section deals with suggestions made by Bello (1881) and Cuervo (1881) with respect to the morphological characteristics shared by the Spanish irregular verbs haber, saber, caber, placer, traer, tener, responder, querer, poder, and poner from the second conjugation; andar and estar from the first conjugation; and venir from the third conjugation. The other two sections involve two generative analyses of the verbs haber, saber, caber and some of the other verbs mentioned above as presented by Foley (1965) and Cressey (1972).

2.1. ANALYSES PRESENTED BY BELLO AND CUERVO (1881).

In this section, I will present a brief summary of a number of relevant suggestions made by Bello and Cuervo which will support my claim that the Spanish second conjugation verbs haber, saber, and caber are morphophonologically related and thus make up a subgroup of verbs with shared vowel and consonantal alternations in the present indicative, preterite indicative, and present subjunctive. These alternations are different from those manifested in the so-called regular verbs of the second conjugation.

2.1.1 The Fifth Group of Related Forms.

Bello (1881:136) claims that the verbs haber, saber, and caber make up "El quinto orden o grupo de formas afines" (the fifth class or group of related forms) firstly because they change their roots hab, sap, and cap to hub, sup, and cup in the preterite indicative (see Tables 6 and 7 in the Data) and preterite subjunctive¹ and, secondly, because the vowels of the first and third person singular endings in the preterite indicative are not stressed as they are in temer "to fear" which exemplifies the regular pattern of the Spanish second conjugation:

TABLE 14.

PRETERITE INDICATIVE	TEMER	HABER	SABER	CABER
1st. p. singular	tem-[í]	hub-[e]	sup-[e]	cup-[e]
3rd. p. singular	tem-i[ó]	hub-[o]	sup-[o]	cup-[o]

According to Bello, the fifth class of related forms consists not only of the three verbs haber, saber, and caber but also of any verb of any conjugation that follows the two conditions established above, i.e. the change of the root in the preterite indicative and the unstressed vocalic endings of the first and third person singular in the same tense. Thus, Bello lists andar "to walk" from the first conjugation and venir "to come" from the third conjugation whose roots and and ven are apparently changed to anduv and vin, and whose first and third person singular forms in the preterite indicative are and[ú]ve and v[í]ne, and[ú]vo and v[í]no respectively.

With respect to this first classification, Bello also takes into consideration the first conjugation verb estar "to be" and the second conjugation verbs placer "to please", hacer "to make", tener "to possess", querer "to want", poder "to be able", responder "to answer", and poner "to put". In fact, all of these verbs manifest a variant of their roots in the preterite

indicative (see Tables 5-10 in the Data), and also, in the same tense, the vowels of the first and third person singular endings are not stressed. Therefore, these verbs are also considered members of the fifth group of morphologically related forms.

Bello points out that the second conjugation irregular verb traer "to bring" (see Table 12 in the Data) also belongs to the fifth group of related forms. Indeed, the variant of the root tra is traj for the standard preterite form traje and truj for the relic preterite form truje, and the vowels of the first and second person singular endings are unstressed in the same tense.

If we make reference to the levels of adequacy explicitly differentiated by Chomsky (1965:24-27) and other generative grammarians (see Chomsky and Halle, 1965:458), Bello's grammar with respect to the fifth class of irregular related forms can be said to achieve observational adequacy because it describes the data on which it is based and nothing more. In other words, Bello proposes an analysis that merely states that certain forms are observed to share certain characteristics while other forms are not. Bello's description is a classification with no explanatory value.

For example, Bello does not consider the second conjugation verb ver "to see" to be a member of the fifth group of irregular related forms. Note that in the basic form /bed/ the /e/ is changed to [i] in the preterite of the standard forms as well as

of the relic forms (see Table 12 in the Data), and the vowels of the first and third person singular endings are not stressed in the relic forms v[í]de and v[í]do.²

Consequently, I propose that the verb ver also belongs to the fifth group since it fulfills those two conditions established by Bello, i.e. the change of the root in the preterite and the unstressed vocalic endings of the first and third person singular in the same tense.

Bello's classifications presented thus far support the claim, that the Spanish second conjugation verbs haber, saber, and caber are morphophonologically related and that they share vowel and consonantal alternations with the verbs estar and andar from the first conjugation, placer, tener, traer, poner, poder, responder, querer, and ver from the second conjugation, and venir from the third conjugation.

However, by themselves, these two conditions established by Bello, i.e. the change of the root in the preterite and the unstressed vocalic endings of the first and third person singular in the same tense, are not sufficient reasons for classifying together Spanish irregular verbs such as those of the fifth class of related forms. Since Bello takes into consideration only the preterite standard forms of the verb ver, first person singular ví and third person singular vió, and ignores the corresponding relic forms v[í]de and v[í]do, the

verb ver can not in his scheme of things belong to the fifth class of related forms.³ Note, furthermore, that the second condition established by Bello, viz. that the vowels of the first and third person singular endings are not stressed, is not met by the preterite standard forms but it is, however, met by the relic forms.

Therefore, as I have claimed above, the verb ver has to be considered in the analysis of the subset of irregular verbs haber, saber, caber, querer, and venir, which manifest morphophonologically related forms in the preterite. Similarly, if est- and and- are the basic forms of the first conjugation verbs estar and andar, then the corresponding preterite forms estuve [estúpe] and anduve [andúpe] cannot be the result of changing the basic forms, contrary to Bello's (1881:153,#580) claim, but rather of adding the simple preterite stem* hube [úpe] of the verb haber to the basic forms est- and and-, as I will demonstrate in the analysis which will be presented in chapter 3 of this thesis.

In the analysis of chapter 3, I will show that the above mentioned verbs are related in terms of the gradual application of a set of phonological rules through the lexicon. This manner of applying rules is based on the concept of LEXICAL DIFFUSION of phonological changes across the lexicon as proposed by Wang (1969). These verbs are also related in terms of the LINEAR

ORDER of applying phonological rules as described by Newton (1970). According to Newton's model, phonological rules are constant rules, i.e. rules that are still active in the derivation when other processes come into operation. Furthermore, I will show that the verbs under analysis are related in terms of the principle of RULE SCHEMA INTERRUPTION⁵ proposed by Foley (1977). Foley claims that a phonological rule can apply at different times in the same derivation and another rule may interrupt the expansion of the rule schema. On the other hand, the verbs haber, saber, caber, traer, ver, and all the verbs classified by Bello in the fifth class of related forms differ only to the degree in which the rules apply in terms of the particular classes of verbs and the type of construction in which they occur.

In light of the observations made by Bello about the fifth class of irregular related forms, I conclude that his analysis is a purely descriptive analysis of the phenomena observable only at the level of surface structure representation, and that his conditions mentioned in this subsection are not sufficiently accurately established so that they may be seen to apply to the verbs estar, andar and ver, which must also be considered members of the fifth group of related forms in the preterite.

In chapter 3, I will present an analysis that is not only observationally adequate but also descriptively adequate.

The analysis clearly leads to the conclusion that the second conjugation verbs haber, saber, and caber, as well as traer, placer, tener, poder, poner, responder, querer, ver, tener, and hacer, from the second conjugation, estar, andar, from the first conjugation, and decir, venir from the third conjugation make up a subgroup of verbs with specific shared vowel and consonantal alternations in the preterite. I will demonstrate that these verbs are related by shared morphophonological processes which operate gradually on various forms of the paradigms of these lexical items. The processes also apply across tenses: more rules operate to the forms of the present indicative, fewer rules to the forms of the preterite, and even fewer to the forms of the present subjunctive.

I will also show in chapter 3 that the above mentioned verbs are linked together in terms of the GRADUAL DIFFUSION hypothesis postulated by Wang (1969), and Chen and Wang (1975) although other grammarians such as Bello (1881) have sub-classified them in a fragmented manner. Furthermore, the vowel and consonantal alternations observed in these verbs can be accounted for if we take into consideration the LINEAR ORDER of applying phonological rules as described by Newton (1970) as well as the principle of RULE SCHEMA INTERRUPTION proposed by Foley (1977).

2.1.2 The Sixth Group of Related Forms.

According to Bello (1881:136-137), "El sexto orden de formas afines (the sixth group of related forms) comprende los futuros y pos-pretéritos de indicativo, cuya raíz, es el infinitivo entero. Así caber muda esta raíz en cabr- para todas las formas de este orden, y en lugar de caber-é , caber-ás, etc., hace cabr-é, cabr-ás, etc."

From Bello's statement it is possible to infer that there is a morphological process that adds the inflectional endings é, ás, á, etc., and ía , ías, ía, etc., to the infinitive form caber in the future indicative and the conditional respectively, giving caber-é , -ás, -á, etc., and caber-ía, -ías , -ía, etc. Another inference is that there is a phonological process that deletes the theme vowel e of the infinitive, giving the correct phonetic outputs [kabré], [kabrás], [kabrá], etc., and [kabría], [kabrías], [kabría], etc.

The two inferences drawn in the preceding paragraphs will only be correct if the second conjugation verbs haber , saber, poder, and querer , which also belong to the sixth group of related forms (see Bello, 1881:150-151), are in fact subject to the same two processes as the verb caber is. This can be clearly observed in the Table below:

TABLE 15.

INFINITIVE	ADDITION	DELETION	FUTURE
a) caber	caber+é,...	cab[ø]r+é...	cabré [kabré]
saber	saber+é,...	sab[ø]r+é...	sabré [sabré]
haber	haber+é,...	hab[ø]r+é...	habré [abré]
poder	poder+é,...	pod[ø]r+é...	podré [podré]
querer	querer+é,...	quer[ø]r+é...	querré [kefé]

CONDITIONAL

b)	caber+ía,...	cab[ø]r+ía...	cabría [kabría]
	saber+ía,...	sab[ø]r+ía...	sabría [sabría]
	haber+ía,...	hab[ø]r+ía...	habría [abría]
	poder+ía,...	pod[ø]r+ía...	podría [podría]
	querer+ía,...	quer[ø]r+ía...	querría [keñía]

As Bello pointed out, the verbs in Table 15 above in fact make up a sub-group of related forms in the future and the conditional. However, Bello only describes the data and nothing more. He does not tell us anything about the type of process these forms are subject to.

Bello further adds that the second conjugation irregular verbs valer "to cost, to be worth", tener "to have", poner "to put", and hacer "to make", and the third conjugation verbs decir "to say", salir "to get out", and venir "to come" are also members of the sixth group, and that their corresponding stems for both the future and the conditional are valdr-, tendr-, pondr-, har-, dir-, saldr-, and vendr-. (See Bello, 1881:151)

Consequently, in this case, I infer that the two processes which apply to the infinitive forms in Table 15 also apply to this second sub-group of verbs. I also infer that the process of Theme Vowel Deletion applies not only to the first sub-group deleting the theme vowel e, but also to the forms of the second sub-group which manifest the theme vowel i like salir, venir, and decir.

Let us see how the two processes, which were illustrated in Table 15 above, apply to the second sub-group of verbs set up by Bello:

TABLE 16.

INFINITIVE	ADDITION	DELETION	FUTURE
a) valer	valer+é,...	val[∅]r+é...	*valré [balré]
tener	tener+é,...	ten[∅]r+é...	*tenré [tenré]
poner	poner+é,...	pon[∅]r+é...	*ponré [ponré]
salir	salir+é,...	sal[∅]r+é...	*salré [salré]
venir	venir+é,...	ven[∅]r+é...	*venré [benré]
			CONDITIONAL
	valer+ía,...	val[∅]r+ía...	*valría [balría]
	tener+ía,...	ten[∅]r+ía...	*tenría [tenría]
	poner+ía,...	pon[∅]r+ía...	*ponría [ponría]
	salir+ía,...	sal[∅]r+ía...	*salría [salría]
	venir+ía,...	ven[∅]r+ía...	*venría [benría]
			FUTURE
b) hacer	hacer+é,...	hac[∅]r+é...	*hacré [asré]
decir	decir+é,...	dec[∅]r+é...	*decré [desré]

CONDITIONAL

hacer+ía,... hac[∅]r+ía... *hacría [asría]
 decir+ía,... dec[∅]r+ía... *decría [desría]

The incorrect phonetic outputs given in Table 16 above are the result of applying the two processes of addition and deletion inferred from Bello's statement about the sixth group of related forms quoted at the very beginning of this sub-section.

This shows that either the processes in Tables 15 and 16 are not correctly formulated or that what Bello says about the formation of the future and conditional forms of caber, saber, haber, poder, and querer is not enough to describe adequately and derive the correct phonetic outputs of the second sub-group of forms listed in Table 16. Note that both sub-groups in Tables 15 and 16, according to Bello, are members of the sixth group of related forms.

Since the processes of addition and deletion apply to the first sub-group of forms, deriving the right phonetic outputs, but not to the second sub-group, Bello's description with regard to the first is correct, but it is not with respect to the second sub-group illustrated in Table 16.

Consequently, Bello's analysis of the sixth class of

irregular related forms presented in this sub-section does not even achieve descriptive adequacy since it does not give a correct account of the data on which it is based. His analysis is in fact an analysis of verbal root and ending relations, i.e. a purely morphological classification.

In relation to the problems posed above, two subsections will be presented. In the first subsection, I will discuss an alternative analysis given by Harris (1969:96-98). According to this analysis, the processes which the forms in Table 16 are subject to, i.e. Theme Vowel Deletion rule as well as d-insertion and Final Root Consonant deletion, are phonological processes which apply after the lexical and the readjustment rules have applied to the surface structure representations of the future and conditional forms. In the second subsection, I will show that the verbs decir and hacer are, on the one hand, very special verbs which undergo special phonological rules and that, on the other, they are phonologically related to the verbs haber, saber, caber, as well as to poder, querer, valer, tener, poner, salir, and venir in the future and conditional.

In chapter 3 of this thesis, it will be demonstrated how the verbs decir, and hacer are related to the verbs haber, saber, and caber in the preterite forms. All these verbs are listed in the lexicon in such a way that they undergo phonological processes, not all at the same time, but rather,

gradually according to the Gradual Diffusion hypothesis. They are also linked together in terms of the LINEAR ORDER and the principle of RULE SCHEMA INTERRUPTION proposed by Foley (1977).

2.1.2.1 An Analysis Presented by Harris.

Harris (1969:94-96) gives considerable syntactic, morphological, as well as phonological evidence which suggests that future indicative forms such as pediré, pedirás, pedirá, pediremos, pedirán, "I, you, he, she, etc., will ask for" are composed of the infinitive pedir "to ask for" plus the present indicative forms of haber "Auxiliary-have": he [é], has [ás], ha [á], etc.⁶

I assume that the analysis of the Spanish regular future proposed by Harris (1969) is correct. I also assume, based on Harris (1969:96-98), that the stems of the future forms cabr-, habr-, sabr-, podr-, querr-, valdr-, tendr-, pondr-, saldr-, vendr-, har-, and dir- differ from their respective infinitive forms, as follows:

- a. cabr-, sabr-, habr-, podr-, and querr- consist of the infinitive minus the theme vowel.

b. valdr-, tendr-, pondr-, saldr-, and vendr- have a d inserted immediately after the final overt consonant of the root.⁷

c. har- and dir- consist of the infinitive minus the theme vowel and also minus the final root consonant (orthographic c = [s] in hacer and decir)⁸

In order to derive forms (a) and (b) above, Harris proposes two phonological rules. The first rule, which is given in (3) below, deletes the theme vowel in all forms (a) and (b)

(3) $V \Rightarrow \emptyset / +[\underline{\quad}] + r \# [+fut]$ (Harris' rule (70))
irreg.

The second rule, which is given in (4), inserts d in the stems of group (b)

(4) $\emptyset \Rightarrow d / \left[\begin{array}{l} +cons \\ -obstr \\ -cont \end{array} \right] + \underline{\quad} r^9$ (Harris' rule (71))

Note that, according to Harris, rule (3), which deletes the theme vowels in the irregular future stems (a) and (b), must apply to specially marked formatives. Note also that rule (3) has to apply before rule (4) in forms such as /val+e+r/, deleting the front vowel /e/ which appears between the two

morpheme boundaries. Then rule (4) will correctly insert d after the morpheme boundary which is preceded by the final root consonant l.¹⁰

Now, let us illustrate Harris' analysis by presenting the derivation of the future form podré "I will be able", as follows. The application of readjustment rules -which modify the surface structure representations- derives the configuration that can be represented in (5):

(5) [v' # [v # pod+e+rE #]v [v #e#]v]v'
(where v stands for verb)

Thus, as a first step, the outermost brackets are erased, converting (5) into (6):

(6) [v # pod+e+rE #]v [v #e#]v

Then, when the outermost paired brackets are reached, (6) will be converted into (7):

(7) [v # pod+e+rE #e#]v''

The internal word boundary in (7) would prevent rule (8) below from assigning stress further to the left than the final syllable, and it would also retain the correct environment (...__ #) for the deletion of E by rule (10). Both rules (8) and (10) as well as their respective derived structures are given

below:

(8) $v \implies [1 \text{ stress}] / _ \quad \begin{array}{l} [(C (VC (L)) V) C \#]_n, a \quad a) \\ [(([-\text{perf}]) C V) C \#]_v \quad b) \end{array}^{12}$

(9) $[v \# \text{pod}+e+rE \#e\#]_v$

(10) $[\begin{array}{c} e \\ +D \end{array}] \implies 0 / V \begin{array}{c} +cor \\ +ant \end{array} _ \#^{13} \quad (\text{Harris' rule (23)})$

(11) $[v \# \text{pod}+e+r \#e'\#]_v$

At this stage of the derivation of the future form podre, the theme vowel deletion rule (3) can apply to (11), giving (12):

(12) $[v \# \text{pod}+r \#e'\#]_v$

Finally, since configuration (12) above does not have a consonant characterized by $[-\text{obstruent}]$, then the insertion rule (4) does not apply, and structure (13) below will be the correct phonetic representation:

(13) $[\text{podr}\acute{e}]$

As a matter of fact, all forms listed in subgroup (a) can be correctly derived following Harris' analysis illustrated in (5-13) above with the future form podr\acute{e}. Similarly, all forms of subgroup (b) can be derived providing that both rules (3) and (4) apply to them. However, the future forms in (c) har\acute{e} and

diré as well as their corresponding conditional forms cannot be derived unless, according to Harris (1969:96), a final root consonant deletion rule is proposed. However, Harris does not formulate this deletion rule. He claims that the verbs decir and hacer "are so wildly idiosyncratic throughout their paradigms that little purpose would be served by examining them further at this point." (See Harris, 1969:98)

2.1.2.2 DECIR and HACER.

Before dealing with two other suggestions made by Bello and Cuervo (1881) about the second conjugation verbs haber, saber, and caber, I will show in this subsection:

- a. That the verb decir is related to the third conjugation verbs such as medir "to measure" which manifest a front vowel [i-e] alternation.
- b. That the e of decir "to say", decimos "we say", and the i of diré "I will say", dije "I said", dicho "past part.-said" is an /i/ in the underlying representation;
- c. That the correct phonetic representations [diré] and

[aré] of the future forms of the verbs decir and hacer respectively as well as their corresponding conditional forms diría [diría] and haría [aría] can be accounted for if a special deletion rule applies to the final consonant of the roots dis+ and as+ which come from /dik+/ and /ak+/ respectively¹⁴. Underlying representations will be motivated and a special final root consonant deletion rule, as suggested by Harris (1969:96), will be proposed.

In chapter 3 of this thesis, I will demonstrate that decir and hacer are subject to shared morphophonological processes which also apply to the second conjugation verbs querer and ver, and to the third conjugation verb venir in the preterite forms. Note that querer, ver, decir, and venir manifest a front vowel [e-i] raising alternation and, therefore, suggest a parallel in the observed vowel alternations of the verbs haber, saber, caber and also in poder, and poner which show the back vowel [a-u] and [o-u] alternations respectively.

This thesis will attempt to show that the verbs mentioned above are also related in terms of the gradual application of a set of phonological rules. This manner of applying processes is based on the concept of LEXICAL DIFFUSION. These verbs are also related in terms of the LINEAR ORDER of applying phonological rules Newton (1970). Additionally, they can be related in terms

of the principle of RULE SCHEMA INTERRUPTION proposed by Foley (1977).

In fact, the verbs haber, saber, and caber, as well as traer, ver and all the verbs classified by Bello in the fifth class of related forms, differ in terms of the particular paradigmatic classes of the verbs and the type of construction in which they occur.

The verb decir "to say" had a long vowel i in Latin dīcēre [díkere]. This long vowel remained [i] in Spanish in stressed position as in d[í]go (observe v[í]vo from Lat. vīvus) but it changed to [e] in unstressed position as in d[e]cir "to say", d[e]cimos "we say", d[e]cía "I said". Also observe v[e]lcino "neighbor" from Lat. vīcinus.

Thus, decir manifests an [i-e] alternation in the present indicative as shown in Table 17 below:

TABLE 17. Present Indicative

1st.p.sg.	d[í]go	1st.p.pl.	d[e]cimos
2nd.p.sg.	d[í]ces		
3rd.p.sg.	d[í]ce	3rd.p.pl.	d[í]cen

This alternation is accounted for by postulating an underlying high vowel /i/ in all forms of Table 17 and a phonological rule

which lowers the vowel /i/ to an [e] in an environment before one or more consonants followed by a high vowel i. This rule was proposed by Harris (1969:111) and is given in a slightly modified form in (14) below:

(14) $V \implies [-\text{high}] / _ C i^{15}$ (cf. Harris' rule (11))

Consequently, I conclude that the verb decir is related to the third conjugation verbs such as medir which manifest the front vowel [i-e] alternation.¹⁶ I also conclude, based on Harris' analysis presented above, that the e of decir, decimos, and the i of diré "I will say", dije "I said", dicho "past part.-said" is an /i/ in the underlying representation.

In section 2.1.2., I demonstrated that Bello's analysis regarding the irregular future and conditional forms did not account for the correct phonetic representations [diré] of the verb decir and [aré] of the verb hacer nor for their corresponding conditional forms diría [diría] and haría [aría].

Furthermore, at the end of 2.1.2.1., I concluded that such forms of decir and hacer can be derived if a special deletion rule applies to the final consonant of the root. I now propose that diré comes from a configuration such as (15): (this configuration is generated after the outermost paired brackets have been reached and the stress rule (part b) given in (8)

above has applied)

(15) /v # dik+i+r #é# /v

The /k/ in (15) can be phonologically motivated from the surface [ɣ] in digo [díɣo] Lat. dīco [díko] "I say" and diga [díɣa] "I say-subj". Observe hago [áɣo] "I make" and haga [áɣa] "I make-subj" from Lat. fācēre (orthographic c = [k]). Similarly, the present indicative of yacer "to lie" from Lat. jacēre, (orthogr. c = [k]) is yago [yáɣo] "I lie". The /k/ can also be justified on the basis of the related forms dictado [diktádo] "dictation", diccionario [diksyonáryo] "dictionary", contradicción [kontraðiksyión] "contradiction".

The velar consonant /k/ is then assibilated to [s] by rule (16):

(16) k ==> s / _____ i¹⁷
e

giving (17):

(17) /v # dis+i+r #é#/v

Now, rule (16) also applies to configuration (18)

(18) /v # ak+e+r #é# /v¹⁸

which is the underlying form of haré, generating (19):

(19) /v # as+e+r #é# /v

At this stage of the derivation, the Theme Vowel Deletion rule postulated by Harris (see rule (3) above) applies to both configurations (17) and (19), giving (20) and (21) respectively:

(20) /v # dis+r #é# /v

(21) /v # as+r #é# /v

Then, the final consonant of the roots /dis+/ and /as+/ is deleted in both forms (20) and (21) before /r/¹⁹ in order to derive the correct phonetic representations [diré] and [aré]. This change can be accounted for by a special phonological rule formulated in (22) below:

(22) s ==> ∅ / + _____ r

Rule (22) above can be phonetically motivated on the basis of the morpheme structure conditions, of the surface structure conditions, and of dialect variations.

Consequently, the consonant /s/ has to be deleted in configurations (20) /v # dis+r #é# /v and (21) /v # as+r #é# /v by the phonological rule formulated in (22). According to the conditions mentioned above, the resulting forms *[disré] and

*[asré] are unacceptable in Spanish.

Given the analysis and the observations presented in 2.1.2.1. and 2.1.2.2., I conclude:

- a. Bello's analysis with respect to the verbs haber, saber, caber, poder, querer, valer, tener, poner, salir, venir, hacer, and decir does not achieve either observational or descriptive adequacy;
- b. Harris' analysis illustrated in (5-13) which accounts for all the forms listed in subgroups (a) and (b) is correct;
- c. The verb decir is related to the third conjugation verbs such as medir which manifest the front vowel [i-e] alternation;
- d. Based on Harris' rule given in (14), the e of decir, decimos, and the i of diré, dije, dicho is an /i/ in the underlying representation;
- e. The correct phonetic representations [diré] and [aré] of the verbs decir, and hacer respectively can be accounted for if a special deletion rule such as that proposed in

(22) applies to the final consonant of the roots dist and ast which come from /dik+/ and /ak+/ respectively;

f. Harris' analysis of the verbs haber, saber, caber, as well as those listed in subgroups (a) and (b), and my proposal made to account for the future and conditional forms of the verbs decir, and hacer express the important generalization in Spanish that future indicative forms are composed of the infinitive plus the present indicative forms of haber.

2.1.3 The Tenth Group of Irregular Verbs.

Bello (1881:152) proposes another classification of the Spanish verbs called "La décima clase de verbos irregulares" (the tenth class of irregular verbs). Saber and caber but not haber belong to this tenth class of Spanish verbs. Bello does not consider the verb haber to be a member of this group but, rather, to be a single irregular verb because of the anomalous forms which are observed in the present indicative and the imperative. Let us observe these forms in the following two sets of paradigms:

TABLE 18.

PRESENT INDIC.	HABER	SABER	CABER
1st.p.sg.	he	se'	quepo
2nd.p.sg.	has	sabes	cabes
3rd.p.sg.	ha	sabe	cabe
1st.p.pl.	hemos	sabemos	cabemos
	habemos		
3rd.p.pl.	han	saben	caben

IMPERATIVE

2nd.p.sg.	he ²⁰	sepa	quepa
2nd.p.pl.	habed	sepan	quepan

The reason why Bello does not consider the verb haber to be a member of the tenth class is because its paradigm does not share any form with saber and caber except habemos.

This shows, as I stated in 2.1.1. and 2.1.2., that Bello's analysis accounts only for those phenomena which are observable at the level of surface structure representation. Even at this level, we can observe that the forms he of haber and se' of saber in Table 18 above are very closely related, i.e. they have been subject to exactly the same processes of Spirantization, β -deletion, and Vowel Contraction.

Cuervo (1881:87), on the other hand, does not agree with Bello that the forms of the verb haber in the present indicative and the imperative are anomalous.

Firstly, Cuervo argues that they are perfectly regular. The second person singular of the imperative habe and the second person plural habed, Cuervo claims, were very common when haber meant "possess", "own", e.g. "Habe misericordia de mí, pues dende tu niñez por todas las edades creció contigo la misericordia" (Granada, Oración I de la vida de Nuestra Señora); "Habed piedad, Criador, destas vuestras criaturas" (Santa Teresa, Exclamaciones del alma a Dios, VIII). Cuervo also points out that the forms of the imperative habe, and habed alternated, in Old Spanish, with the forms of the present indicative habes, habe , haben. Therefore, according to Cuervo, these forms of haber cannot be considered irregular, contrary to what Bello has claimed.

Secondly, Cuervo (1881:82,83) argues that the verbs haber, saber , and caber manifest "casos curiosos de atracción y contracción" (curious cases of attraction and contraction):

- a. with respect to the preterite indicative "... hube (antiguo hobe : provenzal haub: *haubi, habui), supe (antiguo sope, provenzal saup: *saupi, sapui), cupe (antiguo cope, provenzal caup: *caupi, capui)..."

b. with respect to the present indicative and present subjunctive "quepo, quepa (portugués caibo, caiba : *caipo, *caipa: capio, capiam), sepa (portugués saiba: *saipa: sapiam),..."

As can be observed, Cuervo's arguments are based on the historical development of the present indicative, preterite indicative, and the imperative forms of haber, saber, and caber and also on the relationship between modern Portuguese and modern Spanish forms.

This clearly indicates that the three verbs under analysis are in fact related not only at the level of surface structure representation but also at a deeper level of representation, i.e. that they have been subject to shared morphophonological processes such as Metathesis, Vowel Contraction, and Vowel Raising in the preterite.

I will demonstrate in chapter 3 of this thesis that the verbs haber, saber, caber, traer, placer, poder, poner, responder, querer, ver, tener, and hacer from the second conjugation, andar, estar from the first conjugation, and decir, venir from the third conjugation are linked together in terms of the concepts of LEXICAL DIFFUSION (Wang, 1969), LINEAR ORDER (Newton, 1970), and RULE SCHEMA INTERRUPTION (Foley, 1977).

Note that the rules of Metathesis, Vowel Reduction, and

Vowel Raising proposed by Foley (1965:Chap.4) to account for the forms of the verbs haber, saber, and caber, had already been suggested in a very simple way by Cuervo (1881:82).

In 2.2., I will present and comment on Foley's analysis of the verbs haber, saber, and caber. I will show that since the data considered in Foley's analysis is very limited, the set of phonological rules that he proposes is not totally adequate.

In conclusion, Cuervo's observations summarized in this subsection show once again that Bello's analysis with respect to the verbs haber, saber, and caber accounts only for those phenomena which are observable at the level of surface structure representation. In fact, Bello has classified the irregular verbs in Spanish in a very idiosyncratic way.

Cuervo's observations, on the other hand, support the morphophonological analysis which will be presented in chapter 3 of this thesis. In this analysis, I will propose underlying representations for the present indicative, present subjunctive, and preterite indicative of the three irregular verbs mentioned above which in fact are very similar to the forms given by Cuervo. I will also propose a set of phonological rules which apply gradually through the lexicon following the concept of LEXICAL DIFFUSION (Wang, 1969). Spirantization, β -deletion, and Vowel Contraction represent a phonological process which is

still active in the derivation when other rules such as Glide Formation, Yod Deletion, Metathesis, Vowel Reduction, and Lenition come into operation. This is based on LINEAR ORDER of applying phonological rules (Newton, 1970) and also on the principle of RULE SCHEMA INTERRUPTION (Foley, 1977). This analysis will account for the interrelationship observed not only in the verbs haber, saber, and caber but also in traer, placer, poder, poner, tener, ver, and hacer from the second conjugation, estar, andar from the first conjugation, and decir, venir from the third conjugation. Thus, one of the most important conclusions will be that the verb haber cannot be considered an isolated verb or a completely idiosyncratic verb, contrary to what Bello (1881:150) and Harris (1969:97) have claimed.

2.2 ANALYSIS PRESENTED BY FOLEY (1965).

This second section deals with a generative analysis of the verbs haber, saber, and caber presented in Foley (1965). He discusses the glide increments /y/ and /w/ involved in the underlying representations and proposes a set of phonological rules to explain the consonantal alternation [p-β] observed in the present indicative and present subjunctive forms of the verbs saber and caber and the vowel alternation [a-u] observed in the preterite indicative of the three verbs haber, saber, and

caber.

In this section, I will present and comment on Foley's analysis. I will show that his analysis is very limited since the data taken into consideration is limited. In fact, only the verb caber is analyzed with reference to the present indicative and only two verbs, i.e. saber and caber with reference to the present subjunctive. Other forms are excluded from consideration.

I will extend Foley's analysis to the omitted forms of the verbs haber and saber in the present indicative and to the verb haber in the present subjunctive and I will demonstrate that the set of phonological rules that he proposes is not adequate and that the way these rules apply in the derivation of these forms is not sufficient to describe and derive the correct phonetic outputs of all the forms of the three verbs under analysis.

In chapter 3 of this thesis, I will present an analysis that is not only observationally adequate but also descriptively adequate. I will demonstrate that the verbs haber, saber, and caber, as well as the verbs traer, placer, poder, poner, responder, querer, tener, ver and hacer from the second conjugation, estar, andar from the first conjugation, and decir, venir from the third conjugation are linked together in terms of shared morphophonological processes that operate gradually on

various forms of the paradigms of these lexical items. The above mentioned verbs are also related in the sense that they are subject to phonological rules which are still active in the derivation when other rules which also apply to these forms come into operation.

2.2.1 Presentation and Comments.

Let us now present Table 19 with the present indicative forms of the verb caber:

TABLE 19. Verb CABER, with root /kap/. Present Indicative.

(1) quepo [képo]	(4) cabemos [kaβémos]
(2) cabes [káβes]	(5) caben [káβen]
(3) cabe [káβe]	

With respect to the forms (1-5) presented in Table 19 above, Foley observes:

- a. That in the first person singular the radical vowel is e, while in the other forms it is a;
- b. That the final radical consonant is p in (1), while in the others it is b;

c. That although the k of the first person singular is followed by a front vowel e, it does not become č contrary to the stridency rule:

(23) $k \implies \check{c} / ___ [i, e]$

d. That, although the p of the first person singular is intervocalic, it does not lenite to b by the lenition rule:

(24) $[-cont] \implies [+voice] / V ___ V$

e. That the vowel e in (1) [kepo] does not diphthongize by the rule:

(25) $\begin{bmatrix} \check{e} \\ \check{o} \end{bmatrix} \implies \begin{bmatrix} ye \\ we \end{bmatrix} / \frac{\quad}{\text{stress}}$

Foley assumes that the underlying form of (1) quepo is /kaypo/ since the rule for converting ay to e is already well motivated as shown by the following derivation:

(26)	Spanish	leche [leče]	"milk"
		lakte	(underlying form)
		la ^h kte	Gravity assimilation.
		layte	Glide formation.
		lay ^h ke	Palatalization.
		ley ^h ke	Glide assimilation.
		lē ^h ke	Glide lengthening.
		lē ^h če	Stridency.
		leče	Shortening.

This analysis has the following advantages:

- a. No extra rules are necessary to go from /kaypo/ to [képo];
- b. Quepo [képo] now has the same radical vowel a which appears in the other forms;
- c. The radical k in /kaypo/ does not become č when stridency applies, because the initial k is followed by a, as in the forms (2-5) of the present indicative;
- d. The radical p in /kaypo/ does not lenite to b because it is not intervocalic, but rather preceded by a y glide;
- e. That the root of caber [kaβér] is cap- and not cab- may be seen from the erudite Spanish forms capacidad "capacity" and capaz "capable" as well as captar "to get, to win", where lenition does not occur because the root cap- is followed by a t increment.

The only remaining problem is the source of the y in /kaypo/ and

why it does not occur in the forms (2-5) of the present indicative in Table 19. Foley argues that, just because it appears at this stage on the left of the radical p, it does not mean that it originated there. As an example, he states that in confundir "to confuse", contundir "to bruise" and prender "to seize" the nasal increment n ²¹ did not originate to the left of the final radical consonant d, but rather was affixed to the root

(27) con + fud +n+ ir =====> con + fudn +ir
 con + tud +n+ ir =====> con + tudn +ir
 pred +n+ er =====> predn +er

with subsequent metathesis if the root ended in an obstruent stop, but not otherwise:

(28) con + fudn +ir =====> con + fund +ir
 con + tudn +ir =====> con + tund +ir
 predn +er =====> prend +er

As Foley (1965:64) correctly observes, the n of the infinitive forms in (28) above does not appear in their corresponding past participle forms:

(29) Infinitive	Past Participle
confundir "to confuse"	confuso "debatable"
contundir "to bruise"	contuso "bruised"
prender "to seize"	preso "seized"

Furthermore, the n does not appear in derivatives such as:

- (30) fundir "smelt", fusor "smelting ladle", fusión "fusion".
 tundir "shear", tusón "fleece".
 prender "seize", prisión "seizure".

All of this indicates, according to Foley, that the n is not part of the root but rather is an increment which is added to it.

Now, observe a second set of forms considered by Foley (1965:65):

(31) Infinitive	Past Participle
pretender "pretend" - pretenso "pretended"	
suspender "suspend" - suspenso "suspended"	

In this case, Foley points out that the n which appears in the infinitive forms also appear in the past participles as well as in the following derivatives:

(32) pretender "pretend", pretensión "pretension".
 tender "stretch out", tensión "tension".
 suspender "suspend", suspensión "suspension".
 pender "hang", pensión "pension".²²

Consequently, Foley claims that there are two different types of roots. For the set of verbs in (31) above the roots contain nasals, that is, the roots are tend-, and pend-. The n which is part of the root then appears in all related words such as those in (32). However, for the set of verbs in (29) above the nasal is not part of their roots. The roots are fud-, tud-, and pred-, and no nasal appears in derivatives such as those in (30). Therefore, according to Foley, the nasal which appears in the infinitive forms of (29) is an increment which is added to the root as shown in (27) and (28) above.

Thus, what has been presented above with respect to nasal increments suggests, according to Foley, that the glide /y/ in /kaypo/ and the /n/ in /konfundir/ are closely related in the sense that both elements are not part of their roots cap- [kap-] and confud- [konfud-] but rather increments that have been metathesized from /kap-y-o/ and /konfud-n-ir/.²³

Foley claims that the glide y appears in the underlying representation of the present indicative forms (1-5) given in

Table 19 above, but when followed by a front vowel, it is deleted by the y-deletion rule:

(33) $y \implies \emptyset / \text{---} [i, e]$

When followed by a back vowel, as in the first singular form, it is not deleted. Let us consider the derivations for (1) quepo and (2) cabes:

TABLE 20.

(1) /kap-y-o/	(2) /kap-y-es/	(underlying form)
---	káp-es	Y-deletion.
káyp-o	---	Metathesis.
---	káb-es	Lenition.
---	---	Stridency fails.
kéyp-o	---	Glide assimilation.
kép-o	---	Glide lengthening.
---	---	Diphthongization.
kép-o	---	Shortening.
[képo]	[kábes] ²⁴	Phonetic output.

As can be observed, the correct phonetic outputs [képo] and [kábes] are derived by the phonological rules presented above in derivations (1) and (2). However, the particular character of the glide /y/ which appears in the underlying forms (1-5) is not motivated in Foley's analysis.

In chapter 3 of this thesis, I will propose that the underlying representations of the forms of the verbs haber, saber, and caber show an /i/ in the present indicative and

present subjunctive and an /u/ in the preterite indicative instead of /y/ and /w/ as proposed by Foley (1965:64). Then, one of the important differences between these three irregular verbs and the pattern verbs of the second conjugation can be attributed to the presence of a different theme vowel in the underlying representations. This analysis is predicated on the assumption that we have a rule of Glide Formation /i,u/ ==> [y,w] / _ V in our phonology of Spanish which applies in prevocalic position. Thus, I will argue that it is better in terms of the whole system of Spanish phonology to postulate underlying /i/ and /u/ increments.

Let us further examine the present subjunctive forms of the verbs caber and saber as analyzed by Foley (1965).

TABLE 21.

Verbs caber and saber, with roots /kap/ and /sap/.

Present Subjunctive:

(1) quepa	[képa]	sepa	[sépa]
(2) quepas	[képas]	sepas	[sépas]
(3) quepa	[képa]	sepa	[sépa]
(4) quepamos	[kepámos]	sepamos	[sepámos]
(5) quepan	[képan]	sepan	[sépan]

According to Foley, these forms also illustrate the failure of lenition, and raising and lengthening of the radical vowel. As an example, consider the first person singular (1) of both verbs saber and caber:

TABLE 22.

(1) /kap-y-a/	/sap-y-a/	(underlying form)
--- káyp-a ---	--- sáyp-a ---	Y-deletion fails. Metathesis.
--- kéyp-a ---	--- séyp-a ---	Lenition fails. Stridency fails.
kép-a ---	sép-a ---	Glide assimilation. Glide lengthening.
kép-a ---	sép-a ---	Diphthongization fails. Shortening.
[képa]	[sépa]	Phonetic outputs.

Consider now the preterite forms of the three verbs:

TABLE 23.

Verbs caber "to fit (into)" (with root /kap/)

saber "to know" (with root /sap/)

haber "to have" (with root /hab/)

Preterite Indicative:

- | | | | | | |
|--------------|-----------|----------|------------|----------|------------|
| (1) hube | [úβe] | cupe | [kúpe] | supe | [súpe] |
| (2) hubiste | [uβíste] | cupiste | [kupíste] | supiste | [supíste] |
| (3) hubo | [úβo] | cupo | [kúpo] | supo | [súpo] |
| (4) hubimos | [uβímos] | cupimos | [kupímos] | supimos | [supímos] |
| (5) hubieron | [uβyéron] | cupieron | [kupyéron] | supieron | [supyéron] |

Foley analyzes the forms (1-5) in the preterite of these verbs and notes:

- a. That the radical vowel in the preterite forms is not a as in the present indicative forms, but rather y;
- b. That the radical p in the forms (1-5), for instance [kúpe] and [súpe], is not lenited to β although it is intervocalic.

In light of these facts, Foley assumes that there is a glide increment /w/ which both prevents Lenition of the radical p and also accounts for the raising of the radical vowel. Thus, the underlying form of [kúpe] is /kap-w-e/. After Metathesis, the radical a + w will raise to o by the Glide Assimilation rule

just as y raised a to e in form (1) [képo]. (See Table 19 above).

$$(34) \begin{bmatrix} -\text{cons} \\ +\text{voc} \\ -\text{long} \end{bmatrix} \implies \begin{bmatrix} -\text{compact} \\ \alpha\text{grave} \end{bmatrix} / \text{---} \begin{bmatrix} -\text{cons} \\ -\text{compact} \\ \alpha\text{grave} \end{bmatrix}$$

Then ow becomes long ō just as ey becomes long ē by the rule which lengthens a vowel followed by a glide and then drops the glide:

(35) Glide Lengthening (Foley):

$$\begin{bmatrix} -\text{cons} \\ +\text{voc} \\ -\text{long} \end{bmatrix} + \begin{bmatrix} -\text{cons} \\ -\text{voc} \end{bmatrix} \implies [+long] + \emptyset$$

However, why the radical vowel in these preterite forms is the vowel [u] is not clear for Foley, since the [e] in (1) [képo] of Table 19 did not go to [i], but rather remained [e].

As a solution to this problem, Foley proposes a special ad hoc rule called Preterite diffuseness rule

(36) Preterite radical vowel \implies [+diffuse]

which raises the long radical vowel ō to u as shown in the derivation of the first person singular (1) cupe [kúpe]:

TABLE 24.

(1)	/kap-w-e/	(underlying form)
	káwp-e	Metathesis.
	---	Lenition fails.
	kówp-e	Glide assimilation.
	kōp-e	Glide lengthening.
	kūp-e	Preterite diffuseness.
	kúp-e	Shortening
	[kúpe]	Phonetic output.

This analysis is also extended by Foley (1965:70) to the corresponding preterite forms of the verbs saber and haber. As an illustration, consider the first person singular hube [úpe] and supe [súpe] with their respective derivations:

TABLE 25.

(1)	/hab-w-e/	/sap-w-e/	(underlying form) ²⁵
	háwb-e	sáwp-e	Metathesis.
	---	---	Lenition fails.
	hówb-e	sówp-e	Glide assimilation.
	hōb-e	sōp-e	Glide lengthening.
	---	---	Diphthongization.
	hūb-e	sūp-e	Preterite diffuseness.
	húb-e	súp-e	Shortening.
	húβ-e	---	Spirantization
	úβ-e	---	h-deletion.
	[úpe]	[súpe]	Phonetic outputs.

As has been presented thus far, Foley's analysis derives the correct phonetic representations of the present indicative forms of the verb caber, the present subjunctive forms of caber and saber, and the preterite forms of caber, saber and haber. However, as was shown above, the nature of the increments as /y/ and /w/ is not completely justified by Foley and the rule of Metathesis, which has operated to give [káypo] from /kap-y-o/ and [káwpe] from /kap-w-e/ is not formalized.

In chapter 3, we will show that it is better in terms of the overall phonological picture of Spanish to postulate underlying /i/ and /u/ increments. These vowel increments are motivated by us on the basis of the rule of Glide Formation which applies to all unstressed high vowels when they are in prevocalic position as can be observed in the following alternations:

viv-ir	[biβ-ír]	/	viv-i-endo	[biβ-y-éndo]
añad-ir	[aɲað-ír]	/	añad-i-endo	[aɲað-y-éndo]
reun-ir	[rewn-ír]	/	reun-i-endo	[rewn-y-éndo]
		/	reun-i-ón	[rewn-y-ón]
hu-ir	[u-ír]	/	hu-y-endo	[u-y-éndo]

Assuming that Glide Formation applies before Lenition and Spirantization in the derivation of the forms of haber, saber,

and caber, it will explain why the /p/ in [káp-y-o] (= quepo [képo]) and [káp-w-o] (= cupo [kúpo]) does not lenite to [b]. Note that generally Spirantization only occurs in intervocalic position as shown in [biβír] "to live" and [aɣaðír] "to add". However, at least in my dialect, this rule does not take place between a vowel and a glide as can be observed in deuda [déwda] "debt", viviendo [bibyéndo] "living" and añadiendo [aɣadyéndo] "adding". Observe also the following examples in which the glides precede the consonants [b] and [d]:

Maracaibo	[marakáybo]	"Maracaibo"
jaiba	[xáyba]	"joke" (Venez.)
deuda	[déwda]	"debt"

All of this indirectly supports our claim that it is better in terms of the whole system of Spanish phonology to postulate vowel increments /i/ and /u/ instead of glide increments /y/ and /w/ in underlying representation. It is clear that there might be need to examine the morphological status of increments. But since this is not relevant to our thesis, we only concern ourselves with the function of the phonological rules.

I will now extend Foley's analysis to the omitted forms of the verbs haber and saber in the present indicative and to the verb haber in the present subjunctive. I will demonstrate that this analysis is unsatisfactory since the data on which it is

based is limited, that the set of phonological rules that Foley proposes is inapplicable to the omitted forms, and that the way these rules apply in the derivation is not sufficiently adequate to describe and generate the correct phonetic outputs of the present indicative, present subjunctive, and preterite indicative forms of the three verbs haber, saber and caber.

2.2.2 Critique.

Assuming with Foley (1965) that the root for caber is cap and the root for saber is sap, and that the underlying forms of the first person singular in (1) of Table 19 are /kap-y-o/ and /sap-y-o/ respectively, the phonetic output will be correct in the first case but not in the second as can be observed in the corresponding derivations given below:

TABLE 26.

(1) /kap-y-o/	/sap-y-o/	(underlying form)
---	---	y ==> Ø / __ [i,e]
káyp-o	sáyp-c	Metathesis.
---	---	Lenition fails.
---	---	Stridency fails.
kéyp-o	séyp-o	Glide assimilation.
kēp-o	sēp-o	Glide lengthening (Foley)
---	---	Diphthongization fails.
kép-o	sép-o	Shortening
[képo]	*[sépo]	Phonetic output.
	[sé]	Correct form.

Let us further assume with Foley that the root for haber is hab, and the underlying representation of the first person singular he is /hab-y-o/. Then, the phonetic output will be wrongly derived in this case as was the case in the first person singular form of the verb saber. This is shown in the following derivation:

TABLE 27.

(1)	/hab-y-o/	(underlying form)
	---	y ==> Ø / __ [i,e]
	háyb-o	Metathesis.
	---	Lenition fails.
	---	Stridency fails.
	héyb-o	Glide assimilation.
	hēb-o	Glide lengthening.
	---	Diphthongization fails.
	héb-o	Shortening.
	éb-o	h-deletion.
	éβ-o	Spirantization.
	*[épo]	Phonetic output.
	[é]	Correct form.

Since the correct phonetic form of the first person singular of saber is sé and of haber is he instead of *sepo and *hebo respectively, this is a clear indication that Foley's analysis of the present indicative of the three verbs involves serious problems.

However, further examination of the analysis proposed by

Foley (1965:chap.4) demonstrates what happens when it applies to the forms of the verb haber in the present subjunctive. Foley assumes that the underlying representations corresponding to the first person singular (1) in Table 21 are /kap-y-a/ for quepa and /sap-y-a/ for sepa and that the correct phonetic outputs will be derived if the set of phonological rules proposed for the present indicative also applies to the present subjunctive. Even though his analysis was shown to be inadequate with respect to the present indicative forms of the verbs haber and saber in the last two derivations given above, it is correct in the case of the present subjunctive of saber and caber as was presented in Table 22.

However, Foley's analysis is again inadequate for generating the present subjunctive forms of the verb haber. As an illustration, consider the first person haya [áya] from an underlying representation such as /hab-y-a/:

TABLE 28.

(1)	/hab-y-a/	(underlying form)
	---	y ==> \emptyset / __ [i,e]
	háyb-a	Metathesis.
	---	Lenition fails.
	---	Stridency fails.
	héyb-a	Glide assimilation.
	hēb-a	Glide lengthening.
	---	Diphthongization fails.
	héb-a	Shortening.
	é̄b-a	h-deletion.
	é̄β-a	Spirantization.
	*[é̄βa]	Phonetic output.
	[áya]	Correct form.

Since the correct phonetic output of the first person singular of the verb haber is [áya] instead of *[é̄βa], this is another indication that Foley's analysis is not able to account for the alternations manifested by the verbs haber and saber in the present indicative and the present subjunctive. As noted by Foley himself, there is apparently no explanation for these forms. (See Foley, 1965:71) Additionally, Bello's (1881:150) and Harris' (1969:97) positions coincide with Foley's claim that the verbs haber and saber have very peculiar irregularities. However, in chapter 3, I will show that there is an explanation for these variations in the present indicative and present subjunctive of these forms and further, I will demonstrate that the verbs haber, saber and caber, as well as traer, placer,

poder, poner, responder, querer, ver, tener and hacer from the second conjugation, estar, andar from the first conjugation, and decir, venir from the third conjugation are in fact explanatorily linked by LEXICAL DIFFUSION of phonological processes (Wang, 1969). Also, the vowel and consonantal alternations observed in the preterite of all the verbs mentioned above can be accounted for if we assume the concept of LINEAR ORDER of applying phonological rules (Newton, 1970) or the principle of RULE SCHEMA INTERRUPTION (Foley, 1977).

Foley's analysis does not create any problems vis à vis the forms of the preterite indicative of the verbs haber, saber and caber, as can be observed in the derivations of Tables 24 and 25 above. This is because these verbs share more regular alternations in this tense than in the present indicative and the present subjunctive. However, a new problem does arise, viz. the postulation of a special ad hoc Preterite Diffuseness rule which raises the long radical vowel /ō/ to [ū] in all the preterite forms of Table 23 above. Foley does not explain why such a special rule is devised for some forms, and not others; he does not formulate this particular rule in order to show whether the vowel /ō/ becomes [ū] only before labials /p/ and /b/, or whether there are in fact some other consonants which occur in this environment. Moreover, he does not say anything about whether or not there are more examples of verbs, nouns,

etc. in which the vowel /o/ also becomes [u], as is the case, for example, in the third conjugation verb morir "to die", preterite indicative murio [muryó] "he died".

In chapter 3, I will propose and formulate a phonological process which accounts for the vowel alternations [a-u] observed not only in the verbs haber, saber and caber but also in the preterite relic forms of the second conjugation verbs traer and placer. The same phonological process will account for the vowel alternations [o-u] of the second conjugation verbs poder, poner and responder and also for the vowel alternations [e-i] of the verbs querer, ver from the second conjugation and decir, venir from the third conjugation. This analysis will also show that all the above mentioned verbs as well as hacer, tener from the second conjugation and estar, andar from the first conjugation are related in terms of the three important concepts of LEXICAL DIFFUSION (Wang, 1969) and (Chen and Wang, 1975), LINEAR ORDER of applying phonological rules (Newton, 1970), and the principle of RULE SCHEMA INTERRUPTION (Foley, 1977).

According to Foley's rule of diphthongization presented in (25) above, the short mid vowels of Spanish diphthongize when stressed. That is, the phonemic representation has a short /õ/ or a short /ě/ underlying the diphthongs [yé] and [wé]. This means that Foley distinguishes five short and five long vowels as was the case in Latin. Now, observe the derivations given in

Tables 22 and 25 above and see that the only function of Glide Lengthening and Shortening is first to lengthen the vowels /ě/ and /ǒ/ to prevent Diphthongization and then neutralize them to account for the appearance of the single vowels [e] and [u] in the phonetic representations [képo] and [kúpo]. If Glide Lengthening did not apply, according to Foley, the incorrect phonetic outputs *[kyépo] and *[kwépo] would be generated. This is the reason for postulating two extra rules, i.e. Glide Lengthening and Shortening in the derivations of these forms.

However, Lema (1978:17) argues that the two sets of vowels contrasting in the feature [+/- length] were posited by Foley because of the particular formulation of diphthongization and of the stress rule. In chapter IV, Lema demonstrates that the feature [+/- length] is not necessary and that diphthongization in Spanish can in fact be described without recourse to this distinction. Furthermore, Lema presents some counterexamples to the stress rule proposed by Foley showing that it is not able to account for all the data of Spanish, and suggests that it must be possible to postulate a stress rule that does not require information concerning vocalic length.

In light of Lema's arguments, I will assume that glide lengthening and shortening are rules completely unnecessary to account for the particular case of vowel and consonantal alternations observed in the forms of the verbs haber, saber and

caber.

To summarize, it has been shown in this second section that Foley's analysis concerning the second conjugation verbs haber, saber and caber is unsatisfactory in that

- a. the data taken into consideration is limited. In fact, only the verb caber is analyzed with reference to the present indicative and only two verbs, i.e. saber and caber with reference to the present subjunctive. Other forms are excluded from consideration. Furthermore, the set of phonological rules that Foley proposes is not applicable and the way these rules apply in the derivation of these forms is not sufficient to describe and derive the correct phonetic outputs of all the forms of the three verbs under analysis;

- b. the nature of the increments as /y/ and /w/ is not completely justified by Foley and the rule of Metathesis, which has operated to give [káypo] from /kap-y-o/ and [káwpe] from /kap-w-e/ is not formalized in order to show that the nature of radical consonants is involved in this process. We argued that it is better in terms of the overall phonological picture of Spanish to postulate underlying /i/ and /u/ increments. These

vowel increments are motivated on the basis of the rule of Glide Formation which applies to all unstressed high vowels when they are in prevocalic position;

c. Foley (1965) does not explain why the special Preterite Diffuseness rule is devised for some special forms, and not others; he does not formulate this particular rule in order to show whether the vowel [o] becomes [u] only before the labials /p/ and /b/, or whether there are in fact some other consonants which occur in this environment; and

d. that, given Lema's arguments that the feature [+/-length] is not required in Spanish and that Diphthongization can in fact be described without recourse to this distinction, Glide Lengthening and Shortening are rules completely unnecessary to account for the particular case of vowel and consonantal alternations observed in the forms of the verbs haber, saber and caber.

2.3 ANALYSIS PRESENTED BY CRESSEY (1972).

In his article "Irregular Verbs in Spanish", Cressey (1972) presents a generative analysis of the Spanish irregular verbs haber, saber and caber as well as of certain other verbs from the first, second, and third conjugations.

Cressey hypothesizes that there is a substantial number of verbs having irregular conjugations which must be accounted for in terms of exception features associated with their lexical entries. He makes the claim that, among these verbs which require special marking, there is a large subset whose phonetic shapes can be explained in terms of the informal concept of athematicity, that is, the absence of the theme vowel at a point in the derivation when it would normally be present.

For the purpose of establishing the claim that athematicity is a relevant linguistic feature in Spanish, Cressey begins by briefly summarizing two cases of athematicity which have been discussed in previous work, and then he suggests analyses of two other classes of irregular verbs in terms of the same concept. In addition, Cressey attempts to show that his analyses have certain implications for the overall theory of generative phonology.

This section is divided into two subsections. The first

subsection deals with the first case of athematicity summarized by Cressey (1972). This first case involves an analysis of the irregular past participles abierto "opened", cubierto "covered", muerto "died", vuelto "returned", suelto "loose", escrito "written", puesto "put", dicho "said" and hecho "made". I will argue against Cressey's assumption that these irregular past participle forms undergo Theme Vowel Deletion (Harris' rule (4:34b), 1969:130) in spite of the fact that they do not meet the normal structural requirement of the rule. I claim that the phonological rule which explains the irregular forms mentioned above is not a minor case of Harris' Theme Vowel Deletion rule, contrary to Cressey's proposal, but part of a more general phonological process which also accounts for the vowel deletion in the future and conditional forms of the irregular verbs haber, saber, caber, poder, querer, valer, tener, poner, salir, vender, hacer and decir.

In 3.1.5., I will formulate a rule which deletes the vowel /e/ in the irregular imperative forms pon "put" from /pon+e/, ven "come" from /bent+e/, ten "have" from /tent+e/, sal "get out" from /sal+e/, dí "say" from /dik+e/, and haz "make" from /akte/. This Vowel Deletion rule is part of the rule which applies to the irregular past participle, future and conditional forms listed above. It will also be shown in 3.1.5. that the same process of Vowel Deletion has operated in the history of nouns

such as sol "sun" from Lat. sole, sal "salt" from Lat. sale, mar "sea" from Lat. mare.

The second case of athematicity presented by Cressey refers to the set of irregular future tense forms habré, sabré, cabré, podré, querré, valdré, tendré, pondré, saldré, vendré, haré, and diré as analyzed by Harris (1969:96). Since this analysis was already discussed and illustrated in 2.1.2.1., I will refer to it only to suggest that Harris' rule that deletes the theme vowel in these irregular future and conditional forms must be considered a case of a more general phonological process which, as I stated earlier, can also explain the irregular past participles taken into consideration by Cressey with respect to the first case of athematicity.

Section 2.3.2. presents the third case of athematicity discussed in Cressey (1972). He postulates two phonological rules as minor cases of a raising rule proposed by Harris (1969:109). According to Cressey, these rules explain why non-low vowels in irregular preterite forms of verbs such as venir "to come", poder "to be able", and poner "to put" are raised and tensed wherever they happen to be in the verb form.

I will present Cressey's analysis, demonstrate why it is extremely limited, and show that his raising rule does not express any valid generalization.

2.3.1 Athematicity in irregular participles.

The first case of athematicity deals with a set of irregular past participles discussed in Foley (1965). If the past participle ending is assumed to be -to rather than -do²⁶, the irregular forms listed in Table 29 below can be explained, according to Cressey, by assuming that the theme vowel has been deleted before voicing of intervocalic stops occurs:

TABLE 29.

INFINITIVE	UNDERL. FORM	P.PARTICIPLE	
abrir	/aper+i+to/	abierto	"opened" ²⁷
cubrir	/cuper+i+to/	cubierto	"covered"
morir	/mor+i+to/	muerto	"died"
volver	/volv+e+to/	vuelto	"returned"
escribir	/scrip+i+to/	escrito	"written"
poner	/pos+e+to/	puesto	"put"
decir	/dik+i+to/	dicho	"said"
hacer	/ak+e+to/	hecho	"made"

In order to derive the correct phonetic representations of these past participles, Cressey assumes the underlying forms given in Table 29 and the rules of Palatalization, Voicing, y-deletion, and Diphthongization proposed by Foley (1965) and Harris (1969). As an illustration, let us observe the corresponding derivations for the regular form amado "loved" and the irregular forms muerto and dicho given by Cressey:

TABLE 30.

Underl. Forms:	am+a+to	mor+i+to	dik+i+to
Th.Vowel Del.	-	∅	∅
Palataliz.			y c
Voicing	d		
y-deletion			∅
Diphthongiz.		we	
Phonet. outp.	[amádo]	[mwérto]	[díčo] ²⁸

In regards to these derivations, Cressey says: "Although Harris lists Palatalization (rule 12) before Theme vowel deletion (rule 13), I am not aware of any case which depends crucially upon this ordering. Therefore, we can assume tentatively that the order of these two rules can be reversed as shown above, without affecting the rest of the grammar". (Cressey, 1972:238) First of all, Harris does not order Palatalization with respect to Theme Vowel Deletion in the derivation of forms such as dicho and hecho. In fact, the phonemic representations of these irregular forms proposed by Harris are /dik+to/ and /hak+to/ (see Harris, 1969:169) with no theme vowel before the participial ending /+to/. Therefore, Theme Vowel Deletion, as stated by Harris (V ==> ∅ / +__+ [+tense]), cannot apply to the underlying forms of irregular past participles because there is no vowel to delete

in them.

On the other hand, if we assume, as Cressey does, that there is a vowel in the underlying representation of the past participle forms, Theme Vowel Deletion has to be ordered before Palatalization. That this is the case can be seen by examining the following derivations:

TABLE 31.

Underl. Forms:	/dik+i+to/	/ak+e+to/
Palataliz.	---	--
Theme V. Del.	---	--
y-deletion	---	--
Phonet. outputs:	*[dikíto]	*[akéto]

Palatalization, as stated by Harris (1969:170), converts k to y before t or s and changes t to č and s to š after y. Note that this rule can not apply in derivations given in Table 31 above because of an intervening theme vowel. Neither does Theme Vowel Deletion apply because the condition that a vowel be deleted if followed by a tense vowel is not fulfilled. Since t of the participial ending -to of both forms in Table 31 was not converted to č by Palatalization, y-deletion, i.e. the rule that deletes y before the alveolopalatal š and č, can not apply either.

Consequently, Cressey's assumption that the order of

Palatalization and Theme Vowel Deletion are reversed (as shown in Table 30 above) has still to be proved in order to derive the correct phonetic representations. However, one can equally well argue that Palatalization is a rule that is interrupted by Theme Vowel Deletion in terms of the principle of RULE SCHEMA INTERRUPTION (Foley, 1977). From this point of view, Palatalization can apply at different times in the same derivation and another rule such as Theme Vowel Deletion may interrupt the expansion of the rule schema. Another possibility is to assume that Palatalization is a rule which applies at two different stages in the derivation in terms of LINEAR ORDER (Newton, 1970).

The analysis of the irregular past participles, according to Cressey, is carried out in terms of a lexical feature which stipulates that these forms undergo Theme Vowel Deletion in spite of the fact that they do not meet the normal structural requirement of the rule. Thus, Cressey adds to Theme Vowel Deletion proposed by Harris (1969) a second case which is designated as a minor rule: (both Harris' rule and Cressey's minor rule are given below)

(37) Theme Vowel Deletion:

V ==> ∅ / +__ +	V	
	[+tense]	a)
	... MINOR	b)

Case (a) of rule (37) above deletes the theme vowel present in the underlying forms of the irregular present subjunctive such as /am+a+e/ (ame "I love") and in the first person singular of the present indicative /am+a+o/ (amo "I love") when it is followed by a tense vowel. The theme vowel is not deleted in forms such as /am+a+s/ (amas "you love") because what follows the theme vowel is a consonant. Case (b) applies, according to Cressey, only to those lexical items given in Table 29 above which are specially marked to undergo it. Thus, this rule does not apply to a form such as /am+a+tc/ "loved" because this is a regular past participle and therefore it is not lexically marked to be subject to it.

Nevertheless, Cressey does not explain why the vowel is deleted in the past participle forms. Moreover, no environment for the rule is specified in case (b) of rule (37). Furthermore, Cressey does not motivate his assumption that these irregular forms are subject to a rule in spite of the fact that they do not meet its normal requirement.

I will demonstrate that it is possible to postulate a different and less abstract analysis in which the participial forms do meet the structural requirement of the rules that account for them, contrary to Cressey's claim. All of this will support my claim that the process which explains these irregular

forms is not a minor case of Harris' Theme Vowel Deletion rule, but a more general rule which is phonologically conditioned. Thus, observe the underlying representations given in Table 32:

TABLE 32.

INFINITIVE	UNDERL. FORM	PAST PARTICIPLE	
a) abrir	/apEr+i+to/	abierto	[aβyérto]
cubrir	/kupEr+i+to/	cubierto	[kuβyérto]
morir	/mOr+i+to/	muerto	[mwérto]
b) volver	/bOlβ+e+to/	vuelto	[bwélto]
escribir	/skrip+i+to	escrito	[eskρίto]
c) poner	/pOns+e+to/	puesto	[pwéstto]
d) decir	/dik+i+to/	dicho	[díçto]
hacer	/ak+e+to/	hecho	[éçto]

Before establishing what the phonological rules are and how they apply to these forms, I will make the following assumptions:

- a. The past participle morpheme of the Spanish regular and irregular verbs in the underlying representation must be /+to/. It remains as [to] in subsets (a-c) given in Table 33 above, and the /t/ is palatalized to /ç/ in both forms of subset (d). [çto] occurs only in the regular past participle forms when preceded by a vowel as in [amáçto] "loved";

- b. The element between the two morpheme boundaries (+__+) in the underlying forms of Table 32 is a vowel. This vowel will be /e/ if the verb belongs to the second conjugation as volver, poner, and hacer; it will be /i/ if the verb is from the third conjugation as are the rest of verbs in Table 32. Note that the same vowels appear in the underlying forms given by Cressey (1972) as in Table 29 above. The difference is, however, that the vowels are deleted not because they are theme vowels but because they occur in certain environments that will be specified later on in the analysis;
- c. Phonological rules such as Stress, Palatalization, Cluster Simplification, Lenition, Diphthongization, and y-deletion are not discussed in this subsection. They will be assumed to be as formulated in Foley (1965), Foley (1978) and Harris (1969).

Let us now present in Table 33 below the corresponding derivations of subset (a) of Table 32:

TABLE 33.

Underl. Forms:	/apEr+i+to/	/kupEr+i+to/	/mOr+i+to/
1. Vowel del.	apErto	kupErto	mOrto
2. Lenition	abErto	kubErto	--
3. Spirantiz.	aβErto	kuβErto	--
4. Stress	aβÉrto	kuβÉrto	mÓrto
5. Diphthongiz.	aβyéрто	kuβyéрто	mwérto
Phonet. outputs:	[aβyéрто]	[kuβyéрто]	[mwérto]

First, vowel deletion (rule 1) applies to the three forms of Table 33 deleting the vowel /i/ between /r/ and /t/ across two morpheme boundaries. This rule is ordered before Lenition and Spirantization in order to prevent the /t/ of the participial morpheme -to from being lenited to [d]. Rule 1 is formulated in (38) below:

(38) Vowel deletion (first version):

i ==> ∅ / r+ _____ +t

Then, the /p/ of /apErto/ and /kupErto/ is lenited to [b] and spirantized to [β] since it is intervocalic when these rules apply. The segment /p/ of the first underlying form can be phonologically motivated from the surface apertura "opening", and aperitivo "aperitif" Lat. aperire. The /p/ of /kupErto/

comes from Lat. cooperire "to cover". Note that the /t/ of the participial ending /+to/ does not undergo rules (2-3) because it is not intervocalic in the derivation when these rules apply.

The rule of Diphthongization, as stated by Harris (1969:163) and by Foley (1965:60), applies to the particular mid-vowels /E/ and /O/, that is, /e,+D/ and /o,+D/ when they are stressed. Consequently, Stress (rule 4) has to be ordered before Diphthogization (rule 5) given in Table 32.

Observe now derivations given in Table 34 below which are the forms of subset (b) in Table 32:

TABLE 34.

Underl. Forms:	/b0lb+e+to/	/skrib+i+to/
1. Vowel Deletion	b0lbto	skribto
2. Assim. of /b/ to [p]	b0lpto	skripto
3. Assim. of [p] to [t]	b0ltto	skritto
4. Cluster simpl.	b0lto	skrito
5. Stress	b0lto	skrito
6. Diphthongization	bwélto	--
7. Epenthesis	---	eskrító
Phonet. outputs:	[bwélto]	[eskrító]

After Vowel Deletion has applied to all forms in Table 34, Assimilation (rule 2) converts /b/ of [bolbto] to [p], giving

[bolpto]. This second rule also applies in [absorbto] from /absorb+e+to/ (note alternation absorber "absorb" / absorto "absorbed, amazed"), giving [absorpto]. Then, Assimilation (rule 3) and Cluster Simplification (rule 4) convert [pt] to [tt] and [tt] to [t] in these participle forms in order to account for the consonantal alternations observed in Table 35 below:

TABLE 35.

vol[b]er	"return"	vuel[∅]to	"returned"
absor[b]er	"absorb"	absor[∅]to	"absorbed"
absol[b]er	"absolve"	absuel[∅]to	"absolved"
escri[b]ir	"write"	escri[∅]to	"written"

However, the analysis presented in Table 34 can be simplified if Vowel Deletion formulated in (38) above is rewritten as (39):

(39) Vowel Deletion (second version):

$$\begin{bmatrix} i \\ e \end{bmatrix} \implies \emptyset / \begin{bmatrix} l \\ r \end{bmatrix} C_0 + _ + t$$

and rule (40) is proposed:

$$(40) \begin{bmatrix} p \\ b \end{bmatrix} \implies \emptyset / \begin{bmatrix} l \\ r \end{bmatrix} (V) _ + t^2$$

Thus, let us observe forms of subset (b) again in Table 36 below:

TABLE 36.

Underl. Forms: /b0lb+e+to/ /skrib+i+to/

1. Vowel del.	b0lbto	skribto
2. p/b-deletion	b0lto	skrito
3. Stress	bó'lto	skríto
4. Diphthong.	bwélto	-
5. Epenthesis	--	eskrító ³⁰

Phonet.outp. [bwélto] [eskrító]

Rules (39) and (40) have to be in this order to account for the consonantal alternation observed in the forms of Table 35 above. The analysis proposed in Table 36 also applies to the irregular past participles absuelto and absorto of the verbs absolver "to absolve" Lat. absolvere derived from solvere "to loosen" and absorber "to absorb" Lat. absorbere derived from sorbere.

Vowel Deletion given in (39) above has to be reformulated if we consider the past participle form puesto of the verb poner given in subset (c) of Table 32 above. Let us present its corresponding derivation:

TABLE 37.

Underl. Form:	/pOn+st+e+to/
1. Vowel Del.	pOnsto
2. n ==> \emptyset / _ sC	pOsto
3. Stress	pÓsto
4. Diphthong.	pwésto
Phonet. output:	[pwésto]

As can be observed in Table 37 above, the theme vowel is not preceded by a liquid but rather by an intervening /s/ and a nasal. Therefore, Vowel Deletion given in (39) above is rewritten in (41):

(41) Vowel Deletion (third version):

$$\begin{bmatrix} e \\ i \end{bmatrix} \implies \emptyset / \begin{bmatrix} l \\ r \\ n \end{bmatrix} C_0 + ___ + t$$

Note that after Vowel Deletion applies in the derivation of Table 37, the /n/ of [pOnsto] is deleted by a general rule that also operated on Lat. mensa "table", giving Spanish [mésa]. In fact, the underlying /s/ occurs only in the preterite indicative puse [púse] and in the past participle form puesto. In the other forms of the verb poner, the stem is /pon-/. I will return

to this point in 3.2.3. where the preterite forms of the verbs poder, poner and responder will be discussed.

Finally, the past participle forms dicho and hecho presented in subset (d) of Table 32 above can be derived as shown in Table 38:

TABLE 38.

Underl. Forms:	/dik+i+to/	/ak+e+to/
1. Vowel Deletion	dikto	akto
2. /k/ =>[y] / _ [t] [s]	diyto	ayto
3. [t] =>[č] / y _ [s] [š]	diyčo	ayčo
4. [ay] => [ey]	--	eyčo
5. [y] =>∅ / _ [č]	dičo	ečo
Phonet. outputs	[dičo]	[ečo]

Vowel Deletion given in (41) above has to be reformulated in such a way that it deletes the theme vowel in the forms /dik+i+to/ and /ak+e+to/ presented in Table 38. The final version of this rule is given in (42):

(42) Vowel Deletion (final version):

$$\begin{bmatrix} e \\ i \end{bmatrix} \implies \emptyset \left/ \begin{bmatrix} l \\ r \\ n \\ k \end{bmatrix} \right. C_0 + _ + t$$

Rules (2-5) are proposed by Harris (1969:170). The first three operate in the derivation of [éxe] "axle" from /akse/ and [léče] "milk" from /lakte/. The phonological process represented by rule 5 is called "absorption", i.e. the high nonback glide /y/ is deleted or "absorbed" by another high nonback segment as proposed in Harris (1969:172). Rules (2), (3) and (5) also operate on /nokte/, giving [nóče] "night".

In this subsection, I have presented an analysis in which the irregular past participle forms of the verbs abrir, cubrir, morir, volver, escribir, poner, decir, and hacer meet the structural requirement of the rules that account for them, contrary to what Cressey (1972) has claimed. The theme vowel which is present in the underlying representations of these irregular past participles is deleted not because it is a theme vowel but rather because it occurs in certain phonological environments.

The rule of Vowel Deletion proposed in this subsection is assumed to be part of a more general phonological process. The

front vowels /e/ and /i/ which are deleted after /r/, /l/, /n/ and /k/, and preferentially before /t/ in the past participle forms are also deleted after /l/ and /n/ in the irregular imperative forms pon "put", ten "have", ven "come", and sal "get out" of the verbs pon[é]r, ten[é]r, ven[í]r, and sal[í]r respectively. I will return to this point in 3.2.5. The same process of Vowel Deletion has operated after the segments /l/ and /r/ in the history of nouns such as sol "sun" from Lat. sōle, sal "salt" from Lat. sale, mar "sea" from Lat. mare.

2.3.2 Athematicity in Irregular Preterites.

The third case of athematicity discussed in Cressey (1972) is the set of irregular preterite forms listed in Table 39 below, and the present indicative and subjunctive of the verbs hacer and decir. My criticism is concerned only with the irregular preterites which are given along with the infinitives of the verbs in question:³¹

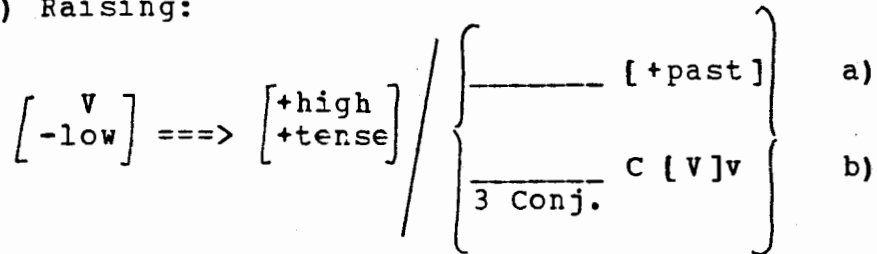
TABLE 39.

INFINITIVE	1. sg.		3. sg.	
venir	vine	[bíne]	vino	[bino]
poder	pude	[púde]	pudo	[púdo]
poner	puse	[púse]	puso	[púso]
saber	supe	[súpe]	supo	[súpo]
caber	cupe	[kúpe]	cupo	[kúpo]
estar	estuve	[estúpe]	estuvo	[estúpo]
andar	anduve	[andúpe]	anduvo	[andúpo]
tener	tuve	[túpe]	tuvo	[túpo]
haber	hube	[úpe]	hubo	[úpo]
traer	traje	[tráxe]	trajo	[tráxo]
decir	dije	[díxe]	dijo	[díxo]
hacer	hice	[íse]	hizo	[íso]

With regard to the forms presented above, Cressey has observed:

- a. That the stress pattern of the irregular preterites in Table 39 above differs from that of the regular verbs such as comer "to eat", first p. sg. com[í] and third p. sg. comi[ó]; and
- b. That the root o's of poder and poner cannot be raised to u by either case of the following rule proposed by Harris (1969:109), since Harris' rule only applies to theme vowels:

(43) Raising:



As a starting point for the analysis, Cressey considers Harris' derivations for the regular first and third person singular preterite forms amé "I loved", amó "he loved", comí "I ate", and comió "he ate". The derivations are as follows:

TABLE 40.

	am+a+ĩ	am+a+ũ	com+e+ĩ	com+e+ũ
Raising (1) ³²			i	i
Theme V.Del. (13)	-	-	-	-
Stress (16)	á	á	í	í
Assimilation (18)	é	ó		
High Del. (22)	∅	∅	∅	
Stress shift (27)				i ú
Lowering (28)				ó
Glide form. (37)				y
Phonet.outputs:	[amé]	[amó]	[comí]	[ccmyó]

In these derivations, Cressey points out that Harris' Theme Vowel Deletion (rule 13) fails to apply to the first and third

person singular forms because their endings are lax /i/ and /u/, and this rule applies only before a tense vowel.

Returning to the irregular forms such as vine [bíne] (1st. p.sg.) and vino [bíno] (3rd. p.sg.), Cressey claims that the most natural way to explain why the stress pattern of these forms differs from that of the regular verbs would be to assume that only these two persons are athematic and that the endings for the irregular preterites are tense rather than lax. Thus, in order to account for the athematicity and tenseness of the forms in Table 39 above, Cressey proposes a case (c) as a minor case of Harris' raising rule, which applies only to irregular preterites: (the entire rule is repeated below)

(44) Raising:

$$\begin{array}{l}
 \left[\begin{array}{c} V \\ -low \end{array} \right] \implies \left[\begin{array}{c} +high \\ +tense \end{array} \right] \left/ \left\{ \begin{array}{l} \text{----- } [+past] \\ \text{----- } C [V]v \\ \text{3 Conj} \\ \text{----- } \# \text{ MINOR} \\ \text{----- } [+past] \end{array} \right. \right. \begin{array}{l} \text{a)} \\ \text{b)} \\ \text{c)} \end{array}
 \end{array}$$

Consider now the derivations for the forms of venir presented by Cressey:

TABLE 41.

	ven+i+ĩ	ven+i+ste	ven+i+ũ	ven+i+mos	ven+i+ron
(1b)	i	i	i	i	i
(1c)	ĩ		ũ		
(13)	∅		∅		
(16)	í	í	í	í	í
(25)					é
(26)					yé
(28)	e		o		

Ph.O. [v'ine] [vin'iste] [v'ino] [vin'imos] [viny'éron]³³

Rule (1b) raises the vowel of third conjugation verb roots; (1c) tenses the first and third person singular endings of irregular preterites, thus allowing Theme Vowel Deletion (13) to apply to these forms. Rule (16) then assigns stress to the root vowel of these two forms as well as to the theme vowel of all the others. Rules (25) and (26) account for the diphthong in the third person plural form in the same manner as for regular verbs; and finally, rule (28) lowers the final vowels of the first and third person singular producing the correct phonetic outputs vine and vino.

Thus, Cressey concludes that the formulation presented so far explains in a straightforward way why the irregular

preterites should be athematic only in two forms, rather than throughout the entire paradigm. In other words, as Cressey has claimed, the key difference between regular and irregular preterites is seen to be the athematicity of the first and third person singular forms.

Let us consider the raising rule presented in (44) in greater detail. According to Harris (1969:116), rule (44) with the feature [D], mnemonic for diphthongization, instead of [+tense] is similar to historical rules and, given this similarity, [D] corresponds to [-<tense], that is, [+D] vowels are historically "short" or "lax" and [-D] vowels are historically "long" or "tense". However, Harris does not identify [+D] as [-tense] and [-D] as [+tense] in the synchronic grammar that he develops because he does not believe that this can be justified exclusively on the basis of synchronic data unless general theoretical constraints can be found to justify such a decision.

Also, Harris points out that if the Latin Stress Rule in fact plays a role in assigning stress in Spanish, then it is perhaps from this rule that the most powerful theoretical argument can be adduced for the synchronic identification of [D] as [-<tense] since vowel quantity, i.e. the tense-lax distinction, and the derivative notions "strong" and "weak" syllable figure crucially in the rule.

Nevertheless, Lema (1978:17) presents an argument to show that the Latin Stress Rule postulated by Harris (1969) and also by Foley (1965) cannot account for some basic facts of Spanish that are clearly explained by the Spanish Stress Rule.³⁴ This argument is based on the interaction of Epenthesis in initial position and Stress.³⁵ Lema also shows that the Spanish Stress Rule is superior to the Latin Stress Rule not only in terms of the data but also in terms of the formulation of the rules and of their implications concerning morphological structure.³⁶ Thus, given Lema's argument that the Latin Stress Rule cannot account for all the data of Spanish, the identification of [\leftarrow D] as [- \leftarrow tense] may not be theoretically justified.

In fact, Harris does not suggest any other general theoretical consideration that may provide sufficient motivation for making such an identification. Harris himself claims: "I will use the feature [tense] rather than [D], but only to reduce terminological strangeness". Furthermore, Navarro (1965:41-42) points out that there is absolutely no correlation between historically tense and lax vowels and phonetically tense and lax vowels in Modern Spanish. For example, Spanish sol, with lax o, comes from Latin sōle, with tense o, while Spanish pecho, with tense e, comes from Latin pectu, with lax e.

From the discussion presented so far, we can conclude that

the identification of [D] is completely arbitrary. I will now present and comment on the raising phonological process formulated in Lema (1978:100). I will argue that this is a superior process to that given in (44) above in terms of the formulation of the rule. Lema's rule is given in (45) below. Part (a) applies in diphthongs, that is, sequences /oe/ and /ee/ become /ue/ and /ie/ respectively. Part (b) applies only to regular third conjugation verbs:³⁷

$$(45) \quad \begin{bmatrix} e \\ o \end{bmatrix} \implies \begin{bmatrix} i \\ u \end{bmatrix} \left/ \left[\begin{array}{l} \text{---} e \\ \text{---} C_0 \quad V \\ \text{III Conj} \quad -\text{high} \end{array} \right. \right. \begin{array}{l} a) \\ b) \end{array}$$

Part (b) of this rule is superior to case (b) of rule (44) presented above. Rule (45) is simpler because it is formulated without recourse to the distinction of vocalic length.³⁸ As Lema points out, the raising rule (45) shows that raising is equivalent to vocalic dissimilation. The mid-vowel of the stem of third conjugation verbs raises when the next vowel is [-high] as can be observed in [píde] and [pída], and remains [-high] when the next vowel is [+high]. The result is that third conjugation Spanish verbs that have an underlying /e/ or /o/ in the root as seen in /ped+ir/ "to ask for" and /mor+ir/ "to die" and that follow regular behavior, change /e/ to /i/ and /o/ to /u/ so as to always differ from the following vowel in the

feature [+/-high].

Even though cases (a) and (c) of the raising rule (44) account for the data presented in Tables 40 and 41, the inclusion of lax and tense vowels in their underlying structures is not independently motivated. In other words, there is no reason for assuming lax vowels as the endings of first and second conjugation verbs such as amar and comer, and tense vowels as the endings of third conjugation verbs such as venir. Without the feature [tense], which is not theoretically justified, both cases (a) and (c) would not play any role in a raising rule such as (44). Furthermore, the minor case (c) complicates this rule by repeating the feature [+past].

Let us now consider the second question posed by Cressey (1972) with regard to the irregular preterites given in Table 39 above.

Cressey assumes that the analysis of the second conjugation verb saber in terms of w increment rules proposed in Foley (1965) is correct and needs no explanation. He also assumes that Foley's analysis can be applied to the verbs tener "to have", caber "to fit (into)", haber "to have", and andar "to walk" as well.

Note that we have already demonstrated that Foley's analysis is not completely correct as Cressey assumes. But what

is important for Cressey is the fact that the root o's of poder and poner cannot be raised to u by either case of Harris' rule nor by case (c) of Cressey's represented in rule (44) above. Consequently, in order to account for this [o-u] alternation, Cressey proposes what he calls "a strange combination of (a), (b), and (c)", that is, case (d) which is expressed in (46) below:

$$(46) \left[\begin{array}{c} \text{V} \\ -\text{low} \end{array} \right] \implies \left[\begin{array}{c} +\text{high} \\ +\text{tense} \end{array} \right] / \text{--- } C_0 \text{V}[+\text{past}] \text{ MINOR (d)}$$

According to Cressey, rule (44) and (46) as a whole expresses a generalization which reads as follows:

(47) "Non-low vowels in irregular preterites are raised and tensed wherever they happen to be in the verb form."

First of all, it is not possible to combine cases (a) through (d) of the raising rules (44) and (46) in a way that eliminates repetition of the feature [+past] and the configuration $C_0 \text{V}$. Therefore, case (d) complicates even more the notational system of rule (44). Secondly, the raising rules (44) and (46) as formulated by Cressey do not express the generalization stated in (47) above. In fact:

a. Rules (44) and (46) do not explain why the root a's of haber, saber, caber, placer, and traer from the second

conjugation are raised to u in the preterite forms;

- b. Rules (44) and (46) do not account for the appearance of the vowel u in the preterite forms estuve and anduve from the first conjugation verbs estar and andar, and in the preterite tuve from the second conjugation verb tener;
- c. The [a-i] alternation observed in h[a]cer / h[i]ce of the second conjugation verb hacer "to make" cannot be handled by either case of the raising rule represented in (44) and (46) above.

FOOTNOTES TO CHAPTER 2.

- 1 See footnote 21 of chapter 1.
- 2 It will be shown in chapter 3 that these relic forms v[í]de and v[í]do become regular v[í] and vi[ó] (like tem[í] and temi[ó]) when Spirantization and \check{d} -deletion, as well as a contraction rule have applied to them.
- 3 The relic verbal forms vide and vido and the standard forms ví and vió will be explained in chapter 3 of this thesis. (See also footnote 2 above)
- 4 I interpret "simple stem" as defined by Matthews (1974:40): "..., that is, which consists of a root alone with no additional elements".
- 5 In Foley's theory, the term schema means "a statement of a phonological process which is an abbreviation for the expansion into phonological rules under the conditions prescribed by the inequality condition". (See Foley, 1977:144)
- 6 I will return to this point in chapter 3. Special consideration will be directed towards discovering what is involved in the identity of the future endings -é, -ás, -á, -emos, -án, and the present indicative forms of haber. Also in chapter 3, I will show that there can be no doubt about the formation of the future tense, not only in

Spanish, but also in Portuguese, Italian, and French, via addition of the present indicative forms of haber to the infinitive of all verbs without exception.

7 It is important to note here that these five verbs have a g affixed to the root in the first person singular of the present indicative forms val-g-o , ten-g-o, pon-g-o, sal-g-o, and ven-g-o. The development of the velar g in these forms as well as in their corresponding present subjunctive forms valga, tenga, ponga , salga, and venga is explained by Hooper (1974:38-43) in terms of a process of analogical extension. Since this problem is not relevant to the analysis presented in this thesis, I will leave it aside.

8 Subgroup (c) will receive special treatment in this section.

9 As can be observed in rule (4), Harris has characterized the liquid [l] with the feature [-cont]. According to Chomsky and Halle (1968:318), if the defining characteristic of the stop is taken as total blockage of air flow, then [l] must be viewed as a continuant and must be distinguished from [r] by the feature of laterality. If, on the other hand, the defining characteristic of stops is taken to be blockage of air flow past the primary stricture, then [l] must be included among the stops. Thus, Harris has characterized the liquid [l] as well as

the nasal [n] as dentals following the second point of view stated by Chomsky and Halle.

10 Rule (4) can be combined to handle intrusive consonants such as those observed in the derivation of hombre from *homre *homne Latin homine because rule (4) is a synchronic rule. The inserted consonant is entirely predictable from surrounding segments; it takes on the place of articulation features of the preceding segment. In the case of vendré and valdré, the inserted consonant is a dental because the preceding segments are /n/ and /l/ respectively. In the case of hombre, the inserted consonant is a bilabial because the preceding underlying segment is /m/.

11 The capital /E/ in (7) is the e assumed by Harris for the infinitives. The coincidence of two facts suggests that the underlying representation of infinitives has a final e: a) Infinitives will have regular penultimate stress if there is a final vowel when rule (8b), i.e. stress assignment, is reached; and b) precisely e actually occurs phonetically in the plural of nominalized infinitives: andares "walks", amanecerés "dawns", decires "sayings". (See Harris, 1969:74)

12 Only part (b) of rule (8) is relevant to the analysis here.

13 The final e of infinitives, according to Harris (1969:75),

must be /E/, that is, [e,+D], since neither second conjugation thematic [e] as in quiere "he wants" nor first conjugation subjunctive [e], both of which are known not to be /E/, is deleted in word-final position after a single dental consonant.

14 The underlying forms /dik+/ and /ak+/ will also be justified in chapter 3 of this thesis in which the preterite forms of the verbs decir and hacer are analyzed. In the case of the verb hacer, the underlying form will be treated simply as /ak+/, and in the derived verb satisfacer "to satisfy", the underlying form will be /fak+/. But since this does not have central relevance in this thesis, I will only mention that hacer is from /ak+/ and satisfacer is from /satisfak+/.

15 C₀ in the environment of Harris' rule given in (14) is necessary for deriving reimos [reímos] "we laugh" from /ridimos/, and reir [reír] "to laugh" from /ridír/ (observe Lat. ridēre "to laugh").

16 The whole process of handling the historical shifting of the Latin vowel system to Spanish is not centrally relevant in this thesis.

17 This Assibilation rule is formulated by Foley (1965:43). It accounts for alternations manifested in médico [médiko], medicina [medisína], and applies in the derivation of the present indicative forms of decir: dice

[díse], dices [díses], dice [díse], etc. This rule also applies in English in the case of the pair reciprocal-reciprocity in which the final consonant of the basic form reciproc- appears in one case as [k], in another as [s].

18 See chapter 1, p. 5 for the justification of the theme vowels /+i+/ in (17) and /+e+/ in (18).

19 There are phonetically two types of r in Spanish: a flap [r] as in caro [káro] "expensive", diré [diré] "I will say", decir [desír] "to say", hacer [asér] "to make", and a trill [r̄] as in carro [káro] "car".

20 Bello (1881:153) points out that the imperative form he is used only in expressions such as he aquí, he ahí "here is, here you have". Cuervo (1881:87), on the other hand, argues that the imperative forms are not in use in Modern Spanish, and that the form he in the expressions given by Bello has nothing to do with the verb haber, either in meaning or in form. According to Cuervo, he comes from fe that in turn comes from ve, the imperative of the verb ver "to see". In fact, whether or not the form he which appears in such expressions corresponds to the imperative form of haber is difficult to decide. However, this is not relevant to our analysis. The fact is that the imperative forms of haber are not in use in Modern Spanish. (See Real Academia Española, 1976:291)

21 Foley's analysis of nasal increments is relevant to the

argumentation presented in this thesis only with respect to the rule of Metathesis that will be discussed and formulated in chapter 3 of this thesis. This is the only reason for analyzing nasal increments in this section.

22 It is important to note here that verbs such as confundir and prender given in (29) as well as pretender and suspender given in (32) also have regular past participles confundido, prendido (meaning "lit" from prender "to light"), pretendido, and suspendido respectively. In the literature, these twin forms have been referred to as "doublets". Note also that although the n in prender "to seize" does not appear in prisión "seizure", it is observed in related forms such as aprensión "apprehension", aprensivo "apprehensive", (Lat. apprehendĕre "to apprehend"), comprensión "understanding", comprensivo "comprehensive" (Lat. comprehendĕre "to comprehend, to understand"), and prensa "press". This suggests that there might be a relationship here between the use of Gradual Diffusion of a phonological process such as n-deletion and Foley's increment analysis (1965). However, it is outside of the scope of this thesis to examine this idea further.

23 I do not consider Foley's arguments presented thus far to constitute a unique explanation. It will be possible to look at the n situation separately from /y/ and /w/

increments. Such an examination may then explain why the n appears in forms such as suspenseo, suspensión but not in confuso, confusión, prisión, impreso, etc. According to Menéndez Pidal (1968:136), the cluster /ns/ was simplified in Spanish, even if the syllable division came between the two consonants. This is the case for example in Sp. mesa "table" from Lat. mensa. Observe also that the Latin preposition trans "across" gives Mod. Sp. tras "behind".

24 Note that the number of rules proposed by Foley for deriving form (2) [káβes] is not enough. That is, Spirantization (b ==> β / V __ V) has to apply after shortening in order to obtain the correct result [káβes] instead of *[káβes]. As a matter of fact, that rule will also be used later on in the derivation of the preterite forms of the verb caber as well as of saber and haber.

25 Observe that the underlying /h/ in forms such as /hab-w-e/ is not motivated by Foley (1965).

26 The past participle morpheme -do occurs in the regular forms amado "loved" from the first conjugation, temido "feared" from the second conjugation, and partido "broken" from the third conjugation.

27 Note that the /e/ and the /o/ which appear in the underlying stems in Table 29 are the capital /E/ and the capital /O/ assumed by Harris (1969:75), that is, [e,+D] and [o,+D] respectively. We will use small /e/ and /o/ in

Cressey's derivations and capital /E/ and /O/ in our analysis from Table 32 on.

28 The rule of Spirantization has to be included for deriving [amádo] from [amádo].

29 The segment /p/ is needed in this rule in order to derive roto "broken" [róto] from /ropto/ of the verb romper.

30 Epenthesis also applies to /skala/ from Lat. scala "scale", giving escala [eskála].

31 The phonetic representations have been added to the paradigms given by Cressey (1972:239).

32 The numbers in parentheses next to names of rules refer to the cumulative list of ordered rules in Harris (1969:183).

33 Note that Cressey uses the orthographic y instead of the phonetic [b] in the surface representations.

34 The first version of the Spanish Stress Rule is represented in Lema (1978, section 2-1.4, p.15) and the rule is described in greater detail in chapter 3.

35 See counterexamples in Lema (1978:19).

36 See Lema (1978:64) for a detailed discussion of this.

37 Only part (b) of this rule is relevant for the discussion here.

38 Lema (1978:17) demonstrates that Diphthongization in Spanish can also be described without recourse to the distinction of vocalic length. (See also 2.2.2. in this chapter)

CHAPTER 3

A NEW ANALYSIS

3.1. HABER, SABER AND CABER.

This third chapter will deal with an analysis that explains primarily the alternation [a-u] observed in the three irregular second conjugation verbs haber, "to have", saber, "to know", and caber "to fit (into)" and the alternation [p-β] observed in saber and caber. It will be divided into two sections.

The first section presents an analysis of the subset of irregular verbs haber, saber and caber. I claim that these verbs are morphophonologically related and that they constitute a subgroup of verbs with similar alternations in the present indicative, preterite indicative, and present subjunctive, which are different from those manifested by the regular verbs of the

second conjugation.¹ This section will in turn be divided into four subsections. In 3.1.1., I will demonstrate what is involved in the identity of the future endings é, ás, á, emcs, án and the present indicative forms of the verb haber. I will show that the future indicative forms in Spanish are composed of the infinitive plus the present indicative forms of haber. I will also show that the case is the same in Portuguese, French and Italian. Since this can be shown to be the case, it in turn demonstrates that before the rules β -deletion and Vowel Contraction applied to the forms of haber at a deep level of the phonological derivation, the vowel and consonantal alternations were closely related to those of saber and caber.

In 3.1.2., I will propose a set of phonological rules to account for the vowel alternation [a-u] observed in these three verbs and for the consonantal alternation [p- β] observed in saber and caber. Among these rules, Lenition, Spirantization, β -deletion and Vowel Contraction are the most relevant for the derivations presented in this subsection. These rules represent a phonological process that has operated gradually through the lexical items of the verbs haber, saber and caber. I demonstrate that the present indicative forms of haber and the first person singular form of saber have been affected by most of the rules, that fewer rules have applied to the rest of the present indicative forms of saber and to the forms of caber, and that

the first person singular form quepo [képo] of the verb caber has not been affected by the phonological process. The consonant [p] which is still observed in the present indicative forms of caber is evidence that the above mentioned process either has lost some impetus at a certain period of time and has left a portion of the lexicon unaltered or is still to apply to the rest of the lexicon.

The phonological process has also operated gradually through the preterite indicative and present subjunctive forms of the three verbs. More phonological rules apply to the forms of haber, fewer rules operate on the forms of saber, and even fewer on the verb caber.

Moreover, I will show in 3.1.2. that the gradual application of the phonological process to the forms of these three verbs is grammatically conditioned. In fact, the forms of the verb haber have been more susceptible to the process than the rest of the verbs. This is due to the special and frequent use of haber as an auxiliary verb. By the same token, the forms of the verb saber are subject to special lexical or grammatical conditions and thus they are susceptible to being affected by more phonological rules than the forms of caber.

This subsection ends with the conclusion that the grammatical conditions for the phonological process that

operates gradually through the forms of the verbs haber, saber and caber have not become "relaxed" enough, in the sense of Wang (1969), in order to eliminate the alternations created in the sound system of this subgroup of verbs.

In 3.1.3., it will be demonstrated why Spirantization and β -deletion are allowed to apply at two different stages in the derivation of the forms of the verbs haber, saber and caber. I will assume the model of applying phonological rules as proposed by Newton (1970). According to Newton's model, phonological rules are still active in the derivation when other processes come into operation. Therefore, they can apply not only once but at any and every point in the derivation where their structural description is met.

Following Newton's model, I will propose that Spirantization and β -deletion apply to the forms of haber at t1 (time point 1), and only after other processes such as Glide Formation, Yod Deletion, Metathesis, Vowel Contraction and Lenition have operated to the forms of saber, do these two rules apply to the forms of saber at t2. The same phenomenon occurs with respect to the verb caber in the present indicative forms. This manner of applying phonological rules can account for the alternation [p- β] manifested by the the verbs saber and caber.

It will also be shown that the application of

Spirantization and β -deletion is similarly based on the principle of RULE SCHEMA INTERRUPTION proposed by Foley (1977). According to Foley, a phonological rule can apply at different times in the same derivation and another rule may interrupt the expansion of the rule schema. In the case of the verbs saber and caber, a sub-set of rules composed of Spirantization and β -deletion have been interrupted by Glide Formation, Yod Deletion, Metathesis, Vowel Reduction, Vowel Contraction and Lenition in the derivation of the present indicative forms. I conclude that if Spirantization and β -deletion are in fact two constant rules, in the sense of Newton (1970), or two interrupted rules, in the sense of Foley (1977), then it is clear that the forms of the verbs haber, saber and caber have been transformed, not all at the same time, but rather gradually, and that a portion of the lexicon has not yet been affected by the process, as shown by particular cases of the three verbs.

In 3.1.4., I demonstrate that the appearance of the intervocalic segment [β] in the infinitive, past participle, and past tense forms of the verbs haber, saber and caber can not be accounted for only by the parochial conditions for Spanish established by Foley (1977:32) which specify that intervocalic g and d drop while labial b remains. I will propose that a phonological condition dealing with stress and roundness of the

surrounding vowels² be added both to Foley's parochial conditions and to our analysis of lexical diffusion presented in this chapter.

The second section of this chapter will be concerned with six subsets of irregular first, second, and third conjugation verbs: a) haber, saber, and caber; b) placer "to please", and traer "to bring"; c) poder "to be able", poner "to put", and responder "to answer"; d) querer "to want", and ver "to see"; e) hacer "to make", decir "to say", and venir "to come"; and f) andar "to walk", estar "to be", and tener "to have".

It will be shown:

- a. That placer, and traer are morphophonologically related to the three verbs haber, saber, and caber because they share the alternation [a-u] in the preterite forms;³
- b. That poder, poner, and responder are also morphophonologically related to the same three verbs because of the raising of the root back vowel /o/ to [u] in the preterite indicative;
- c. That querer and ver which manifest a front vowel [e-i] raising alternation, constitute, therefore, a parallel with those eight verbs which show the back vowel [a-u], [o-u] alternations.

The rules of Metathesis, Vowel Reduction and Vocalic Raising will be formulated and motivated in order to account for the alternation [a-u] observed in the verbs haber , saber and caber. These rules will be formulated in such a way as to explain the alternation [a-u] observed also in the second conjugation verbs traer and placer, as well as the alternation [o-u] of the second conjugation verbs poder, poner and responder, and the alternation [e-i] of querer, ver from the second conjugation, and decir, venir from the third conjugation.

The set of phonological rules mentioned above, viz. Metathesis, Vowel Reduction, and Vocalic Raising, will show that all the verbs mentioned in the preceding paragraph are related to haber, saber and caber making up a sub-group of verbs with shared vowel and consonantal alternations in the preterite.

It will also be demonstrated in Section 2 why the first conjugation verbs estar "to be", and andar "to walk", and the second conjugation verb tener "to have" also have an [u] in their preterites and how they are, therefore, related to the verbs haber, saber, caber, as well as to the five subsets of verbs mentioned above.

In 2.1.2.1, I concluded that the third conjugation verb decir and the second conjugation verb hacer were a subset of related verbs in the future and the conditional forms since they

underwent the same phonological rules. I also concluded that the e of decir "to say", decimos "we say", and the i of diré "I will say", dije "I said", and dicho "said-past part." is an /i/ in the underlying representation. Thus, in 3.2.5., I will show that decir is also subject to the set of phonological rules which apply to the second conjugation verbs querer, hacer and ver in the preterite indicative.

The historical data and the standard data from other Romance languages such as Portuguese, French, Italian, and Catalan, which will be presented in this chapter support the kinds of rules, rule ordering, and underlying representations proposed in the analysis.

3.1.1 Future Endings and Present Ind. of HABER.

Before proposing the new analysis to account for the alternations observed in the verbs haber, saber and caber, I will first demonstrate that the future indicative forms in Spanish are composed basically of the infinitive plus the present indicative forms of haber. The same case will be observed in Portuguese, French, and Italian.

According to Crowley (1952:12), who has analyzed persistent Latinisms in some Old Spanish literary works, the Latin future

in -bo was replaced by the present indicative of habēre and the infinitive:

Latin: amabo > amare+habeo > amar+he > amaré "I will love".

This development is shown in El Poema del Mío Cid (1140):

Latin: dicere vos habeo > O.Sp. dezir uos he "I will tell you";

Latin: intrare+habetis > O.Sp. intraretis > intraredes "you will go";

Latin: audire+habetis > O.Sp. audretis > odredes "you will hear".

It also appears in Roncesvalles (1310):

Latin: facere+habet > facer+ha > farade⁴ "he will make";

Latin: venire+habet > venir+ha > venira > verná⁵ "he will come".

Grammarians have traditionally assumed that the future endings -é, -ás, -á, -emos, -án are not verbal endings in the usual sense but rather the present indicative forms of the verb haber. That is, the future tense is formed by adding the present indicative forms of haber to the infinitive of a verb. This assumption is based on historical facts such as those derivations given by Crowley. Stockwell, Bowen, and Martin (1965:146) agree with traditional grammarians that the future endings are in fact the present indicative forms of haber.

Harris (1969:92), also, supports this assumption, claiming "...that the traditional explanation is correct historically. Until the seventeenth century the future was expressed by the infinitive followed by the present of haber. These were written as two separate words, and object pronouns could come between them (as is still the case in Modern Portuguese): Seventeenth century dar me lo has versus Modern me lo darás 'you will give it to me'..."

Furthermore, Harris considers the synonymy of sentences such as:

(a) Ha de estar aquí ahora, and

"be here now"

(b) Estará aquí ahora.

"will be here now"

both meaning "he is probably here now"⁶ as suggestive synchronic evidence for the traditional analysis of future forms.⁷

Despite the facts presented so far, there is the possibility that the future endings have nothing to do with haber. If this possibility is accepted, the future endings -ré, -rás, -rá, -remos, -rán will then be attached to the same base as the other inflectional endings. This alternative, however, appears to be untenable unless we assume

- a. that in the case of suppletive verbs such as ir [ír] "to go": present indicative voy, vas, va, vamos, van; preterite fuí, fuiste, fué, fuimos, fueron; but future indicative iré, irás, irá, iremos, irán, it is fortuitous that the infinitive ir and the future have identical stems; and
- b. that the identical irregularities of the future endings and the present indicative forms of haber are a coincidence not only in Spanish but also in Portuguese, Italian, and French as shown in Table 42:

Table 42.

SPANISH		PORTUGUESE	
Future	Present	Future	Present
"accept"	"have"	"live"	"have"
ACEPTAR-é	he	VIVER-ei	hei
-ás	has	-ás	has
-á	ha	-á	ha
-emos	h (ab) emos	-emos	h (av) emos
-án	han	-ao	hao
ITALIAN		FRENCH	
Future	Present	Future	Present
"sleep"	"have"	"accept"	"have"
DORMIR-ò	o	ACCEPTER-ai	ai
-ai	ai	-as	as
-à	a	-a	a
-emo	abbiamo ^s	-ons	(av) ons
-anno	anno	-ont	ont

Thus, unless we accept the statements presented above, there is little doubt that the formation of the future tense in these four Romance languages is based on the addition of the present indicative forms of haber to the infinitive of all verbs without exception.

Consequently, I assume that the future endings are the result of applying β -deletion and Vowel Contraction to the

present indicative forms of haber.⁹ As further evidence for this assumption, note that [β] which is deleted and the vocalic group AE which is contracted remain in the first person plural of haber in the four languages shown in Table 42 above. This is a clear indication that before the rules β-deletion and Vowel Contraction applied to the forms of haber at a deep level of the phonological derivation, the vowel and consonantal alternations were closely related to those of saber and caber. All of this will constitute evidence for concluding that the verb haber cannot be considered an "isolated verb" (see Bello, 1881:150) or a "completely idiosyncratic verb" (see Harris, 1969:97) but rather a member of a group morphophonologically related to the verbs saber and caber. Their differences, as I will show in the analysis below, are explicable in terms of the Lexical Diffusion of the phonological rules to which they are subject. It is the assumption of the relevance of this idea that allows me to place the verbs under consideration in one class.

3.1.2 A New Analysis.

Given that [β] and the vocalic group AE remain in the first person plural form of the verb haber in Spanish as well as in Portuguese, Italian, and French, I assume that before the phonological rules β-deletion and Vowel Contraction apply to the

other forms of haber at a deep level of the phonological derivation, the vowel and consonantal alternations in the forms of haber were closely related to the forms of the verbs saber and caber.

Up to this point, we have been emphasizing the validity of the GRADUAL DIFFUSION hypothesis of phonological changes across the lexicon (Wang, 1969), and (Chen and Wang, 1975).¹⁰ We have claimed that this concept is centrally important. Now, we will proceed to present an analysis that shows that in fact the verbs haber, saber, and caber are linked together in the manner stated by the Gradual Diffusion hypothesis.

This hypothesis states, as explained by Sommerstein (1977:249), that a phonological change "...percolates gradually through the lexicon, now infecting one lexical item, now another, perhaps taking centuries to become complete, perhaps never becoming complete but losing impetus and leaving a scattering of lexical items as unaltered 'residues'..."¹¹ In fact, Chen and Wang (1975) present evidence drawn from the history of Chinese, English, and Swedish, as well as from language acquisition, to support the claim that a phonological change propagates itself gradually across the lexicon, from morpheme to morpheme.

I hypothesize that irregular alternations shared by the

Spanish verbs haber , saber, and caber may be explained in a fairly simple and natural way, if we adopt Wang and Chen's concept of Lexical Diffusion. If the analysis is correct, evidence from Spanish will lend further support to the diffusionist hypothesis.

Two concepts are fundamental with respect to the hypothesis of lexical diffusion:

- a. The temporal dimensions of a phonological process can be external and internal. The external time dimension is concerned with the relative chronology of phonological processes, that is, the external relation between rules in terms of time sequence. The internal time dimension deals with the chronological profile, (cf. Wang and Cheng, 1970) of the gradual evolution, and expansion or regression, of a single phonological process.
- b. The lexical dimensions of a phonological process. A phonological rule may operate, within a given period of time, in many different ways. For example:
 - 1) It gradually extends its scope of operation to a larger and larger portion of the lexicon, until all relevant items have been transformed by the process;

- 2) It may stop at a certain period of time and then continue affecting all relevant lexical items;
- 3) It may cease after it has operated over only a part of the lexicon, never becoming complete. In this case, we have an only partially successful sound change.
- 4) It may be thwarted by another rule competing for the same lexemes.

Wang (1969:13) claims that social linguistic conditions are involved in the way in which Lexical Diffusion may be directed or effected. I will argue below that, in the case of the Spanish verbs haber, saber and caber, there are in fact lexical or grammatical conditions that Wang and Chen have not considered. I will also show that two other important concepts are involved, i.e. the principle of RULE SCHEMA INTERRUPTION (Foley, 1977) and the LINEAR ORDER of applying phonological rules (Newton, 1970).

The analysis presented in this section will be concerned only with the second concept given in (b) above, i.e. the lexical dimensions of a phonological process. In other words, it will deal with a kind of process that has gradually been applying to the forms of the verbs haber, saber, and caber. A set of phonological rules applies to the verb haber, fewer rules to the forms of the verb saber, and even fewer rules to caber.

The set appears to have lost some impetus, as will be shown by forms which have not undergone the change. It is possible if not probable that the set of rules will eventually apply to those forms not yet affected by it. Furthermore, the above mentioned process has also been applying gradually to the tenses of the three verbs: a set of rules applies in the present indicative, fewer rules in the preterite, and even fewer in the present subjunctive.

I will use Table 43 below, which illustrates the basic paradigm of phonological change, in order to schematize the concept of Lexical Diffusion as proposed by Wang (1969):

Table 43.

Basic Paradigm of Phonological Change

	t1	t2	t3	t4	t5
C1	A	B	B	B	B
C2	A	A	B	B	B
C3	A	A	A	B	B
C4	A	A	A	A	B

where t stands for time and C for context. At the beginning of t1, segment A occurs in four distinct contexts, C1, C2, C3 and

C4. These contexts may be specified in either phonological or morphological terms. At t2, A has become B in the context C1, creating an alternation in the sound system. We may think of C1 as the primary context, as it is most likely the case that A is changed to B through an assimilatory process motivated by C1. All the morphemes which have A in the context C1 will not change at the same time, of course. Some of them may delay and change only after t3, or maybe even later.

What is of interest, according to Wang, is to determine whether such delays do or do not occur; and if they do, then to what extent.

I will argue in this section that the form habemos of the verb haber is a case of 'delay', in the sense of Wang, since it has not been affected by the particular phonological changes that applied to the other forms of the present indicative he, has, ha, han. The first person singular quepo [képo] in the present indicative of caber is another case in which the phonological change represented by Lenition and β-deletion has not operated.

In section 3.1.4., it will be demonstrated that the appearance of the intervocalic segment [β] in habemos and in the infinitive, past participle, and past tense forms of the verbs haber, saber and caber can be accounted for by the parochial

conditions for Spanish established by Foley (1977) which specify that intervocalic g and d drop while labial b remains, and also by a phonological condition dealing with stress and roundness of the surrounding vowels. I will propose that these conditions be added to our analysis of lexical diffusion presented in this thesis.

Table 43 above shows that by t5 all of the A's have changed into B's. That is, "the conditions for the change have relaxed until finally the change has become unconditioned". (cf. Wang, 1969:18)

Thus, Table 43 illustrates a phonological change that gradually extends its scope of operation to a larger and larger portion of the lexicon, until all relevant items have been transformed by the process.

One example of a phonological change which is still operating is represented by some English rules of vowel shortening which have been discussed recently by Kiparsky (1968:179). In Old English, vowels were shortened either before three consonants or before two consonants and two more syllables within the same word. Beginning in Early Middle English, the condition of this rule was simplified to either before two consonants or before one consonant and two more syllables within the same word. The latter rule, according to Kiparsky, is still

in operation as evidenced by such morphophonemic alternations as in sleep / slept and feline / felinity.¹²

According to Wang, if we take the English rules of vowel shortening to be synchronic manifestations of an underlying sound change, then we see that the deletion of a single consonant in the context of the rule has operated over roughly a thousand years.

An example of an unsuccessful sound change is given by Sturtevant (1917:76). He says that "in Latin there was at one time a tendency to lengthen short vowels before gn; people said dīgnus, sīgnum, īgnis, as well as dignus, signum, ignis. But... the pronunciation with a short vowel finally prevailed. In this case, the net result of the incipient change was to leave things as they were at first."

Wang (1969:16) claims that examples of unsuccessful sound changes are very interesting cases. When the morphemes affected by an unsuccessful sound change do not get changed back, Wang assumes, we have two classes of forms. Whether the new or the old forms should be considered regular is a question that depends in part on how unsuccessful the sound change has been.

A case of sound change of interest here is the loss of final -d in many words in Stockholm Swedish that was studied by Janson (1973). According to Janson, in words like ved "wood",

hund "dog", blad "leaf", röd "red", Stockholmers usually delete the [-d] in ordinary speech. The class of words that can undergo optional [-d] deletion is now much smaller than it was about a half-century ago. As determined from earlier descriptions, the final [-d] was disappearing in some Swedish dialects as early as the 14th century. In Stockholm speech, the deletion used to be possible for many more words, across several more grammatical categories. However, since it has been kept in the orthography, the resurgence of [-d] probably came as a result of the rapid rise in literacy in Sweden in recent decades. According to Wang, this is a case of lexical diffusion suddenly reversing its course, stimulated by social change. But in both the progressive and the regressive phase of the development of this change, the process appears to be lexically gradual.

Before presenting the phonological rules which account for the present indicative, present subjunctive, and preterite indicative forms of haber, saber and caber, I will make the following assumptions:

- a. the roots for haber, saber, and caber are /ab/, /sap/, and /kap/ respectively. The /p/ of the root /sap/ appears in all the preterite indicative, present subjunctive and preterite subjunctive forms such as supe "I knew", sepa "I know-subj." and supiera "I knew-subj."

The /p/ of the root /kap/ appears in the first person singular of the present indicative quepo "I fit (into)", in all the preterite indicative and subjunctive forms such as cupe "I fit (into)" and cupiera "I fit-subj.", and also in related words like capacidad "capacity";

- b. the future tense in Spanish is formed by adding the present indicative forms of haber to the infinitive of all verbs without exception as was demonstrated at the beginning of this chapter; (see Table 42)

- c. the underlying representations of the forms of haber, saber, and caber show an /i/ in the present indicative and present subjunctive and an /u/ in the preterite indicative instead of an /y/ and a /w/ as was proposed by Foley (1965). Then, the main difference between these three irregular verbs and the pattern verbs of the first and second conjugations¹³ can be attributed to the presence of a different theme vowel in the underlying representations. This can be observed in Table 44 below:

TABLE 44.

Present Indicative

1st.Conj. 2nd.Conj.

AMAR

COMER

am+/a/+o	kom+/e/+o
am+/a/+s	kom+/e/+s
am+/a/+o	kom+/e/+o

etc... etc...

Irregular verbs

HABER

SABER

CABER

ab+/i/+o	sap+/i/+o	kap+/i/+o
ab+/i/+es	sap+/i/+es	kap+/i/+es
ab+/i/+e	sap+/i/+e	kap+/i/+e

etc... etc... etc...

This is the main reason for assuming a vowel rather than a glide, unless the inclusion of glides in the underlying structure can be independently motivated. Furthermore, in 2.2.1. we argued that it is better in terms of the overall phonology of Spanish to postulate underlying /i/ and /u/ increments. These increments are motivated on the basis of the rule of Glide Formation which applies to all unstressed high vowels when they are in prevocalic position. (See Section 2.2.1. for examples and more details)

Let us now propose the phonological rules and the derivations corresponding to the forms of the present indicative, preterite indicative, and present subjunctive of the three verbs haber, saber, and caber as presented in Tables 45-53. Tables 45-47 deal with the present indicative forms of the three verbs. 48-50 present the corresponding forms of the preterite. 51-53 are concerned with the present subjunctive forms of the same three verbs:

FIRST DERIVATION: PRESENT INDICATIVE.

HABER "to have"

/abio/	/abies/	/abie/	/abemos/	/abien/	Underlying forms
ábío	ábies	ábie	abiémos	ábien	(Stress)
áβío	áβies	áβie	aβiémos	áβien	1. b ==> β / V _ V
áío	áies	áie	aiémos	áien	2. β ==> ∅ / V _ V
áyo	áyes	áye	ayémos	áyen	3. /i,u/ ==> [y,w] ¹⁴
---	ás	áe	aémos	áen	4. y ==> ∅ / _ e
---	---	---	---	---	5. Metathesis
éó	---	---	---	---	6. [a]+[w,y] ==> [o,e]
---	ás	á	émos	án	7. $\begin{bmatrix} \acute{a}e \\ \acute{a}e \end{bmatrix} ==> \begin{matrix} \acute{a} \\ \acute{e} \end{matrix}$
---	---	---	---	---	8. Lenition
---	---	---	---	---	9. b ==> β / V _ V
---	---	---	---	---	10. β ==> ∅ / V _ V
e	---	---	---	---	11. o ==> ∅ / V _ # ¹⁵
---	---	---	---	---	12. o ==> u
(1)	(2)	(3)	(4)	(5)	
[é]	[ás]	[á]	[émos]	[án]	Phonetic outputs

TABLE 45. Present Indicative of HABER.

SABER "to know".

/sapio/	/sapiēs/	/sapie/	/sapiēmos/	/sapien/	Underlying Forms
sápio	sápies	sápie	sapiémos	sápien	(Stress)
---	---	---	---	---	1. b ==> β / v _ v
---	---	---	---	---	2. β ==> ø / v _ v
sápyo	sápyēs	sápye	sapyémos	sápyen	3. /i,u/ ==> [y,w]
---	sápes	sápe	sapémos	sápen	4. y ==> ø / _ e
sáypo	---	---	---	---	5. Metathesis
sépo	---	---	---	---	6. [a]+[w,y,] ==> [o,e]
---	---	---	---	---	7. $\begin{bmatrix} \acute{a}e \\ ae \end{bmatrix} ==> \begin{matrix} \acute{a} \\ \acute{e} \end{matrix}$
sébo	sábes	sábe	sabémos	sáben	8. Lenition
séþo	sáþēs	sáþe	sapþémos	sáþen	9. b ==> β / v _ v
séo	---	---	---	---	10. β ==> ø / v _ v
sé	---	---	---	---	11. o ==> ø / v _ #
---	---	---	---	---	12. o ==> u /
(1)	(2)	(3)	(4)	(5)	
[sé]	[sáþēs]	[sáþe]	[sapþémos]	[sáþen]	Phonetic outputs

TABLE 46. Present Indicative of SABER.

CABER "to fit (into)"

/kápjo/	/kápjes/	/kápje/	/kápjémos/	/kápjen/	Underlying Forms
kápjo	kápjes	kápje	kápjémos	kápjen	(Stress)
---	---	---	---	---	1. b ==> β / v _ v
---	---	---	---	---	2. β ==> ø / v _ v
kápjo	kápjes	kápje	kápjémos	kápjen	3. /i,u/ ==> [y,w]
---	kápes	kápe	kapémos	kápen	4. y ==> ø / _ e
kápjo	---	---	---	---	5. Metathesis
képo	---	---	---	---	6. [a]+[w,y] ==> [o,e]
---	---	---	---	---	7. $\begin{bmatrix} \acute{a}e \\ \acute{a}e' \end{bmatrix} ==> \begin{matrix} \acute{a} \\ \acute{e} \end{matrix}$
---	kábes	kábe	kabémos	káben	8. Lenition
---	káβes	káβe	kaβémos	kaβen	9. b ==> β / v _ v
---	---	---	---	---	10. β ==> ø / v _ v
---	---	---	---	---	11. o ==> ø / v _ #
---	---	---	---	---	12. o ==> u
(1)	(2)	(3)	(4)	(5)	
[képo]	[káβes]	[káβe]	[kaβémos]	[káβen]	Phonetic outputs

TABLE 47. Present Indicative of CABER.

SECOND DERIVATION: PRETERITE INDICATIVE.

HABER.

/abue/	/abuiste/	/abuo/	/abuimos	/abuÉron/	Underlying Forms
ábue	abuíste	ábuo	abuímos	abuÉron	(Stress)
ápue	apuíste	ápuo	apuímos	apuÉron	1. b ==> β / v _ v
---	---	---	---	---	2. β ==> ø / v _ v
ápwe	apwíste	ápwo	apwímos	apwÉron	3. /i,u/ ==> [y,w]
---	---	---	---	---	4. y ==> ø / _ e
áwpe	awpíste	áwpo	awpímos	awpÉron	5. Metathesis
---	---	---	---	awpyéron	(Diphthongization) ¹⁶
ópe	opíste	ópoo	opímos	opyéron	6. [a]+[w,y] ==> [o,e]
---	---	---	---	---	7. $\begin{bmatrix} \acute{a}e \\ ae \end{bmatrix} ==> \acute{a} \\ \acute{e}$
---	---	---	---	---	8. Lenition
---	---	---	---	---	9. b ==> β / v _ v
---	---	---	---	---	10. β ==> ø / v _ v
---	---	---	---	---	11. o ==> ø / v _ #
úpe	upíste	úpoo	upímos	upyéron	12. o ==> u
(1)	(2)	(3)	(4)	(5)	
[úpe]	[upíste]	[úpoo]	[upímos]	[upyéron]	Phonetic outputs

TABLE 48. Preterite Indicative of HABER.

SABER.

/sapue/	/sapuiste/	/sápuo/	/sapuimos/	/sapuÉron/	Underlying Forms
sápue	sapuíste	sápuo	sapuimos	sapuÉron	(Stress)
---	---	---	---	---	1. b ==> β / V _ V
sápwe	sapwíste	sápwo	sapwimos	sapwÉron	2. β ==> ø / V _ V
---	---	---	---	---	3. /i, u/ ==> [y, w]
sáwpe	sawpíste	sáwpo	sawpimos	sawpÉron	4. y ==> ø / _ e
---	---	---	---	sawpyéron	5. Metathesis
sópe	sopíste	sópo	sopimos	sopyéron	6. [a]+[w, y]=>[o, e]
---	---	---	---	---	7. [áe] ==> á
---	---	---	---	---	8. Lenition
---	---	---	---	---	9. b ==> β / V _ V
---	---	---	---	---	10. β ==> ø / V _ V
---	---	---	---	---	11. o ==> ø / V _ #
súpe	supíste	súpo	supimos	supyéron	12. o ==> u
(1)	(2)	(3)	(4)	(5)	
[súpe]	[supíste]	[súpo]	[supimos]	[supyéron]	Phonetic outputs

TABLE 49. Preterite Indicative of SABER.

CABER.

/kápe/	/kapeiste/	/kape/	/kapeimos/	/kapeEron/	Underlying Forms
kápe	kapeíste	kápe	kapeímos	kapeÉron	(Stress)
---	---	---	---	---	1. b ==> β / v _ v
---	---	---	---	---	2. β ==> ø / v _ v
kápe	kapeíste	kápe	kapeímos	kapeÉron	3. /i,u/ ==> [y,w]
---	---	---	---	---	4. y ==> ø / _ e
kápe	kapeíste	kápe	kapeímos	kapeÉron	5. Metathesis
---	---	---	---	kapeyéron	(Diphthongization)
kópe	kopeíste	kópe	kopeímos	kopeyéron	6. [a]+[w,y]=>[o,e]
---	---	---	---	---	7. [áe] ==> á
---	---	---	---	---	[aé] ==> é
---	---	---	---	---	8. Lenition
---	---	---	---	---	9. b ==> β / v _ v
---	---	---	---	---	10. β ==> ø / v _ v
---	---	---	---	---	11. o ==> ø / v _ #
kúpe	kupíste	kúpe	kupímos	kupyéron	12. o ==> u
(1)	(2)	(3)	(4)	(5)	
[kúpe]	[kupíste]	[kúpe]	[kupímos]	[kupyéron]	Phonetic outputs

TABLE 50. Preterite Indicative of CABER.

THIRD DERIVATION: PRESENT SUBJUNCTIVE.

HABER.

/abia/	/abias/	/abia/	/abiamos/	/abian/	Underlying Forms
ábia	ábias	ábia	abiámos	abian	(Stress)
áp̄ia	áp̄ias	áp̄ia	aþiámos	áp̄ian	1. b ==> þ / v _ v
áia	áias	áia	aiámos	áian	2. þ ==> ø / v _ v
áya	áyas	áya	ayámos	áyan	3. /i,u/ ==> [y,w]
---	---	---	---	---	4. y ==> ø / _ e
---	---	---	---	---	5. Metathesis
---	---	---	---	---	6. [a]+[w,y] ==> [o,e]
---	---	---	---	---	7. $\begin{bmatrix} \acute{a}e \\ ae \end{bmatrix} ==> \begin{matrix} \acute{a} \\ e \end{matrix}$
---	---	---	---	---	8. Lenition
---	---	---	---	---	9. b ==> þ / v _ v
---	---	---	---	---	10. þ ==> ø / v _ v
---	---	---	---	---	11. o ==> ø / v _ #
---	---	---	---	---	12. c ==> u
(1)	(2)	(3)	(4)	(5)	
[áya]	[áyas]	[áya]	[ayámos]	[áyan]	Phonetic outputs

TABLE 51. Present Subjunctive of HABER.

SABER.

/sápia/	/sápias/	/sápia/	/sapiámos/	/sápian/	Underlying Forms
sápia	sápias	sápia	sapiámos	sápian	(Stress)
---	---	---	---	---	1. b ==> β / v _ v
---	---	---	---	---	2. β ==> ø / v _ v
sápya	sápyas	sápya	sapyámos	sápyan	3. /i,u/ ==> [y,w]
---	---	---	---	---	4. y ==> ø / _ e
sáypa	sáypas	sáypa	saypámos	sáypan	5. Metathesis
sépa	sépas	sépa	sepámos	sépan	6. [a]+[w,y] ==> [o,e]
---	---	---	---	---	7. $\begin{bmatrix} \acute{a}e \\ ae \end{bmatrix} ==> \begin{matrix} \acute{a} \\ e \end{matrix}$
---	---	---	---	---	8. Lenition
---	---	---	---	---	9. b ==> β / v _ v
---	---	---	---	---	10. β ==> ø / v _ v
---	---	---	---	---	11. o ==> ø / v _ #
---	---	---	---	---	12. o ==> u
(1)	(2)	(3)	(4)	(5)	
[sépa]	[sépas]	[sépa]	[sepámos]	[sépan]	Phonetic outputs

TABLE 52. Present Subjunctive of SABER.

CABER.

/kápa/	/kápas/	/kápa/	/kapiámos/	/kápian/	Underlying Forms
kápa	kápas	kápa	kapiámos	kápian	(Stress)
---	---	---	---	---	1. b ==> β / v _ v
---	---	---	---	---	2. β ==> ø / v _ v
kápa	kápas	kápa	kapyámos	kápian	3. /i,u/ ==> [y,w]
---	---	---	---	---	4. y ==> ø / _ e
kápa	kápas	kápa	kayámos	kápian	5. Metathesis
képa	képas	képa	kepámos	képan	6. [a]+[w,y] ==> [o,e]
---	---	---	---	---	7. $\begin{bmatrix} \acute{a}e \\ ae' \end{bmatrix} ==> \begin{matrix} \acute{a} \\ \acute{e} \end{matrix}$
---	---	---	---	---	8. Lenition
---	---	---	---	---	9. b ==> β / v _ v
---	---	---	---	---	10. β ==> ø / v _ v
---	---	---	---	---	11. o ==> ø / v _ #
---	---	---	---	---	12. o ==> u
(1)	(2)	(3)	(4)	(5)	
[képa]	[képas]	[képa]	[kepámos]	[képan]	Phonetic outputs

TABLE 53. Present Subjunctive of CABER.

Observe the forms of the present indicative of haber in Table 45. These lexical items have been subjected to phonological changes represented by the rules β -deletion (rule 2) and Vowel Contraction (rule 7). Note that these are the forms added to the infinitives of all Spanish verbs in order to form the future tense. (See Table 42 above)

The gradual application of this phonological process can be clearly observed in Table 46. in which the sound change (represented by rule 10) has affected only the first person singular of the verb saber, as shown by the phonetic output (1) [sé]. (Compare this form with the phonetic output (1) of Table 45.) In this case, the change has lost impetus leaving forms (2-5) unaltered since rule 10 has not applied to them.

In Table 47, we can see that the above mentioned process (rule 10) has not operated on any form of the verb caber .

Let us return to Table 45. Note that Spirantization (rule 1) has applied to all the forms of haber. Also in Table 46, all the lexical items have undergone the very same process represented here by rule 9. But in Table 47, the first person singular form [képo] has resisted the change as shown by the appearance of the underlying segment /p/.

That [képo] has not been affected by rule 9. is due to the

fact that Lenition (rule 8) has not applied in the derivation of this form. Since Lenition has applied to the forms of saber and caber, with the exception of [képo], it demonstrates that this process also involves gradualness.

Thus, what I have presented so far shows that, in the first case, the sound change represented by β -deletion and Vowel Contraction has lost impetus leaving forms (2-5) of the verb saber and all the forms of caber unaltered. In the second case, the sound change represented by Lenition and β -deletion has applied to all forms of the verbs saber and caber, except to [képo]. It is important to observe that the processes are not two different sound changes but rather one, composed primarily of Lenition, β -deletion, and Vowel Contraction.

The power of this phonological process is affected by lexical or grammatical reasons. It is also phonologically conditioned, i.e. the rules are interrupted in the sense of Foley (1977); they are allowed to apply at different stages in the derivation of the various forms of the verbs (Newton, 1970). Thus, we will examine below whether in fact these are principal reasons why there has been inequality in the application of the rules across the verbs haber, saber and caber. However, why the segment [β] appears in the infinitive forms of these three verbs as well as in the past participle, past indicative, and past subjunctive forms will be explained in 3.3.4. I will show that

it can be accounted for by the INERTIAL DEVELOPMENT principle proposed by Foley (1977:120) and by a phonological condition dealing with stress and roundness of the surrounding vowels.

Due to grammatical factors that will be stated later in this section, the number of rules that have applied to the forms of haber in Table 45 is more or less the same as that which applied to se' of saber in Table 46; fewer rules have operated on forms (2-5) of saber; and even fewer to the forms of caber in Table 47.

Nevertheless, more rules have applied to the forms of haber in the preterite indicative and present subjunctive. That all the lexical items of saber in Tables 49 and 52 and all the lexical items of caber in Tables 50 and 53 have undergone fewer rules is demonstrated by the presence of the underlying consonant /p/ as [p] in all their respective phonetic outputs.

The lexical diffusion of the phonological process considered in this analysis occurs not only across the particular phonological structure of verbal sub-categories in the three verbs but also across the tenses: a set of rules applies in the present indicative of each verb, fewer rules to the forms of the preterite, and even fewer in the present subjunctive.

I propose that the phonological change represented by the

set of rules which applies gradually to the underlying forms of haber, saber, and caber is grammatically conditioned. The forms of haber have been more susceptible to the act of β -deletion and Vowel Contraction than the rest of the forms in Tables 45-53. This is due to the fact that it is an auxiliary verb.¹⁷ The forms of the verb saber have in turn been more susceptible to the act of the phonological rules than the forms of the verb caber.

Let us now give a list of illustrative examples in Spanish with the verbs haber, saber, and caber. Note that the examples are not equally weighted in relation to their importance vis à vis the principles according to which rules are considered to diffuse.

a. As an auxiliary, haber occurs in the perfect tenses of all the Spanish verbs:

- 1) Yo he estudiado la lección. (present perfect)
"I have studied the lesson"

- 2) Pedro había visitado a su hermana en el hospital.
(past perfect)
"Pedro had visited his sister at the hospital"

3) Tú habrás leído el texto cuando el semestre termine.
(future perfect)

"You will have read the text when the semester ends"

4) Miguel habría ido si lo hubieras invitado.
(conditional perfect - past perfective subj.)

"Miguel would have gone if you had invited him"

5) Dudo que Rafael haya estado en la fiesta. (present perf. subj.)

"I doubt that Rafael has been at the party"

b. As an inflectional form, haber occurs in the future indicative of all the verbs in Spanish, including itself: (cf. Table 42 above)

1) Pensar-é (pensar-ás, á, emos, án) cómo hacer el ejercicio.

"I (you,he,we,they) will think how to do the exercise"

c. In Impersonal Constructions:

1) Hay muchos estudiantes en S.F.U.

"There are many students at S.F.U."

2) Hubo toros en Madrid y Barcelona.

"There were bull fights in Madrid and Barcelona"

3) Había mucha gente en la reunión.

"There were a lot of people at the meeting"

4) Hoy habrá mucho sol.

"It will be very sunny today"

5) Si hubiera habido nieve, yo habría ido a la montaña.

"If there had been snow, I would have gone to the mountain"

d. "be necessary":

1) Has de salir mañana.¹⁸

"You have to leave tomorrow"

e. "be necessary" (impersonal):

1) Hay que salir de la casa lo más pronto posible.

"It is necessary to leave the house as soon as possible"

f. "be" (existential):

1) Lee cuantos libros pueda haber.

"Read all the books (you can find) there are..."

g. "must not, prohibition":

1) No hay que fumar en la sala principal.

"No smoking in the main room"

h. In Time-Constructions:

1) Mucho tiempo ha que no te veía.¹⁹

"I had not seen you for a long time ago"

i. In Idiomatic Expressions:

1) No hay de qué.

"You are welcome"

2) No hay excusa que valga.

"No buts about it"

3) No hay mal que por bien no venga.

"It is a blessing in disguise"

4) No hay que rajarse.

"Keep your chin up"

5) No hay que darle vueltas.

"There is no getting around it"

All the examples given above with the verb haber occur in ordinary discourse in any dialect of Latin-American Spanish.

Now, observe the most common expressions with the verb saber:

a. As can be observed below, the different meanings of the verb saber given in examples (1-3) have a possible intercontextual determination. This is the reason why they are collapsed into one single group:

1) "to know":

Pablo sabe lo que le ocurre a su mamá.

"Pablo knows what happens to his mother"

2) "to be able, to know how":

Luis sabe pintar.

"Luis is able to paint"

3) "to know how, to figure out":

Los estudiantes supieron resolver el problema.

"The students knew how to solve the problem"

b. "to have news":

1) Eduardo sabe de tu padre.

"Eduardo has news about your father"

c. "to taste of":

1) Eso sabe a cebolla.

"That tastes of onion"

d. "be in the habit of, be used to":

1) Sabe venir por casa.

"He is used to visit us"

e. "That is, namely":

1) A saber:

"That is:"

f. "Difficult to find out":

1) ¡Vete a saber si viene!

"Who knows whether he will come"

g. "Feel ashamed":

1) El no supo dónde meterse.

"He did not know where to hide himself"

h. "An indefinable something":

1) Ella tiene un no sé qué agradable.

"She has an indefinable something"

i. "be always informed of everything":

1) Pedro se las sabe todas.

"Pedro always knows everything"

The constructions given in (a-i) above are all perfectly common in Spanish. They are part of every speaker's everyday language. Observe that the verb saber appears in more constructions than the verb haber in the list presented above. However, this is not crucial because saber is never used as an auxiliary in Spanish.

Finally, I will also present the most common constructions

with the verb caber :

a. "to fit into":

- 1) El libro rojo no cupo en el estante pequeño.
"The red book did not fit on the small shelf"

b. "to fit":

- 1) Eso no me cabe.
"That does not fit me"

c. "to have enough room for":

- 1) No caben más en esta casa.
"There is no room for more in this house"

d. "to be overcome with joy, to be puffed up with pride":

- 1) Mi hermano está que no cabe en sí porque se ganó los dos premios.
"My brother is puffed up with pride because he won both prizes"

e. "be one's business":

1) No te metas en lo que no cabes.

"This is not your business"

f. "be able to":

1) Todo cabe en ese muchacho.

"That boy is able to do everything"

g. "to fall to one's lot":

1) No me cupo tal suerte.

"I was not so lucky"

h. "to adapt, to get accustomed":

1) No quepo en esta casa.

"I cannot adapt myself to this home"

i. "to be possible":

1) Esto no cabe en lo posible.

"This is absolutely impossible"

j. "to have no doubt":

1) No cabe la menor duda.

"There is no doubt"

The constructions (a-j) presented above with the verb caber are as common as those with haber and saber. The difference between them depends on the number and kinds of possible constructions in which they appear. What the examples above show is the versatility of the three verbs. The versatility of haber over the other two is well established in terms of its function as an auxiliary verb. The verb saber functions differently from caber; saber has multiple meaning while caber examples can essentially be reduced to one meaning: caber en algo "to fit into something" and meter algo en algo "to put something in something".

So far, I have pointed out that the verb haber occurs in ordinary discourse more extensively than saber, and saber more than caber. In addition to this, we can note in Tables 45-53 above that more phonological rules apply to haber, fewer rules to the verb saber, and even fewer to caber. These verbs undergo a different number of phonological rules. These rules gradually extend their scope of operation to the lexical items across the verbs as well as across the tenses.

In Table 43 above, I schematized the gradualness of a

phonological change in which all of the A's have changed into B's by t5. According to Wang (1969:18), this sound change can be seen as "a process of successive simplification in the diachronic rules that will ultimately have the effect of eliminating whatever alternation was caused by the primary context".

From this point of view, in the case of the verbs haber, saber, and caber, the conditions for the change have not become "relaxed" enough, in the sense of Wang, to eliminate the alternations still present in the forms of these three Spanish verbs. It is difficult to predict which lexical item is going to be affected, whether the process will become complete, or how long it is going to be in operation. As I stated earlier, I am not concerned in this thesis with the temporal dimensions of the phonological change, even though they may be established, as suggested by Wang (1969). According to him, sound changes take varying periods of time for their operation, that is, from several years to many centuries.²⁰

Let us return to the forms of haber in Table 45 and compare them with the corresponding forms given in Table 4 of the Data. (see chapter 1, p.24) There are two lexical items that coexist in the first person plural which are hemos and habemos. It is clear that β -deletion (rule 2) and Vowel Contraction (rule 7) as well as rules (3), (4), and (11) have applied to the first form

but not to the second. Consequently, habemos is an exception to changes which have completed their course in the present indicative. By the same token, all the present indicative forms of the verb saber, except (1) sé [sé], must be considered exceptions to β -deletion and Vowel Contraction.

From this point of view, the irregular forms of the verb haber are not those which traditionally have been considered irregularities such as he, has, ha, hemos, and han, but rather habemos which has not yet been made regular by the particular phonological processes illustrated in Table 45.

Lexical items such as habemos, the infinitive forms haber [a β ér], saber [sa β ér], and caber [ka β ér], the past participles habido [a β ído], sabido [sa β ído], and cabido [ka β ído], as well as the past indicative and past subjunctive forms of the same three verbs are unaltered forms not only in terms of Gradual Diffusion of phonological changes such as Spirantization, β -deletion and Vowel Contraction, but also on the basis of the concepts of LINEAR ORDER of applying phonological rules (Newton, 1970) and RULE SCHEMA INTERRUPTION (Foley, 1977), as will be demonstrated in section 3.1.3. below. In section 3.1.4., I will show that the appearance of the segment [β] in all of the forms mentioned above can also be accounted for by the application of the INERTIAL DEVELOPMENT principle proposed by Foley (1977:120) and by a phonological condition dealing with stress and roundness of

the surrounding vowels.

In conclusion, I have shown in this section that the alternations of the verbs haber, saber, and caber observed in the present indicative, preterite indicative, and present subjunctive may be explained in a fairly simple and natural way if we assume that the phonological rules given in Tables 45-53 apply gradually across the lexicon.

3.1.3 Spirantization and ð-deletion.

If we look at Tables 45-47 which present the derivations of the present indicative forms of the verbs haber, saber and caber, we can observe that Spirantization (rule 1 and rule 9) and ð-deletion (rule 2 and rule 10) are allowed to apply at two different stages in the derivation of these forms. They have applied to the forms (1-5) of the verb haber, let us say at t₁; then at t₂, both rules apply again and affect only the first person singular of the verb saber. Note that other processes such as Glide Formation (rule 3), Yod Deletion (rule 4), Metathesis (rule 5), Vowel Reduction (rule 6) and Lenition (rule 9) have come into operation before Spirantization and ð-deletion apply to the first singular form (1) of the verb saber. Note also that forms (2-5) of the verb saber and forms (2-5) of the

verb caber have undergone only Spirantization.

In section 3.1.2., we explained how these rules operated gradually through the forms of the three verbs haber, saber and caber following the concept of LEXICAL DIFFUSION of phonological changes across the lexicon. β -deletion is in this case a clear example of this phenomenon. However, the interesting question about Spirantization and β -deletion is whether they are the same set or a different set of rules when they apply to the forms of haber and saber in the present indicative.

To account for the fact that these two rules have applied at different stages in the derivations of Tables 45-47, two alternatives are possible:

- a. That Spirantization and β -deletion are two rules still active in the derivation when other processes come into operation, following the LINE RULE interpretation proposed by Newton (1970), or
- b. That Spirantization and β -deletion are two "persistent"²¹ rules, i.e. rules which remain in effect "over a long period of time during the history of a language" (See Newton, 1970:43), and exert their influence whenever "through the operation of their changes" their structural description comes to be fulfilled, as can be postulated by point phonology.

It is important to take into account Newton's claim that "the interpretation of rules as lines (that is, in the sense of alternative (a) above) is better able to handle certain phenomena than the point-rule assumption of conventional generative phonology (i.e. alternative (b))".²² (See Newton, 1970:45)

Let us consider one example from the dialect of Lesbos given by Newton: (cf. p.40, example (6))

TABLE 54.

	'they have' 'he has'				
	/exun/	/exi/	Pal.	H.Vl.	Ep.
Palatalization	--	ex'i			
High vowel loss	exn	ex'			
Epenthesis	exin	-			
Palatalization	ex'in	-			
	[ex'in]	[ex']			

In the example above, the rule of Palatalization fronts the velar consonant /x/ before the front vowel /i/ and High Vowel Loss deletes unstressed high vowels if the rules operate in that order; Epenthesis inserts an [i] between certain pairs of consonants in word final position. Newton claims that Palatalization precedes High Vowel Loss and the relation

involved will be "counter-bleeding", that is, Palatalization begins before High Vowel Loss begins; this rule precedes Epenthesis and the relation involved will be "counter-feeding", that is, High Vowel Loss ends before Epenthesis begins; and finally, Epenthesis precedes Palatalization, and the relation involved in this case is "feeding", that is, Epenthesis begins before Palatalization ends. Newton interprets this example as indicating that Palatalization is a rule still active in the derivation when High Vowel Loss and Epenthesis operate on the forms involved, as can be observed in Table 54 above.

Nevertheless, Newton adds that in the case of [ex'in] in Table 54, point phonology can postulate the existence of a "persistent" rule of Palatalization, and the correct phonetic representations will be generated as well. This is the reason why I prefer to give another example (see Table 55 below) in which it is not possible to treat a phonological rule as persistent in this sense. This example is given by Newton (1970:42). It is a hypothetical derivation suggested by consonantal combination with /N/ in Modern Greek.

TABLE 55.

	/Nθx/	/Ntx/
Nasal assimilation	θθx	--
Fricativity assimilation	--	Nθx
Cluster simplification	θx	Nx
Nasal assimilation	--	xx

In this example, Newton claims that it is not possible to treat Nasal Assimilation as a persistent rule, because if it were, then it would have to apply every time a potential input arises. An examination of the derivation in Table 55 shows that the [Nθx] arising from /Ntx/ is not in fact acted on by Nasal Assimilation.

Let us now return to Table 46 in 3.1.2. of this chapter and observe the derivation of the first person singular (1) [sé]. In light of Newton's argumentation, I will put aside alternative (b), viz. that phonological rules are "persistent", for our case in Spanish since if β-deletion (rule 10) had been a persistent rule, it would have acted every time a potential input had arisen, and an examination of the derivations in Tables 46 and 47 (verbs saber and caber) shows that the forms (2-5) of the first verb and forms (1-5) of the second are not in fact acted on by β-deletion. Consequently, I propose that alternative (a),

viz. that Spirantization and β -deletion are two rules still active in the derivation when other processes come into operation, is the acceptable one for the case of the verbs haber, saber, and caber in Spanish.

That Newton's model of applying phonological rules as described in alternative (a) above is compatible with the concept of LEXICAL DIFFUSION of phonological processes can be demonstrated as follows: Spirantization (rule 1) and β -deletion (rule 2) apply in the derivation of the forms of haber, saber and caber in the sense of alternative (a); rules (1-2) in Table 45 apply to the forms of the present indicative of haber at t1. The phonological process continues its course, and rules such as Glide Formation, Metathesis, Vowel Reduction, Vowel Contraction and Lenition operate on the forms of haber in Table 45 as well as on the forms of saber in Table 46. Meanwhile, rules (1-2) are still active. Then, at t2, rule (9) applies to the forms (1-5) of saber and to (2-5) of caber; the set of rules (9-10) applies only to the form of the present indicative of saber in Table 46, but not to the corresponding one of caber. This is a case which shows that this pair of rules has applied gradually through the lexical items of these three verbs. Note that rule (8) begins to operate on the forms (1-5) of saber and (2-5) of caber before rules (9-10) end, i.e. they are in a feeding relation.

It has been demonstrated that, even though Spirantization

and β -deletion are still active in the sense of Newton when rules (3-8) come into operation, the first two do not apply to all forms of the three verbs at the same time but rather gradually across them. This explains why rules (9-10) have not applied in the derivations of saber in Tables 49 and 52 and of caber in Tables 50 and 53.

However, as was proposed in 3.1.2., the gradual application of a phonological process represented in this case by Spirantization and β -deletion is not determined arbitrarily or by mere workability along the derivations presented in Tables 45-53, but by grammatical conditions. The forms of haber have been more susceptible to being acted upon by these rules than the rest of the forms in Tables 45-53. This is due to the special and frequent use of haber as an auxiliary verb. The difference between the three verbs under analysis depends on the number and kinds of common constructions in which they occur. As we showed in 3.1.2., the verb saber functions differently from the verb caber; saber has multiple meaning while caber does not.

Spirantization and β -deletion can also be interpreted as a rule schema, in the sense of Foley (1977:73), that is, as "a statement of a phonological process which is an abbreviation for the expansion into phonological rules under the conditions prescribed by the inequality condition". The rule schema represented by Spirantization and β -deletion in the case of the

verbs haber , saber and caber has been interrupted by a subset of rules such as Glide Formation, Yod Deletion, Metathesis, Vowel Contraction, Vowel Reduction and Lenition.²³

The assumption made in the preceding paragraph, viz. that Spirantization and β -deletion are interrupted rules, is based on the principle of RULE SCHEMA INTERRUPTION that formally reads as follows:

- (48) "A phonological rule can apply at different times in a derivation...It does not need to apply contiguously...Another rule may be inserted between the sub-parts of an abstract rule schema" (cf. Foley, 1977:73)

Let us first present a clear case of interrupted rules given by Foley (1977:73) in order to exemplify how his principle of RULE SCHEMA INTERRUPTION works in the theory of generative phonology. After doing this, I will demonstrate that Spirantization and β -deletion in the case of the verbs haber, saber and caber represent another case of interrupted rules in Spanish.

According to Foley (1977:73), rules such as Elision in Spanish first singular verb forms apply at different times, depending on the number of preceding consonants, by the rule given in (49) below:

(49) Vowel Elision

$e \implies \emptyset / C^n __ +V \quad (1 \leq n \leq m)$

with $m=2$

Vowel Elision given in (49) above says that the vowel e is elided after n number of consonants when it is followed by a vowel separated by morpheme boundary. $(1 \leq n \leq m)$ means that the variable n varies from the constant 1 to the variable m where m is defined for Spanish as 2. Then, n must have the values 1, and 2. Furthermore, according to Foley, rule (49) consists of two subrules which are given in (50) and (51):

(50) (VE1) $e \implies \emptyset / C^1 __ +V$

(51) (VE2) $e \implies \emptyset / C^2 __ +V$

Rules (50) and (51), which apply in this order, account for the derivation of forms such as hago [áyo], first person singular of the verb hacer "to make" in the present indicative and venzo [bénso], first person singular of the verb vencer "to conquer" in the same tense.

According to Foley (1977:73), Vowel Elision occurs in hago before venzo as can be observed in (52) below:

(52) venk-e-o hak-e-o
 " hak-o (VE1)
 venk-o " (VE2)

In order to generate the correct phonetic representations of both forms hago and venzo, Foley provides a solution postulating his theory of interrupted rule schemata which states:

- a. That rule schemata apply linearly, i.e. rule (A) before (B);
- b. That phonological rules are analyzable, i.e. rules can be regarded as one, two, three, four, or more separate rules;
- c. That rule schemata are interruptable.

Consequently, Foley proposes that between subparts (50) and (51) of Vowel Elision in hago and venzo, Assibilation applies. This is shown in the following derivation:

(53) venk-e-o hak-e-o
 " hako (VE1)
 venz-e-o " Assibilation.
 venz-o " (VE2)
 " hago (Lenition).

I have presented a case of single interruption given by Foley where the expansion of a single rule schema has been interrupted by a different rule. He also considers one example of mutual interruption (French Syncope and Diphthongization (cf. p.83)) where two rules, in their expansion, interrupt each other. Note that the results of an analysis in terms of LEXICAL DIFFUSION and Newton's LINEAR MODEL may be equivalent to an analysis in terms of Foley's INTERRUPTED RULE SCHEMATA with the concept of LEXICAL DIFFUSION. However, the evaluation of the correct theoretic amalgam is outside the scope of this thesis.

Let us now return to our case of haber , saber and caber. The fact that Spirantization and β -deletion have applied to the first person singular form [sé] of saber and not to the first person singular [képo] of caber is not irregular or inexplicable. It has already been demonstrated how these rules apply gradually through the lexical items of the three verbs under analysis in light of the concept of LEXICAL DIFFUSION. It has also been shown that Spirantization and β -deletion are still active in the derivation while other processes such as Glide Formation, Yod Deletion, Metathesis, Vowel Reduction, Vowel Contraction, and Lenition come into operation. In the case of [képo], Spirantization and β -deletion do not apply until

Lenition applies. This was based on the concept of LINEAR ORDER of applying phonological rules (Newton, 1970). Based on the principle of RULE SCHEMA INTERRUPTION proposed by Foley (1977), I also demonstrated that Spirantization and β -deletion have been interrupted by a subset of rules that are Glide Formation, Yod Deletion, Metathesis, Vowel Reduction, Vowel Contraction and Lenition, still with the specification that such an interruption applies in relation to particular lexical items and not generally across the lexicon, i.e. with the principle of Lexical Diffusion. The fact that Spirantization has not applied to the form [képo] of caber in Table 47 but has applied to forms (2-5) of the same verb shows that the first condition of the theory of interrupted rule schemata, viz. that rule schemata apply linearly, is met. In other words, Spirantization is a rule that changes /b/ to [β], /d/ to [δ], and /g/ to / γ / in an environment between two vowels only if Lenition which changes /p/ to [b], /t/ to [d], and /k/ to [g] has applied before. Of course, if Spirantization applied before Lenition or β -deletion before Spirantization in the derivation of the forms given in Tables 45-47, it would not only give incorrect results, but would also violate the universal conditions on Spirantization and β -deletion, that is, according to Foley (1977:74), conditions on universal schemata which determine their expansion, as well as the parochial conditions, which are the language specific conditions on the operation of universal rules.

However, as was stated above in 3.1.2., Spirantization has not applied to the first person singular [képo] of caber but has applied to forms (2-5) of the same verb. This shows that the third condition of the theory, viz. that rule schemata are interruptable, is also met, provided that such an interruption can apply in relation to specific lexical items, i.e. differentially across the lexicon as required by the Gradual Diffusion hypothesis.

Consequently, I have shown in this section how Spirantization and β -deletion, which are allowed to apply at two different stages in the derivation of the various forms of the verbs haber, saber, and caber, can be accounted for via three important concepts proposed in the theory of generative phonology, namely LEXICAL DIFFUSION (Wang, 1969), LINEAR ORDER (Newton, 1970), and RULE SCHEMA INTERRUPTION (Foley, 1977), provided that the first is combined with either of the other two.

3.1.4 Conditions on β -deletion.

In 3.1.2. and 3.1.3., it was demonstrated that the consonantal alternation [p- β] observed in the present indicative, preterite indicative, and present subjunctive of the

verbs haber, saber and caber may be explained in a fairly simple and natural way if we assume that the phonological rules given in Tables 45-53 apply gradually across the lexicon as proposed by Wang (1969). From this point of view, these three verbs are reasonably assumed to be conditioned by grammar to undergo a different number of phonological rules which have gradually extended their scope of operation to the lexical items across the verbs within and across the tense paradigms.

For example, it was stated that the present indicative forms [é], [ás], [á], [émos], [án] of haber and the first person singular [sé] of saber have been affected by most of the rules given in Tables 45-46, that fewer rules have applied to the rest of the present indicative forms of saber and all present indicative forms of caber, and that the first person singular form quepo [képo] of the verb caber has not been affected by the phonological process considered.

However, why the consonant [β] still remains in infinitive forms such as [aβér], in the past tense forms such as [aβía], and in past participles such as [aβído] is still not completely clear in our analysis and requires further commentary.

Thus, I will show in this fourth subsection that the appearance of the intervocalic segment [β] in the infinitive, past participle, and past tense forms of the verbs haber, saber

and caber can be explained phonologically in terms of stress and roundness of the surrounding vowels.

Foley (1977:120) proposes the Inertial Development Principle which determines phonological change by the condition that strengthening applies preferentially and most extensively to strong elements in strong environments, and by the condition that weakening applies preferentially and most extensively to weak elements in weak environments.

Foley illustrates this principle as follows. In North German, Foley claims, the weakest voiced stop /g/ weakens further (spirantizes) in weak (intervocalic) position, but the stronger elements /d/ and /b/ remain unaffected. In Danish, after /g/ and /d/ spirantize, /ɣ/ but not /ð/ is elided: kaye ==> kei though bíde ==> idem. (cf. Foley, 1977:32) In Spanish, according to Foley, phonologically weak elements are not only more liable to further weakening, but also undergo more extensive weakening than their phonologically stronger congeners. For example, Lat. kk weakens by only one unit (bucca ==> boca [bóka] "mouth"), while the weaker /k/ weakens by two units (Lat. amica ==> amiga [amíya]). Similarly, /b/ weakens by only one unit (Lat. habēre ==> haber [aβér]), while the phonologically weaker /d/ weakens by two units (Lat. credere ==> creder ==> creer [kreér]). Foley also lists examples from different languages such as Buriat Mongolian, Czech, Sanskrit,

Kasem, Modern Greek, and Danish showing first that velars are weaker than labials or dentals, and second that velars and dentals are weaker than labials. Consequently, according to Foley, velars are the weakest consonants for they undergo further weakening, whether of voiced stops to continuants or of total elision; on the other hand, labials are the strongest for they or their reflexes remain while velars and dentals weaken. This can be explained simply if we consider the following examples: (cf. Foley, 1977:32)

- a. Spanish intervocalic g (real "royal" <Lat. regalis) and d (creo "I believe" <Lat. credo) drop but labial b (haber <Lat. habere) remains.
- b. French intervocalic velars (lire <Lat. legere, amie <Lat. amica) and dentals (croire <Lat. credere, vie <Lat. vita) drop, but labials (avoir <Lat. habere, rive <Lat. ripa) remain.

Based on all the facts presented above, Foley shows that his Inertial Development Principle can state

- a. the universal rule $[+voice, \langle n \rangle] \Rightarrow [+cont] / V _ V$, that is, that voiced stop consonants become continuants between vowels, in which the operation depends on the strength of the consonant on the alpha parameter;²⁴
- b. the universal condition that the rule applies

preferentially to weak consonants; and

- c. the parochial conditions which specify the value \underline{n} for particular languages. For example, in German the value of \underline{n} is 1 since the voiced stop /g/ spirantizes while /d/ and /b/ remain unaffected. In Danish, the value of \underline{n} is 2 since both /g/ and /d/ spirantize. In Spanish, the value of \underline{n} is 3 since the three voiced stop segments spirantize.

If we consider the verbs haber, saber and caber that have been analyzed in the preceding sections of this chapter, the fact that the consonant [β] still remains in the infinitive forms [aβér], [saβér], and [kaβér] could apparently be predicted by Foley's Inertial Development Principle illustrated above. However, consider the following forms of the three verbs:

TABLE 56.

	HABER	SABER	CABER
(a)	he	se	quepo
	[é]	[sé]	[képo]
(b)	habemos	sabemos	cabemos
	[aβémos]	[saβémos]	[kaβémos]
(c)	habido	sabido	cabido
	[aβíðo]	[saβíðo]	[kaβíðo]

The fact that the intervocalic [β] has been dropped in the first

person singular forms of the verbs haber and saber given in (a) of Table 56 above and that the same segment has remained in forms (b) and (c) of the same verbs cannot be accounted for completely by the parochial conditions for Spanish established by Foley (1977:32) which specify that intervocalic /g/ and /d/ drop while labial /b/ remains.

In the first section of this chapter, I showed that the consonantal alternations manifested by the verbs haber, saber and caber in the present indicative, present subjunctive, and preterite indicative can be handled only if we assume that a phonological process has applied gradually across the lexical items and also across the tenses. Furthermore, I showed in the same section that the three verbs under analysis are conditioned by grammar and common and varied usage to undergo a different number of phonological rules. However, why the consonant [β] still remains in the infinitive forms [aβér], [saβér], and [kaβér] as well as in the plural forms (b) and the past participle forms (c) given in Table 56 above can be explained only if a phonological condition dealing with stress of the surrounding vowels is added to the generally stated parochial conditions of β-deletion proposed by Foley (1977:32) and to our analysis presented in 3.1.2. and 3.1.3.

Note that the [β] which appears in examples (b) and (c) in Table 56 above is in pretonic position and the stressed vowel is

a front vowel. Observe now examples (a-c) given below in Table 57:

TABLE 57.

(a)	navaja	"pocketknife"	[naβáxa]
	caballo	"horse"	[kaβáʎo]
	deberes	"duties"	[deβéres]
(b)	abono	"fertilizer"	[aβóno]
	babosa	"slug"	[baβósa]
	arribó	"he arrived"	[aɾiβó]
(c)	abulia	"abulia"	[aβúlya]
	abuso	"abuse"	[aβúso]
	robusto	"vigorous"	[roβústo]

Examples (b-c) in Table 56 and (a-c) in Table 57 above show that [β] remains whether the following stressed vowel is a front, back or low vowel. Furthermore, the vowel which precedes the intervocalic [β] is also relevant as shown by the following examples:

TABLE 58.

(a)	baba	"drivel"	[ba'βa]
	nave	"nave"	[na'βe]
	pavo	"turkey"	[pa'βo]

nieve	"snow"	[nyéβe]
saliva	"saliva"	[salíβa]
cuba	"pail"	[kúβa]
débito	"debit"	[déβito]
sebo	"fat"	[séβo]
vivo	"alive"	[bíβo]
úvula	"uvula"	[úβula]
lobo	"wolf"	[lóβo]
nube	"cloud"	[núβe]

Examples given in Table 58 are substantial synchronic evidence for assuming that the consonant [β] also remains if the preceding vowel (front, back, or low) is stressed. However, it tends to disappear if it is preceded or followed by a round unstressed vowel [o] or [u], but not otherwise, as shown in examples (a-b) in Table 59:

TABLE 59.

(a)	fabuloso	"fabulous"	[faulóso] ²⁵
	taburete	"stool"	[tauréte]
	nebulosa	"cloud"	[neulósa]
	movimiento	"movement"	[moimyénto] ²⁶
	ovulación	"ovulation"	[oulasyón]
	evolución	"evolution"	[eolusyón]
	ubicación	"location"	[uikasyón]

(b)	civilizado	"civilized"	[siβilisáo]
	nivelado	"leveled"	[niβeláo]
	rivalidad	"rivalry"	[riβalidá]
	levantarse	"to get up"	[leβantáse]
	navegación	"navigation"	[naβeyasyón]
	aberración	"aberration"	[aβeɾasyón]

Consequently, I propose that β-deletion is phonologically conditioned by stress and roundness of the surrounding vowels. This condition can be formulated as follows:

(54) β ==> ∅ / V ____ V

condition: one V = $\begin{bmatrix} -\text{stress} \\ +\text{round} \end{bmatrix}$

In concluding this discussion, it should be stressed that it is not so much the formulation of the condition in (54) above in itself, which will probably require change and revision, but rather the necessity of a phonological condition such as this that is important. This condition is proposed in addition to the general parochial conditions established by Foley (1977:32) which specify that the labial [β] remains while the intervocalic [ɣ] and [ð] drop. It is consonant, however, with the principles of Foley's approach and with the Gradual Diffusion analysis

presented in 3.1.2. of this chapter.

It would be of interest to establish the specific corresponding phonological conditions of ð-deletion and γ-deletion in intervocalic position. In fact, while this thesis is not directly concerned with this issue, as an illustration, I will show that the behavior of ð-deletion is quite different from that of β-deletion observed in Tables 56-59 above and that there are instances in which [ð] is weaker than [γ] and [β], under the same conditions, when [ð] is dropped while the other two remain.

Let us first consider examples with ð-deletion:

TABLE 60.

armada	"armed"	[aĩmá]
apagada	"extinguished"	[apaɣá]
nada	"nothing"	[ná]

As can be noted above in Table 60, [ð] drops when it is preceded by the stressed low vowel [a].²⁷ Compare examples in Table 60 with those in Table 61 below:

TABLE 61.

armaba	"he armed"	[aĩmáβa]
apagaba	"he extinguished"	[apaɣáβa]
alaba	"he praises"	[aláβa]

These last three examples show that [β] remains in postonic position and thus it is subject to different conditions concerning stress of the preceding vowel. Compare now examples (a-c) given in Table 62 below:

TABLE 62.

(a)	ahorcado	"hanged"	[aoĩkáó]
	apagado	"put out"	[apaɣáo]
	dado	"die"	[dáó]
	dedo	"finger"	[déó]
	partida	"departure"	[paĩtía]
	comida	"meal"	[comía]
	partido	"game"	[paĩtío]
	comido	"eaten"	[comío]
(b)	cabo	"end"	[káβo]
	pavo	"turkey"	[páβo]
	taparrabo	"loincloth"	[tapaĩáβo]
	sebo	"fat"	[séβo]

altiva	"arrogant"	[altíβa]
saliva	"saliva"	[salíβa]
vivo	"alive"	[bíβo]
escribo	"I write"	[eskriβo]

(c)	amaga	"he threatens"	[amáγa]
	ɗaga	"dagger"	[ɗáγa]
	pago	"payment"	[páγo]
	lago	"lake"	[láγo]
	ciego	"blind"	[syéγo]
	amiga	"friend"	[amíγa]
	mendigo	"beggar"	[mendíγo]
	abrigo	"overcoat"	[abriγo]

In examples (a) above, the segment [ɗ] has been dropped in posttonic position and preceded by a vowel in final position. Examples (b) and (c) clearly demonstrate that [γ] and [β] are stronger segments than [ɗ] in this position.²⁸

It has been demonstrated in this subsection that the parochial conditions established by Foley (1977) which specify that intervocalic /γ/ and /ɗ/ drop while labial /β/ remains are not totally sufficient to account for the fact that intervocalic [β] has been dropped in the first person singular forms [é] and [sé] of the verbs haber and saber while it has remained in

pretonic position as well as in postonic position. I propose that a phonological condition dealing with stress and roundness of the surrounding vowels be added both to Foley's general parochial conditions for Spanish and to our specific analysis in terms of Lexical Diffusion presented in this chapter.

3.2 Reduction, Contraction, Metathesis and Vocalic Raising.

This second section is concerned with six subsets of irregular first, second, and third conjugation verbs: a) haber "to have", saber "to know", and caber "to fit (into)"; b) placer "to please" and traer "to bring"; c) poder "be able", poner "to put" and responder "to answer"; d) querer "to want", and ver "to see"; e) hacer "to make", decir "to say", and venir "to come"; f) andar "to walk", estar "to be", and tener "to have".

It will be shown:

- a. That placer and traer are morphophonologically related to the three verbs haber, saber and caber because they share the alternation [a-u] in the preterite forms;
- b. That poder, poner and responder are also related to the verbs haber, saber and caber because of the raising of the root back /o/ to [u] in the preterite indicative;
- c. That querer and ver, which manifest a front vowel [e-i] raising alternation, constitute, therefore, a parallel

with those eight verbs which show the back vowel [a-u], [o-u] alternations;

- d. That the differences among all the verbs mentioned in (a-c) above are explicable in terms of Lexical Diffusion of the phonological rules across their lexical items.

The rules of Metathesis, Vowel Contraction, Vowel Reduction and Vocalic Raising will be formulated and motivated in order to account for the alternation [a-u] observed in the verbs haber, saber and caber. These rules will be formulated in a way that explains the alternation [a-u] observed also in the second conjugation verbs traer and placer, as well as the alternation [o-u] of the second conjugation verbs poder, poner and responder, and the alternation [e-i] of querer, ver from the second conjugation, and decir, venir from the third conjugation.

The set of phonological rules mentioned above, viz. Metathesis, Vowel Contraction, Vowel Reduction, and Vocalic Raising, will show that the verbs of subsets (b-f) mentioned above are related to haber, saber and caber making up a sub-group of verbs with shared vowel and consonantal alternations in the preterite.

It will also be demonstrated in this section why the first conjugation verbs estar "to be", and andar "to walk", and the second conjugation verb tener "to have" also have u in their

preterites and how they are, therefore, related to the verbs haber, saber and caber, as well as to the other five subsets of verbs mentioned above.

In 2.1.2.1., I concluded that the third conjugation verb decir and the second conjugation verb hacer were a subset of related verbs in the future and the conditional forms since they underwent the same phonological rules. I also concluded that the e of decir "to say", decimos "we say", and the i of dire' "I will say", dije "I said", and dicho "said-past part." is an /i/ in the underlying representation.

Now, in this second section, I will show that decir is also subject to the set of phonological rules which apply to the second conjugation verbs querer, hacer and ver in the preterite indicative. I will also demonstrate that the relationship of the verbs decir and hacer with ver, venir, poner, tener, and salir is based on the Gradual Diffusion of a phonological process represented by Final Vowel Deletion and Root Final Consonant Deletion across the lexical items of the future, conditional, and imperative.

The historical data and the standard data from other Romance languages such as Portuguese, French, Italian, and Catalan which will be presented in this section support the rules, rule ordering, and underlying representations proposed in

the analysis.

3.2.1 Haber, Saber, and Caber.

In 3.1.2., three important assumptions were made:

- a. the roots for haber, saber, and caber are /ab/, /sap/, and /kap/ respectively. The /p/ of the root /sap/ appears in all the preterite indicative and preterite subjunctive forms such as supe "I knew" and supiera "I knew-subj." The /p/ of the root /kap/ appears in the first person singular of the present indicative quepo "I fit (into)", in all the preterite indicative and subjunctive forms such as cupe "I fit (into)" and cupiera "I fit-subj.", and also in related words like capacidad "capacity";
- b. the future tense in Spanish is formed by adding the present indicative forms of haber to the base form of the infinitive of all verbs without exception as was demonstrated at the beginning of this chapter; (see Table 42, 3.1.1.)
- c. the underlying representations of haber, saber, and caber show an /i/ increment in the present indicative and present subjunctive and an /u/ increment in the preterite indicative instead of /y/ and /w/ as proposed by Foley (1965). Then, the main difference between these

three irregular verbs and the regular pattern verbs of the first and second conjugations can be attributed to the presence of a different increment vowel in the underlying representations.²⁹

In addition to these three assumptions, I proposed a set of phonological rules and derivations for the forms of the present indicative, preterite indicative, and present subjunctive of the verbs haber, saber, and caber. (See Tables 45-53, 3.1.2.)

Let us now observe the present indicative forms of the three verbs given in Tables 45-47. The personal endings of these forms are the same as those observed in surface structure of the regular pattern verb from the second conjugation, i.e. -o, -es, -e, -emos, -en. The underlying forms for the first person singular of haber, saber, and caber are /abio/, /sapio/, and /kapiro/ respectively. The vowel /o/ proposed in them is independently motivated. It appears not only in Latin habeo, sapio, and capiro, but also in Mod. Italian ho "I have" and so "I know"; in Mod. Portuguese caibo "I fit into", and in Spanish quepo .

The rules of Spirantization, β -deletion and Vowel Contraction that received special treatment in the first section of this chapter apply not only in Spanish but also in Portuguese, Italian and French. Rules such as Yod Formation and

Yod Deletion are also motivated from these languages. Let us consider the derivations of the second person singular of the verb haber in the four Romance languages mentioned above:

TABLE 63.

	SPANISH	POTUGUESE	ITALIAN	FRENCH
Underl. Forms	/abies/	/abies/	/abies/	/abies/
1. Spirantizat.	áβies	áβies	áβies	áβies
2. β-deletion	áies	áies	áies	áies
3. [i] ==> [y]	áyés	áyés	áyés	áyés
4. y ==> ∅ / _ e	áés	áés	áés	áés
5. [áé] ==> [á]	ás	ás	--	ás
6. V. raising (IT.)	--	--	áis	-
7. s ==> ∅ (IT.Fr.)	--	--	ái	á'
Phonet. outputs	[ás]	[ás]	[ái]	[á]

β-deletion applies not only to verb forms such as those presented in Table 63 above but also to other forms such as pronouns, nouns, and adverbs:

TABLE 64.

Lat. ubi	O.Sp.	o	"where"
	O.Port.	ou	
Lat. ibi	O.Sp.	hi	"there"
Lat. tibi	M.Sp.	ti	"you-Obj. of prep."
Lat. sibi	M.Sp.	si	"him, her, them-Obj. of prep."

Lat. <u>sebum</u>	M.Cat.	seu	"fat"
Lat. <u>rūbēus</u>	O.Sp.	royc	"reddish"
	M.Sp.	rojo, rojizo.	

Crowley (1952:14) also gives an example of historical loss of intervocalic b from Latin sedebat (3rd. p. sing., imperfect indicative of the 2nd. conjugation verb sēdēre "to sit") to Old Sp. sedía. Note that the imperfect indicative forms of the Spanish verbs in the second and third conjugations constitute clear synchronic evidence for postulating β -deletion in the imperfect marker -ba, viz. comía from [comé β a] "I ate" and oía from [audé β a] "I heard".³⁰

Now, observe Tables 47 and 50 in 3.1.2. above. Note that the process of Assimilation in backness and roundness (rule 6) combines a low vowel [a] with [y] and [w] to form the mid vowels [e] and [o] respectively. This is the reason for assuming that [y] exists in the derivation of (1) quepo [képo] from [káypo] in Table 47, (as well as in [é] and [sé]) and [w] in the derivation of cupe [kúpe] from [káwpe] in Table 50. This analysis is predicated on the assumption that: a) We have a rule of Glide Formation (rule 3) /i,u/ ==> [y,w] / _ V[-stress] in our phonology, and b) that a rule of Metathesis, which will be formulated later in this section, also operates on (1) quepo from [káypo] and on cupe from [káwpe] thereby yielding the

correct conditions for rule (6).³¹

The rule of Vowel Contraction (rule 5) which applies in the derivations presented in Table 63 above has also operated historically in the change from Latin to Spanish as shown in the examples below:

TABLE 65.

Lat. saeta	"stiff hair"	M.Sp.	seda	[séda]	"silk"
		Vasc.	seta		
		Astur.	sea		
Lat. taedium	"tediousness"	M.Sp.	tedio	[tédyo]	
		Gall.	teyo		
Lat. taeda	"torch"	M.Sp.	tea	[téa]	
		Sor.	teda.		

Consequently, Vowel Contraction (rule 5)³² has two subparts. The first subpart which is given in (55):

(55) [áe] ==> [á]

can be rewritten as follows:

Vowel Contraction 1.

Structural Description (SD):

[+voc	
-cons	[-cons
-high	-high
+low	-back
+back	
-round	
+stress	
1	2

Structural Change (SC):

1 2 =====> [+back]

This rule converts [a^he] into [a^h] as can be observed in derivations in Table 63, above. The second subpart of Vowel Contraction which is in (56):

(56) [a^he] ==> [e^h]

can be rewritten as follows:

Vowel Contraction 2.

Structural Description (SD):

$$\begin{array}{c} \left[\begin{array}{l} +\text{voc} \\ -\text{cons} \\ -\text{high} \\ +\text{low} \\ +\text{back} \\ -\text{round} \end{array} \right] , \begin{array}{c} \left[\begin{array}{l} -\text{cons} \\ -\text{high} \\ -\text{low} \\ -\text{back} \\ +\text{stress} \end{array} \right] \\ 2 \end{array} \\ 1 \end{array}$$

Structural Change (SC):

$$1 \ 2 \ ==\Rightarrow \ \left[\begin{array}{l} -\text{back} \\ -\text{low} \end{array} \right]$$

This second subpart changes [aé] to [é] in the derivation of the first person plural of hemos [émos] of the verb haber. It also explains how words such as seda, tedio and tea given in Table 65 above are derived from Latin.

Metathesis.

When two sounds or groups of sounds interfere with each other, the result is an exchange of places, a process which has long been called Metathesis. This process is observed in the present indicative and present subjunctive forms of the verbs saber and caber as well as in the preterite forms of the three verbs. Even though these forms have already been presented in 3.1.2. (Tables 45-53), we will consider them again in order to

show how Metathesis applies. Observe the derivations given in Table 66 below:

TABLE 66.

	Present Indicative	Preterite Indicative
HABER (1)		[áβwe] ==> [áwpe]
SABER (1)	[sápyo] ==> [sáypo]	[sápwe] ==> [sáwpe]
CABER (1)	[kápyo] ==> [káypo]	[kápwe] ==> [káwpe]

With respect to these three verbs, the consonants involved in Metathesis are [p] in the present indicative and [p] and [β] in the preterite indicative, and of course the glides [y] and [w]. Observe the reflexes in other Romance languages:

TABLE 67.

M.Port.	caibo	*caipo	Lat. capio	"I fit into-subj."
	caiba	*caipa	Lat. capiam	"I fit into-ind."
	saiba	*saipa	Lat. sapiam	"I know-subj."
	houve	*haubi	Lat. habui	"I had"
	soube	*saupi	Lat. sapui	"I knew"
Prov.	haub	*haubi	Lat. habui	
	saup	*saupi	Lat. sapui.	
	caup	*caupi	Lat. capui.	

Metathesis has occurred historically not only in verb forms but also in nouns involving the consonant /s/ as can be observed in

the following examples:

TABLE 68.

Lat. casĕus	M.Sp. queso	[késó]	"cheese"
	Port. queijo		
Lat. casearia	M.Sp. quesera	[keséra]	"cheese shop"
	Port. queijeira		
Lat. basium	M.Sp. beso ³³	[bésó]	"kiss"
	Port. beijo		
	Cat. bes		

In order to account for the derivations given in Table 66 above, the rule of Metathesis can be formalized as follows:

(57) Metathesis (first version)

$$\begin{bmatrix} \text{p} \\ \text{p} \end{bmatrix} + \begin{bmatrix} \text{y} \\ \text{w} \end{bmatrix} \implies \begin{bmatrix} \text{y} \\ \text{w} \end{bmatrix} + \begin{bmatrix} \text{p} \\ \text{p} \end{bmatrix} / \begin{bmatrix} \text{v} \\ \text{a} \end{bmatrix} \text{---} \begin{bmatrix} \text{v} \\ \text{ } \end{bmatrix}$$

That is,

Metathesis (first version)

Structural Description (SD):

$$\begin{matrix} \text{v} & & & \text{v} \\ [-\text{high}] + [+ \text{labial}] + \begin{bmatrix} -\text{cons} \\ -\text{voc} \end{bmatrix} + [\text{ }]^{3\ddagger} \\ 1 & 2 & 3 & 4 \end{matrix}$$

Structural Change (SC):

====> 1324

This Metathesis rule will require revision since the labial segments [p] and [ɸ] are not the only consonants involved in the process under 2. This will be done in 3.2.2. sqq.

Let us now consider the following derivations:

TABLE 69.

SABER	(1)	[sáypo]	==>	[sépo]	==>	[sé]
CABER		[káypo]	==>	[képc]	==>	[képo]

Vowel Reduction (rule 6) combines a low vowel [a] with the metathesized glide [y], giving the mid front vowel [e] observed in [sé] of saber and [képo] of caber. This rule is also necessary to derive [óɸe] (=hube) from [áwɸe], [sope] (=supe) from [sáwpe], [kópe] (=cupe) from [káwpe] as well as the rest of preterite forms presented in Tables 48-50. (See 3.1.2. above) Thus, it can be observed that Vowel Reduction (rule 6) involves a process of Assimilation in backness and roundness as well as a raising process.

If we look at Tables 48-50 again in 3.1.2., we observe that the [o] in [óɸe], [sópe], and [kópe], which results from the contraction of the low vowel [a] and the glide [w], is raised to [u] by rule (12), generating the correct phonetic

representations [úpe], [súpe], and [kúpe] of the preterite of the verbs haber, saber and caber. Foley's claim that "preterite diffuseness" is a special rule only for preterite forms appears to be correct since the front vowel /e/ does not become [i] in the present indicative forms [sé] from his /sáypo/ and [képo] from his /káypo/. However, the rule formulated by Foley (1965:74) would also apply in alternations like [móper] "to move" / [mopyó] "he moved", deriving incorrect phonetic representations such as *[mupyó]. This shows, therefore, that a rule which raises the [o] to [u] in the forms of haber, saber, and caber has to be clearly formulated.

A raising rule which applies in alternations like [morír] "to die" / [muryó] "he died" is formulated by Lema (1978:100):

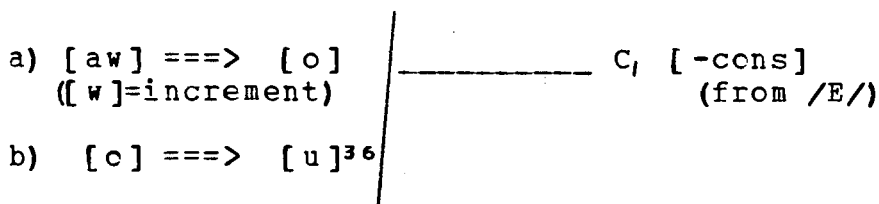
$$(58) \begin{bmatrix} e \\ o \end{bmatrix} \implies \begin{bmatrix} i \\ u \end{bmatrix} \left/ \begin{array}{l} a) \\ b) \end{array} \right. \frac{\text{e}^{35}}{\text{III Conj.}} \text{C}_0 \begin{bmatrix} \text{V} \\ \text{-high} \end{bmatrix}$$

As can be noted, the raising rule proposed by Lema (1978:100) operates only on the preterite forms of the regular third conjugation verbs. However, the conditions of the phonological process which raises the vowels [e, o] to [i, u] in the preterite forms of the irregular verbs considered in our study are different. The vowel [a] which contracts with the glide [y] in [képo] from [káypo] and with the glide [w] in [kúpe] from [kópe] < [káwpe] always becomes [e] and [o] respectively. This process is

subject to Lexical Diffusion since the [e] in [képo] remains [e] while the [o] in [kópe] raises to [u]. We will show in 3.2.3.-3.2.5. that the [u] of verb forms such as [púde] and the [i] which appears in [díxe], [bíne] of the verbs decir and venir are also subject to the process of Vocalic Raising which applies to haber, saber, and caber. It operates on verbs only because the underlying increments /i/ and /u/ which become [y] and [w] by the action of Glide Formation always metathesize.

Consequently, a phonological process that performs the function of raising the vowels [o] and [e] in the preterite of the second and third conjugation verbs must be formulated. In the case of the verbs haber, saber, and caber the [o] has to be followed by C₁, that is, by one or more consonants, (these consonants are in fact [p], [β] when the rule operates) which are in turn followed by any vowel or a yod:

(59) Vocalic Raising 1 (first version):



The following derivations exemplify the application of rule 59 formulated above:

TABLE 70.

HABER:[áwbe] ==> [óβe] ==> [úβe]
 SABER:[sawpíste] ==> [sopíste] ==> [supíste]
 CABER:[kawpÉron] ==> [kopyéron] ==> [kupyéron]

Vocalic Raising 1 (rule 59) does not apply to preterite forms of the second conjugation such as those given in Table 71 below because there is no increment in their underlying forms and Metathesis does not operate:

TABLE 71.

mover [moβér] "to move"	movió [moβyó] "he moved"
toser [tosér] "to cough"	tosió [tosyó] "he coughed"
coser [kosér] "to sew"	cosió [kcsyó] "he sewed"
cocer [kosér] "to cook"	coció [kosyó] "he cooked"
llover[loβér] "to rain"	llovió[loβyó] "it rained"

3.2.2 Placer and Traer.

The verbs placer and traer are morphophonologically related to the three verbs haber, saber and caber analyzed in 3.2.1. above because they share the alternation [a-u] in the preterite indicative forms. Consider these forms in Table 72 below:

TABLE 72.

	tr[a]er "to bring"	pl[a]cer	"to please"
1.s.	tr[ú]je "I brought"	-	
3.s.	tr[ú]jo "he brought"	pl[ú]yo	"he pleased"
3.p.	--	pl[u]yeron	"they pleased" ³⁷

I propose underlying representations such as /trax-/ for traer and /plak-/ for placer. The /x/ in the first verb is phonologically motivated from the surface /x/ in all the preterite indicative and preterite subjunctive forms such as traje [tráxe] Lat. traxi (Lat. 3rd. conj. trahere) and trajera [traxéra] respectively. This /x/ can also be justified on the basis of the related forms tracción [traksyón] "traction", tractor [traktór] "tractor". In the first case, the /x/ dissimilates to [k] before the fricative /s/ and in the second, the /x/ assimilates to [k] before another stop consonant. Observe other related forms such as contraer [kontraér] "to contract", contracción [kontraksyón] "contraction", contractivo

[kontraktíβo] "contractive", contracto [kontrákto] "contracted".

The /k/ in the stem /plak-/ of the verb placer can be phonologically motivated from the surface [ɣ] in plugo [plúɣo] Lat. plācuīt [plákuit] "he pleased" (Lat. 2nd. conj. placēre [plákere]). This /k/ is also justified on the basis of related forms such as first person singular of the standard preterite form plací [plasí] "I pleased", placentero [plasentéro] "pleasant", placer [plasér] "pleasure", plácido [plásiðo] "placid". In this case, the velar consonant /k/ is assibilated to [s] before the front vowels /e/ and /i/.³⁸

Let us consider the corresponding derivations for the preterite relic forms of both verbs traer and placer:

TABLE 73. Preterite Indicative

Underlying forms:	/trax-u-o/	/plak-u-o/
-(stress)	tráxuo	plákuo
1. $\begin{bmatrix} i \\ u \end{bmatrix} \Rightarrow \begin{bmatrix} y \\ w \end{bmatrix}$	tráxwo	plákwo
2. Metathesis	tráwxo	pláwko
3. [a]+[w]==>[o]	tróxo	plóko
4. /k/ ==> [g]	--	plógo
5. [g] ==> [ɣ]	--	plóɣo
6. [o] ==> [u]	trúxo	plúɣo
Phonet. outputs:	[trúxo]	[plúɣo]

Observe that rule (3) combines a low vowel [a] with the glide [w] to form the mid front vowel [o]. A similar process is involved in the derivation of quepo [képo] from [káypo] in which the vowel [a] is combined with [y] to form the mid front vowel [e]. This analysis is predicated on the assumption that we already have a rule of Glide Formation (rule 1)³⁹ and that the rule of Metathesis which was formulated in (57) above for the preterite forms of haber, saber and caber also operates on trujo from [tráx-w-o] Old Sp. troxe *traxui, Lat. traxī and plugo from [plák-w-o] Old Sp. ploqo *plaucit, Lat. plācuīt, thereby yielding the correct conditions needed by rule (3).

In order to account for the derivations given in Table 73 above, Metathesis (rule 2) must be reformulated again, taking into consideration the velar consonants /x/ and /k/:

(60) Metathesis (second version):

$$\begin{bmatrix} b \\ p \\ k \\ x \end{bmatrix} + \begin{bmatrix} y \\ w \end{bmatrix} \implies \begin{bmatrix} y \\ w \end{bmatrix} + \begin{bmatrix} b \\ p \\ k \\ x \end{bmatrix} \Bigg/ \begin{matrix} v \\ [a] \end{matrix} \text{ ______ } \begin{matrix} v \\ [] \end{matrix}$$

That is,

Metathesis (second version):

Structural Description (SD)

$$\begin{array}{cccc} \text{V} & & & \text{V} \\ [+low] & + & [+grave] + \begin{bmatrix} -CONS \\ -VOC \end{bmatrix} & + [\quad]^{+0} \\ 1 & & 2 & 3 & 4 \end{array}$$

Structural Change (SC)

====> 1324

The rule of Vocalic Raising formulated in (59) above applies to the preterite forms of traer and placer in order to explain that the [o] in [tróxo] and [plóyo] is raised to [u] before the velars /x/ and /k/.

3.2.3 Poder, Poner and Responder.

The second conjugation verbs poder, poner and responder are related to haber, saber and caber as well as to traer and placer since they are subject to a set of phonological rules made up of Glide Formation, Metathesis, and Vocalic Raising in the preterite forms. The Raising rule applies to the vowel [o] + [w]. This glide comes from an /u/ increment in the underlying representations that have been acted upon by Glide Formation and Metathesis. These phonological rules account for the alternation [o-u] observed in poder, poner and responder as shown in the

derivations given below:

TABLE 74. Preterite Indicative.

Underlying forms:	/pot-u-e/	/pon-s-u-e/
- (stress)	pó [́] tue	pón [́] sue
1. $\begin{bmatrix} i \\ u \end{bmatrix} \Rightarrow \begin{bmatrix} y \\ w \end{bmatrix}$	pót [́] we	pón [́] swe
2. Metathesis	pów [́] te	pón [́] wse
3. /n/ => \emptyset /G _ s --		pów [́] se
4. [o+w] => [o]	pó [́] te	pó [́] se
5. [t] => [ð]	pó [́] ðe	-
6. [ð] => [ð]	pó [́] ðe	-
7. [o] => [u]	pú [́] ðe	pú [́] se

Phonet. outputs [pú[́]ðe]

[pú[́]se]

As can be observed in Table 74 above, the underlying stems for the preterite forms of poder and poner are /pot+u/ and /pon+s+u/ respectively.

The /t/ in /pot+u/ is phonologically motivated from the surface [ð] which appears in all the forms of the verb poder, such as podía [po[́]ðía] "I could", puedo [pwe[́]ðo] "I can". Note that the phonemic /t/ appears in the related form potencia [potensia] "potency". In the case of the verb poner, /pon-/ is the stem of all the forms with exception of the preterite and past participle forms in which a surface [s] is present. Thus, I

propose that the underlying /s/ occurs only in the preterite and past participle forms of the verb poner and, in this case, the final stem consonant /n/ is deleted. The n-deletion rule before s (see Table 74 above) is needed historically for deriving mesa [mesa] "table" from Lat. mensa, mes [més] "month" from Lat. mens, mensis, seso [séso] "brain" from Lat. sensus, and esposo [espóso] "husband" from Lat. spōnsus. Given erudite words such as mensual [menswál] "monthly", comensal [komensál] "table companion", sensatez [sensatés] "prudence" and esponsales [esponsáles] "betrothal", we assume that n-deletion rule applies only to vulgar words. (See Foley, 1965:70) This assumption is justified if we observe the derivation of the verb responder "to answer" from Lat. respōndēre. In Vulgar Latin, the preterite form of this verb was *responsi, Old Sp. respuse, M.Sp. respondí (LAS), respuse (dialect). The n of *responsi has been deleted as noted in respuse.

The preterite relic forms repuse, repusiste, repuso, repusimos, repusieron of the verb responder are not presented in Table 74 above since this is a case of lexical confusion between the verb reponer from Lat. repōnēre and the verb responder from Lat. respōndēre. As stated by Wahlgren (1920:82) "..., comme en français, en provençal, en italien, etc., l'influence du verb reponer se fait également sentir (cf. parf. repuse, part. repuesto pour respuse, respuesto)".

The forms of the verbs reponer and responder are confused in almost all Romance languages. In Raynouard, we observe respos "he answered" and a respost "he has answered"; Littré gives the imperative form of Old Fr. repones "answer-you pl.". Santa Teresa uses repuesta "answer" for respuesta "answer". (Cf. Cuervo, 1881:90) Furthermore, the lexical confusion between forms of responder and reponer is observed in the following examples taken from Cuervo (1881:90): a) "Podrá decirse que, ejerciendo allí el magisterio de la cátedra, el amor de los discípulos le inclinaba á favor de los ingenios de aquel país. Pero es fácil reponer que..." (Feijoo, Españoles americanos). b) "Podría reponérsele que semejante estilo y versificación, propios de una fábula...no lo son en modo alguno de los géneros elevados de la poesía". (Quintana, Introducción á la poesía castellana del siglo XVIII, art. IV) siglo XVIII, art. IV)

In order to account for the preterite forms of the verbs poder, poner and responder, Metathesis (rule 2) will be rewritten in (61):

(61) Metathesis (third version):

$$\begin{bmatrix} \beta \\ p \\ k \\ t \\ n \\ x \end{bmatrix} + \begin{bmatrix} y \\ w \end{bmatrix} \Rightarrow \begin{bmatrix} y \\ w \end{bmatrix} + \begin{bmatrix} \beta \\ p \\ k \\ t \\ n \\ x \end{bmatrix} / \begin{bmatrix} v \\ a \\ o \end{bmatrix} \longrightarrow \begin{bmatrix} v \end{bmatrix}$$

In this rule of Metathesis, we observe that the vowel [a] occurs in the root when the following consonant is specified [+labial], as for example in [áβwe], [sápwe], and [kápwe] of haber, saber, and caber respectively. The rule extends to the velars /k/ and /x/ after the vowel [a] and to /t/ and /n/ after the vowel [o]. The vowels [a] and [o] are, however, preceded by a [+labial] segment in the case of [plákwo] (=plugo) of the verb placer, and in [pótwe], [pónswe] of the verbs poder and poner. However, we use the feature [+grave] in the formulation of Metathesis in (60) because of the inclusion of the segments /k/ and /x/ in root final position, as observed in rule (61).

As we did for Metathesis, the rule of Vocalic Raising will be also formulated in order to account for the alternation [o-u] observed in poder, poner and responder:

(62) Vocalic Raising 1 (second version):

a)	$\begin{array}{l} [aw] \\ [ow] \end{array} \Rightarrow [o]$	$\frac{([w]=\text{increment})}{C, [-\text{cons}]}$	$\frac{}{(\text{from } /E/)}$
b)	$[o] \Rightarrow [u]$		

3.2.4 Querer and Ver.

The second conjugation verbs querer "to want" and ver "to see" have a high vowel i in the root of the preterite indicative. I will show in this subsection that these two verbs are morphophonologically related to haber, saber and caber. Querer and ver which manifest a front vowel [e-i] raising alternation constitute a parallel with five verbs from the second conjugation, viz. haber, saber, caber, traer and placer which show the back vowel [a-u] alternation and with the three verbs poder, poner and responder which show the back vowel [o-u] alternation.

Consider the following derivations which correspond to the first person singular of the preterite form quise [kíse] "I wanted" of the verb querer and the relic form vide [bíde] "I saw" of the verb ver:

TABLE 75. Preterite Indicative.

Underlying forms:	/bed-i-e/	/k ^w es-i-e/
- (stress)	bédie	k ^w ésie
1. $\begin{bmatrix} i \\ u \end{bmatrix} \Rightarrow \begin{bmatrix} y \\ w \end{bmatrix}$	bédye	k ^w ésye
2. Metathesis	béyde	k ^w éyse
3. $\begin{bmatrix} e + y \\ i + y \end{bmatrix} \Rightarrow \begin{bmatrix} iy \\ i \end{bmatrix}$	bíyde bíde	k ^w íyse k ^w íse
4. $[d] \Rightarrow [ð]$	bíðe	-
5. $[k^w] \Rightarrow [k]$	--	kíse
Phonet. outputs	[bíðe]	[kíse]

I assume that the underlying stem for the verb ver Lat vidēre is /bed-/ and for the verb querer Lat. quaerēre /k^wes-/.⁴¹

The /d/ in the stem /bed-/ is phonologically motivated from the surface [ð] which appears in the relic forms vide [bíðe] "I saw" and vido [bíðo] "he saw". This segment also appears in related forms such as vidente [bidénte] "seer". In the case of quise [kíse], the phonemic /k^w/ can be motivated by the non palatalization of the [k] to [s] before front vowels [i,u] and by the orthographic qu which remains before a front vowel; it appears in all the forms of the verb querer. Observe Lat. quaesivi, Ital. chiese, Old Fr. quist, Prov. ques, Port. quis.

Rule (5) which generates the correct phonetic output [kíse]

from [k^h íse] also applies in forms such as qué [ké] from /k^hé/ "what" and quién [kién] from /k^hién/ "who".

At the beginning of chapter 3, I assumed that the underlying representations of the forms of haber, saber and caber show an incremental vowel /u/ in the preterite indicative. The same assumption is valid for the verbs traer, placer, poder, poner and responder as has been observed in the analysis presented in 3.2.1.-3.2.4. I propose that the preterite forms of the verbs ver and querer, whose derivations are given in Table 75 above, as well as the verb hacer, which will be analyzed in 3.2.5. below, have a theme vowel /i/ instead of an /e/ as in the verb temer (preterite temí "I feared" from /tem-e-i/)⁴² which is the regular pattern verb of the second conjugation. Then, the main difference between these irregular verbs and the regular pattern verb of the second conjugation can be attributed to the presence of a different theme vowel in the underlying representation of the verb forms under consideration.

As presented in the data in chapter 1 (see Table 12), the preterite relic forms vide and vido of the verb ver are used beside the standard forms ví, vió. The difference between these two sets of forms is that the vowels of the endings in the first set vid[e] and vid[o] are not stressed as are those in the second set v[í] and vi[ó]. The forms of the second set are considered regular since they follow the stress pattern of the

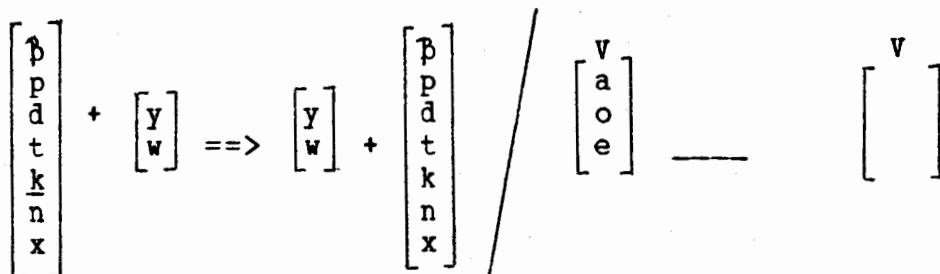
verb temar "to fear", 1st. person singular tem[í] and 3rd. person singular temi[ó], which is the pattern verb of the Spanish regular second conjugation. However, the underlying stem for both sets of forms is /bed-/. The relic forms vide and vido become regular ví, vió (like temí, temió) when Spirantization and ð-deletion have applied to them as shown in table 24 below:

TABLE 76. Preterite Indicative.

Underlying forms:	/bed-i-e/	/bed-i-o/
- (stress)	bédie	bédio
1. Glide formation	bédye	bédyo
2. Metathesis	béyde	béydo
3. [e + y] ==> [iy]	bíyde	bíydo
[i + y] [i]	bíde	bído
4. [d] ==> [ð]	bíðe	bíðo
5. [d] ==> ø	bíe	bíc
6. e-deletion	bí	-
7. Stress change	--	bió
8. Glide Formation	--	byó ⁴³
Phonetic outputs	[bí]	[byó]

In concluding the analysis of the verbs ver and querer, the rule of Metathesis which was reformulated in 3.2.3. above will be rewritten in (63) below in order to include the segment /d/ also involved in this process:

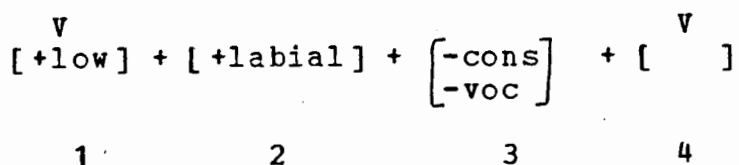
(63) Metathesis (final version):



Metathesis can be broken down into five subrules depending on the kinds of consonants and the vowel which occur in the underlying stems of the forms under analysis. In the case of the verbs haber, saber, and caber, a bilabial segment appears at the end of their respective roots /ab-/, /sap-/, and /kap-/, and the preceding vowel is always [a]. This part of rule (63) is given in (63a):

(63a) Metathesis 1:

Structural Description (SD)



Structural Change (SC)

====> 1324.

Metathesis also applies in the environment of the vowel [a] that is between a labial segment such as [p] in [plákwo] and a velar which is described with the feature [+grave]. This process is formulated in (63b):

(63b) Metathesis 2:

Structural Description (SD)

	V				V
[+labial]	+ [+low]	+ [+grave]	+ [-cons	+ [
				-voc]
1	2	3	4		5

Structural Change (SC)

====> 12435.

Observe that in the underlying stems /ak-/ and /trax-/ of the verbs hacer and traer, the last consonants, which have the feature specification [+grave], are preceded by the low vowel [a] as is the case in [plákwo] of placer shown in (63b) above. This is the environment in [tráwx-o] from [tráxwo] and in [áyk-e] from [áky-e], as can be accounted for by subrule (63c) below:

(63c) Metathesis 3:

Structural Description (SD)

$$\begin{array}{cccc} \text{V} & & & \text{V} \\ [+low] + [+grave] + \begin{bmatrix} -cons \\ -voc \end{bmatrix} + [\quad] \\ 1 & 2 & 3 & 4 \end{array}$$

Structural Change (SC)

====> 1324.

In the case of the preterite forms [púde] and [púse] of the verbs poder, and poner, Metathesis applies to [pótwe] and [pónswe], giving [pówte] and [pównse] respectively. The vowel involved in this specific case is the back vowel [o] preceded by the labial segment [p] and followed by dentals. This is formalized in (63d):

(63d) Metathesis 4:

Structural Description (SD)

$$\begin{array}{ccccc} \text{C} & & \text{V} & & \text{V} \\ [+labial] & \begin{bmatrix} +back \\ -low \\ -high \end{bmatrix} + [+dental] + \begin{bmatrix} -cons \\ -voc \end{bmatrix} + [\quad] \\ 1 & 2 & 3 & 4 & 5 \end{array}$$

Structural Change (SC)

====> 12435.

The intermediate derivations [bé'dye] and [bé'nye] of the preterite forms [bí'de] and [bí'ne] of the verbs ver and venir are also subject to the rule of Metathesis. This rule applies if the first consonant of the stem is again a labial followed by the front vowel [e] and a dental segment. The fifth part of rule (63) explains this process:

(63e) Metathesis 5:

Structural Description (SD)

C [+labial]	V [-back -high]	+ [+dental]	+ [-cons -voc]	+ [V]
1	2	3	4	5

Structural Change (SC)

====> 12435.

Thus, it is clear from the data that the presence of a [+grave] consonant, i.e. a labial or a velar, at the beginning or end of the root is a precondition on Metathesis.

3.2.5 Hacer, Decir and Venir.

In 2.1.2.1., I showed that the second conjugation verb hacer and the third conjugation verb decir are a subset of related verbs in the future and conditional forms since they underwent the same set of phonological rules.

Now, I will demonstrate that decir and hacer are subject to shared morphophonological processes which also apply to the second conjugation verbs querer and ver, and to the third conjugation verb venir in the preterite forms. I will conclude this subsection by claiming that the verbs hacer, decir, and venir manifest the front vowel [e-i] raising alternation observed in querer and ver in 3.2.4. above. These five verbs make up a subgroup of related forms with haber, saber, caber, traer, placer, and with poder, poner and responder which show the back vowel [a-u] and [o-u] alternations respectively. I will also demonstrate that hacer and decir are a clear example of gradual diffusion of a phonological process across the lexical items of the imperative.

Let us consider the derivations of the first person singular of the three verbs hacer, decir and venir in the preterite indicative:

TABLE 77. Preterite Indicative.

Underlying forms:	/ak-i-e/	/dik-s-i-e/	/ben-i-e/
- (stress)	ákie	díksie	bénie
1. Glide form.	ákye	díksye	bénye
2. Metathesis	áyke	díykse	béyne
3. /ks/=>[š] /_ [e]	--	díyše	-
4. [a+y] => [ey]	éyke	--	-
[e+y] => [iy]	íyke	--	bíyne
[i+y] => [i]	íke	díše	bíne
5. [k]=>[s]/_ [i,e]	íse	--	-
6. [š] => [x]	--	díxe	-
Phonetic outputs	[íse]	[díxe]	[bíne]

The underlying stems /dik+/ for decir and /ak+/ for hacer are phonologically motivated from the surface [ɣ] in digo [díɣo] Lat. dīcō [díko] "I say" and the [ɣ] in hago [áɣo] Lat. faciō [fákio] "I make". The underlying /k/ is also justified on the basis of the related forms dictado [diktáðo] "dictation" and acto [akto] "act".

The underlying /s/ after the segment /k/ in /dik-s-i-e/ is assumed to appear only in the phonemic representations of the preterite forms of the verb decir. /ks/ can be phonologically motivated on the basis of related forms such as dicción [diksyón] "diction", diccionario [diksyonáryo] "dictionary".

Dije [díxe] comes from *dixe [díše], Lat. dīxī [díksi]. Thus, rule (1) given in Table 77 above is perfectly justified. Observe Table 78 below which presents the reflexes of this rule in several Romance languages:

TABLE 78. Preterite Indicative.

O.Sp.	dixe	[díše]	M.Sp.	dije	[díxe]
O.Port.	dixe	[díše]	M.Port.	disse	[díse]
O.Cat.	dix	[díš]	M.Cat.	digué	[diɣé]

The preterite forms in the three Romance languages presented above underwent the same process which converts /ks/ into [š]. Then, rule (6) applies to Spanish [díše], giving the correct phonetic output [díxe]. Observe that rule (6) also applies to preterite forms such as [adúše] from /adukse/ Lat. aduxī [adúksi] "I alleged", giving [adúxe] (Old Port. aduxe [adúše], Old. Cat. adux [adúš]).

Given the analysis in Table 77 above, the correct phonetic representations of the preterite forms hice, dije, and vine can be generated. The rule of Metathesis which was formulated in (63) above applies to these forms. Note that a [+grave] consonant appears in the roots of these verbs as well.

The rule of Vocalic Raising will also be formulated in order to account for the raising of the front vowel [e] to give

[íse] from [áyke] and [bíne] from [béyne]:

(65) Vocalic Raising 2 (first version):

a) [ay] ==> [ey]
 ([y]=increment) / — C₁
 b) [ey] ==> [iy]**

Thus, Raising 1 given in (62) and Raising 2 in (65) above can be collapsed into one rule in order to account for the preterite forms of the second and third conjugation presented in this chapter:

(66) Vocalic Raising (final version):

a) $\begin{bmatrix} aw \\ ay \end{bmatrix} \implies \begin{bmatrix} ow \\ ey \end{bmatrix}$
 ([w,y]=increments) / — C₁ [-cons]
 (from /E/)
 b) $\begin{bmatrix} ow \\ ey \end{bmatrix} \implies \begin{bmatrix} uw \\ iy \end{bmatrix}$
 (final phonetic outputs: [u,i])

In 2.1.2.2., I showed that the correct phonetic representations [diré] and [aré] of the future forms of the verbs decir and hacer respectively as well as their corresponding conditional forms diría [diría] and haría [aría] could be accounted for if a) the Theme Vowel Deletion rule postulated by Harris (1969:75) (see rule (55) in chapter 2) applies to configurations /v #dis+i+r #é# /v and /v #as+e+r #é# /v, giving /v #dis+r #é# /v and /v #as+r #é# /v respectively; and b) if the final consonant of the roots [dis+] and [as+] is

deleted before /r/ by a phonological rule which was also formulated in chapter 2 and is repeated in (67) below:

(67) s ==> ∅ / + ___ r (cf. rule 22)

Let us now observe the future and conditional forms of the verbs bendecir "to bless", maldecir "to curse", rehacer "to remake", and satisfacer "to satisfy", which are complex forms of decir and hacer respectively:

TABLE 79.

Infinitive	Future	Conditional
decir	diré,ás,...	diría,ías,...
bendecir	bendeciré,..	bendeciría,..
maldecir	maldeciré,..	maldeciría,..
hacer	hare,ás,...	haría,ías,...
rehacer	reharé,...	reharía,...
satisfacer	satisfaré,..	satisfaría,..

Table 79 above shows that the forms of decir but not its complex forms have undergone morphophonological processes such as Vowel Deletion (rule 3, in 2.1.2.1.) and Root Final Consonant Deletion (rule 67 above=rule 22, in 2.1.2.2.) while all the forms of hacer have undergone such processes. This is consistent with the Lexical Diffusion hypothesis.

The case is exactly the same in the imperative forms of decir, bendecir and maldecir:

TABLE 80.

Infinitive	Imperative
decir	dí
bendecir	bendice
maldecir	maldice

That is, the form of decir but not its related forms has undergone Final Vowel Deletion and Root Consonant Deletion.

However, in the imperative forms of hacer, rehacer and satisfacer:

TABLE 81.

Infinitive	Imperative
hacer	haz (orthografic z = [s])
rehacer	rehaz
satisfacer	satisfaz/satisface

only the process of final vowel deletion has applied.

The facts that have been presented so far with respect to the future, conditional and imperative forms of the verbs decir, hacer and their complex forms can be explained only if we assume that Vowel Deletion and Root Final Consonant Deletion operate gradually across the lexicon of these verbs. In other words, the future and conditional forms of the verbs decir, hacer and the compounds of hacer have been affected by the process while the

complex forms of the verb decir , i.e. bendeciré , maldeciré , etc., have not. In the imperative, the verb decir has been more susceptible to the act of Final Vowel Deletion and Root Final Consonant Deletion. Only the process of Final Vowel Deletion has applied to the verb hacer and its complex forms rehacer and satisfacer.

Note that the application of this type of phonological processes must be gradual in terms of the LEXICAL DIFFUSION hypothesis. The fact that two lexical items such as satisfaz and satisface "please-imper." coexist synchronically is evidence of the gradual application of the process. This case is in fact similar to the process that has gradually been applying to the present indicative, present subjunctive, and preterite indicative forms of the verbs haber, saber and caber analyzed in 3.1.2. The set of phonological rules which operates on these three verbs appears to have lost some impetus, as was demonstrated by forms which have not undergone the change. Similarly, the complex forms of the verb decir in the future and conditional as well as in the imperative show that the phonological process represented in this case by Vowel Deletion and Root Final Consonant Deletion has also lost some impetus. We can assume, as in the case of the verbs haber , saber and caber, that it is possible that the set of rules will eventually apply to the complex forms of hacer and decir not yet affected by it.

The Final Vowel Deletion which applies to the forms di of decir and haz of hacer given in Tables 80-81 above also accounts for the imperative forms of the verbs poner "to put", tener "to have", venir "to come", and salir "to get out" presented in Table 82 below:

TABLE 82.

Infinitive		Imperative
poner	/pone/ ==> [pón]	pon
tener	/tene/ ==> [tén]	ten
venir	/bene/ ==> [bén]	ven
salir	/sale/ ==> [sál]	sal

Note that the final vowel of the imperative is not deleted in regular verbs:

TABLE 83.

Infinitive		Imperative
amar	(1st.conj.)	ama [áma]
temer	(2nd.conj.)	teme [tème]
partir	(3rd.conj.)	parte [parte]

The conditions on /e/ deletion are determined by the nature and number of the preceding consonants. Also note that the underlying /e/ that I proposed for the imperative forms of the verbs given in Table 82 above appears in bendice, maldice and satisface. The same process of Final Vowel Deletion operates in the history of the following nouns:

TABLE 84.

Latin	sole	==>	sol	"sun"
	sale	==>	sal	"salt"
	mare	==>	mar	"sea"
	mense (mese)		mes	"month"

Furthermore, observe that the vowel /e/ disappears in final position in the imperative forms of the second conjugation verbs ver, ser, and leer: (Before e-deletion applies, these forms undergo Spirantization and Consonant Deletion)

TABLE 85.

Infinitive		Imperative	
ver	/béde/ => be ^h de => bé ^h e => [bé]		
ser	/séde/ => se ^h de => sé ^h e => [sé]		
leer	/lége/ => le ^h ye => lé ^h e		

Consequently, two phonological rules are required to generate the imperative forms given in Tables 81 and 82 as well as the forms presented in Table 80. The first rule which is given in (68) below deletes the final vowel /e/ in all these forms. Of course, they must be specially marked in the lexicon to undergo it gradually:

(68) e ==> \emptyset / C _____ #

The second rule, which is given in (69) below, has only applied to the imperative form /dis/ deleting the final root consonant /s/, to give [dí]:

(69) s ==> ∅ / _____ #

In conclusion, it has been demonstrated in 3.2.5. above that the verbs decir and hacer are subject to shared morphophonological processes which also apply to the second conjugation verbs querer and ver, and to the third conjugation verb venir in the preterite forms. These five verbs make up a subgroup of related forms with the verbs haber, saber, caber, traer, placer, and with poder, poner and responder which show the back vowel [a-u] and [o-u] alternations respectively. It was also demonstrated that the relationship of the verbs decir and hacer with ver, venir, poner, tener, and salir is based on the gradual application of a phonological process represented by Final Vowel Deletion and Root Final Consonant Deletion across the lexical items of the future, conditional, and imperative.

3.2.6 Andar, Estar and Tener.

The first conjugation verbs andar "to walk" and estar "to be", and the second conjugation verb tener "to have" have an [u] in the preterite forms as can be observed in Table 86 below:

TABLE 86.

Preterite Indicative

andar	and[ú]ve
estar	est[ú]ve
tener	t[ú]ve

As was stated in 2.1.1., Bello (1881:153) claims that the verbs andar, estar and tener belong to "El quinto orden o grupo de formas afines" (the fifth class or group of related forms) because they change their roots and-, est- and ten- to anduv-, estuv- and tuv- in the preterite indicative. This is the reason, according to Bello, for assuming that these three irregular verbs are related to the second conjugation verbs haber, saber and caber.

In 2.1.1., I concluded that Bello's analysis of the fifth class of irregular related forms is a purely descriptive analysis of the phenomena observable only at the level of surface structure representation, i.e. a purely morphological classification. Now, I will demonstrate why andar, estar and

tener have an [u] in the preterite forms and how they are, therefore, related to the verbs haber, saber and caber.

If /and-/ and /est-/ are the basic forms of the first conjugation verbs andar and estar, then the corresponding preterite forms anduve [andúpe] and estuve [estúpe] can not be the result of changing the basic forms, contrary to Bello's (1881:153) claim, but rather of adding the simple preterite stem hub- /úp-/ of the verb haber to the basic forms /and-/ and /est-/. This parallels the earlier proposal on the formation of the future tense by the addition to the infinitive of the present tense forms of haber.

I propose that the stem anduv- [andúp-] of the preterite indicative forms anduve, anduviste, anduvo, etc. (see forms in Tables 5 and 8 in the Data) is a compound, the result of applying a morphological rule which adds the preterite variant hub- [úp-] of the root /ab-/ of the verb haber to the root /and-/ of the verb andar, immediately after the final overt consonant. This type is traditionally called "a periphrastic form", that is, a form in which the principal verb is combined with an auxiliary or some other particle.

I also propose that the preterite forms estuve, estuviste, estuvo, etc. of the verb estar and tuve, tuviste, tuvo, etc. of the verb tener are compound forms. Note that, in the latter,

the t of ten- is the first overt consonant.

Observe the formation of the preterite forms of the verbs haber, estar and tener in Romance languages such as Portuguese and Catalan:

TABLE 87.

Preterite Indicative.

PORTUGUESE:

HAVE	TER	ESTAR
1.s. <u>houve</u>	<u>tive</u>	<u>estive</u>
2.s. <u>houveste</u>	<u>tiveste</u>	<u>estiveste</u>
3.s. <u>houve</u>	<u>teve</u>	<u>esteve</u>

CATALAN:

HAVE		TENIR		ESTAR	
Old	Mod.	Old	Mod.	Old	Mod.
1.s. <u>ach</u>	<u>haguí</u>	<u>tinch</u>	<u>tinguí</u>	<u>estich</u>	<u>estiquí</u>
3.s. <u>ach</u>	<u>hagué</u>	<u>terch</u>	<u>tingué</u>	<u>estech</u>	<u>estiqué</u>

Note that, in Portuguese, the endings -ve, -veste, -ve, of the three preterite singular forms of the verb haver "to have" also appear in the other three forms of the verbs ter "to have" and estar "to be". Ter is the usual and preferred perfect tense auxiliary in spoken Portuguese. The forms of haver are found only in formal written and spoken style, primarily in the past perfect tenses. Similarly, note that in Old Catalan the ending -ch of the first and third person singular forms of haver "to

have" appears in the forms of tenir "to have" and estar "to be". Exactly the same phenomenon occurs in Modern Catalan, i.e. the endings -quí and -qué of the first and third person singular of haver are also the endings of the corresponding forms in the other two verbs.

This shows that a close morphological relationship between the preterite forms of the verbs haber, tener and estar occurs not only in Spanish but also in other Romance languages such as Portuguese and Catalan. Additionally, the relation between the verbs haber and tener is conditioned by semantics: haber is the perfect auxiliary verb in Spanish, but in a context such as tú has de salir mañana obligatoriamente it means "you have to leave tomorrow anyway". Note that both verbs haver and ter are used as perfect tense auxiliaries in Portuguese.

All the facts presented so far support my claim that Spanish preterite forms of andar, estar and tener are the result of applying a morphological rule that reads as follows:

(70) To form the preterites of the first conjugation verbs andar and estar, the second conjugation verb tener, and their respective derivational compounds, add the preterite variant /ub-/ [úβ] of the root /ab-/ [áp-] of the auxiliary verb haber as well as the person and number endings -e, -iste, -o, -imos, and -eron to the basic roots /and-/ and /est-/ of the verbs andar and estar respectively, and, by analogy, to the dental stop consonant /t/ of the basic root /ten-/ of the verb tener.

In conclusion, the preterite forms anduve, estuve and tuve are not inflected forms of the respective verbs andar, estar and tener, as claimed by Bello (1881:153), but rather compound constructions, within which inflection applies to the added forms of the verb haber.

FOOTNOTES TO CHAPTER 3.

- ¹ This is not to say that other linguists have disagreed with this claim. On the contrary, Bello (1881), Cuervo (1881), and Foley (1965) have shown interesting relations between the three verbs even though their analyses have been too restricted.
- ² I would like to thank Dr. E. R. Colhoun at whose suggestion Section 3.1.4. was done. Of course, the analysis presented here is my own responsibility.
- ³ I refer here to the irregular preterite forms of placer and traer, that is, truje, trujo, and plugo, pluguieron respectively. These two verbs also have regular preterite forms such as traje, trajo, and plací, placieron. (See Tables 12 and 13 of chapter 1 in the Data)
- ⁴ De in this example is a paragogic de, that is, a syllable added at the end of a word.
- ⁵ Verná is a metathesized form of the usual vendrá "he will come".
- ⁶ It is difficult to say whether sentences (a) and (b) are synonymous or not since they do not have one reading in common. Sentence (a) means "has an obligation to be here" and the other possible reading is "he is not here inspite of the fact that he has an obligation to be here" (cf.

example (d-1), p.39 below in which the reading "be necessary" is also possible). Sentence (b) is a future and a future of probability, meaning "he is probably here now". It does not have an obligation meaning as sentence (a) does, unless it is a substitute for a command form, as for example in Estarás aquí mañana "You have to be here tomorrow". Consequently, examples (a) and (b) cannot be considered strong evidence in this analysis.

7 Harris' point of view is also assumed by Jensen (1971:84) who says that "the synthetic future of Classical Latin (amabo, etc.) is replaced in Romance by an analytical periphrasis, consisting of the infinitive followed by the present tense of an auxiliary verb which, in most areas of Romania, is habēre (ex.: scribēre habeo, vēnire habet). This construction originally expressed obligation, habeo being more or less the equivalent of debeo, but it soon became the normal formula of futurity."

8 Regula and Jernej (1965:152, ft.note 3) consider abbiamo a "forma analogica derivata dal congiuntivo", that is, from the subjunctive abbia, abbia, abbia, abbiamo, abbiano.

9 This assumption is supported by Jensen's observation that "when used as future endings, the forms of the present tense of habēre are reduced in the first person plural where the ab- portion is dropped. The future of cantare is given as an example of this formation:

*cantare aio	canterò
*cantare as	canterai
*cantare at	canterà
*cantare (hab) emus	canteremo
*cantare habent	canteranno

(Jensen, 1971:84)

10 This concept was not entirely unknown to earlier generations of linguists. According to Chen and Wang (1975:257), Sapir, Karlgren, and Sommerfelt, have also suggested directly or indirectly the lexically gradual nature of sound change.

11 The term residue is defined by Wang (1969:10). He says that "There are situations in which two or more changes are applicable to the same subset of morphemes at the same time. Such situations leave residues which are the direct consequences of sound changes that were prevented from running their full course".

12 Note that Professor Roberts' [æntɪsəpéytəri] and Professor Colhoun's [æntɪsə pətɔ̃ri] is also evidence that Vowel Shortening is still applying as Kiparsky (1968) has claimed.

13 Note that, in principle, the irregular vowel and consonantal alternations of the second conjugation verbs haber, saber, and caber are different from those manifested by the regular verbs of the second conjugation.

(See Table 2 in chapter 1)

- 14 Glide Formation (rule 3) applies to all unstressed high vowels when they are in prevocalic position, as was exemplified in chapter 2 of this thesis. (cf. section 2.2.1.) As can be observed in Tables 45-53, rule (3) has to be crucially ordered after rules (1-2) and also before rules (4-6).
- 15 Deletion of the vowel [o] applies only in Tables 45 and 46. It has to be ordered after Spirantization (rule 9) and β -deletion (rule 10) since the vowel [o] is deleted only after a vowel. The specification of a vowel in the environment of rule (11) is justified since it applies to [é^o] in Table 45, giving [é], and to [sé^o] in Table 46, giving [sé]; it does not apply, for instance, to [ó^o] (preterite form [ú^o]) as shown in Table 48.
- 16 Diphthongization applies to [hawbÉron] as well as to [sawpÉron] and [kawpÉron], (see Tables 48-49), giving [hawbyéron], [sawpyéron], and [kawpyéron] respectively. As can be noted in the Data (Tables 4-13 in chapter 1), the phonetic [yé] from [É] appears in the third person plural forms of the preterite indicative of the three verbs under analysis. It also appears in the same third person plural of the same tense of all the second conjugation verbs in Spanish; e.g. [komyéron] "they ate", [temyéron] "they feared", etc.

Since Diphthongization applies to the stressed mid-vowels /O/ and /E/, (see Lema, 1978: Chapter IV for details), it has to be ordered after Stress-assignment. Moreover, it has to apply after Yod-deletion (rule 4) in the derivations of Tables 47-49, that is, the input for y-deletion is not [habwyéron] but rather [habwÉron].

17 I am grateful to Dr. E.W. Roberts for suggesting this direction for the analysis presented in this chapter.

18 Note that haber de may appear in constructions such as ha de estar en su oficina "(he) is probably in his office", meaning probability. (cf. footnote 6 of this chapter)

19 This construction is unusual since we get present indicative of haber plus imperfect of ver. Compare this sentence with a) Mucho tiempo hace que no te veo (present of hacer - present of ver) and b) Mucho tiempo hacía que no te veía (imperfect of hacer - imperfect of ver).

20 Observe that the present indicative forms of the verb haber had not been reduced in Old Spanish. Habes, habe, habemos, haben, were the usual forms at that time. (cf. Cuervo, 1881:87) Thus, with this kind of information, we can determine, for instance, the relative chronology of β -deletion; also, its gradual evolution and expansion across the forms could be determined.

21 The term "persistent" was first used by Chafe (1967) in his article "The Ordering of Phonological Rules", in: IJAL

34,115-136, and then taken into consideration by Newton (1970).

22 Newton has presented several instances of rule application in Greek showing that strict adherence to "point rule" phonology involves 1) the recognition of asymmetry violation, i.e. when, for example, two rules A and B are so related that A bleeds B and B feeds A, or where the relation between two rules is one of mutual feeding (cf. Newton, 1970:32-35); 2) the recognition of transitivity violation, i.e. where, for instance, a rule A feeds B and B feeds C, but at the same time rule A is so ordered that it is crucially preceded by rule C (cf. Newton, 1970:36-41); and 3) in both cases, the abandonment of ordered sets of rules.

23 Note here that the principle of GRADUAL DIFFUSION is similarly relevant to the use of Foley's RULE SCHEMA INTERRUPTION as it is to the use of Newton's LINEAR MODEL.

24 The relation \prec , according to Foley (1977:28), is the relative phonological strength of elements appearing phonetically as velars, dentals, and labials. He establishes the relation $g(1) \Rightarrow d(2) \Rightarrow b(3) \Rightarrow$ which indicates that g spirantizes more readily than d or b , and g and d spirantize more readily than b .

25 Observe that the [ḍ] remains in the same environment as shown by examples such as adulante [aḍulánte], madurar

[maðurár].

26 Note that the rule of Glide Formation does not apply to these forms even though the vowels [u] and [i] are next to another vowel. This suggests that Glide Formation is also a rule which is subject to LEXICAL DIFFUSION.

27 The interesting fact to note here is that ð-deletion occurs in formalistic style. Latin-American speakers say, for example, [laβáo] "washed" instead of [laβádo] even in careful speech. Note, however, that stress is probably relevant here in relation to the particular deletions.

28 In examples such as desnudo [desnú:], cornudo [kornú:], and mudo [mú:], the [ð] is dropped while the [β] and [γ] are never dropped, as shown in [estúβo] "he was" and [xúγo] "juice". Note again that the [ð] is formative initial while [β] and [γ] are root final.

29 Observe Table 44 in this chapter.

30 ð-deletion also applies to the imperfect form oía. Observe Mod. Sp. sentarse "to sit down" from Vulgar Lat. *adsedentāre (Old Sp. asentar, Mod. Port. assentar) derived from Lat. sedere.

31 Rule 6 is also needed to derive oyente [oyente] "hearer" from [awðyénte] Lat. audire.

32 This rule is rule (5) in Table 63 of this section and corresponds to rule (7) in the derivations given in Tables 45-53, 3.1.2.

33 It is important to point out that Metathesis applies to verb forms such as those in Table 66 and 67, and to nouns such as queso from [káysus] < [kásyus]. (Note that [kásyus] is in turn from [kásius] underlying form /kaseus/ from Lat. casēus) However, the vowel [e] in [késo] does not become [i] after Metathesis and Vowel Contraction apply, as is the case in verb forms such as [bíne] of venir. (See 3.2.5. for more details) Moreover, note that it is only in verbs that the [y] and [w] from /i/ and /u/ increments occur and are metathesized.

34 The consonantal environment is very important with respect to the rule of Metathesis. It applies between the low vowel [a] followed by the labial consonants [p] and [β] in the verbs haber, saber, and caber. (cf. Tables 45-53, 3.1.2.) Furthermore, Metathesis applies after Glide Formation.

35 Only part (b) of rule (58) is relevant for our analysis.

36 Note that there appears to be a global relationship between a) and b) (see Sommerstein, (1977:190-2) for details and references on the use of the term "global rule"). However, we will not expand on this issue in this thesis.

37 These are the preterite relic forms of the verbs traer and placer. As has been pointed out in chapters 1 and 2, these two verbs also have standard preterite forms traje, trajo,

and plací, placieron. (See Tables 12 and 13 in the Data of chapter 1)

38 For more discussion on this, see 2.1.2.2.

39 See Harris (1969:31) for some more details about the rule of Glide Formation.

40 I use the Jakobsonian feature [+grave] to explain the inclusion of the velar segments /k/ and /x/. The feature links labial and velar consonants.

41 Note that the rule of Rhotacism applies in the derivation of querer [kerér] in which the [r] comes from an underlying /s/.

42 The /e/ in /tem-e-i/ is not changed by Glide Formation as it is in [kásius] from [káseus] < Lat. casēus, Sp. queso [késo] "cheese". (See Table 68)

43 As can be noted, Glide Formation has applied at two different stages in the derivation of [byó] from /bed-i-o/. The same manner of application was observed with respect to Spirantization and β-deletion shown in 3.1.3. above.

44 See note on global relation in Rule (59).

CHAPTER 4

CONCLUSIONS

The aim of the present thesis has been to propose an analysis that explains primarily the alternation [a-u] observed in the three irregular second conjugation verbs haber "to have", saber "to know", and caber "to fit (into)", and the alternation [p-β] observed in saber and caber. I demonstrated that these verbs are morphophonologically related and that they make up a subgroup of verbs with similar alternations in the present indicative, preterite indicative, and present subjunctive, which are different from those manifested by the regular verbs of the second conjugation.

We assumed in chapter 1 that Spanish verbs are regular in the first, second, and third conjugation if the theme vowel, that is, the vowel that follows the root of the verb, is a, e, or i respectively and the person-number endings are as those of the corresponding pattern verbs displayed in Tables 1-3. A verb

is considered irregular if its paradigm differs from that of the pattern verbs.

In chapter 2, we discussed the glide increments /y/ and /w/ which, according to Foley (1965), are involved in the underlying representations of the forms of certain members in the paradigms of the verbs haber, saber, and caber, and we concluded that the particular character of these glide increments is not motivated in Foley's analysis. Further, in chapter 3, we proposed that these three verbs show an underlying increment /i/ in the present indicative and present subjunctive and an increment /u/ in the preterite indicative instead of /y/ and /w/ as proposed by Foley (1965:64). The same analysis is valid for the preterite forms of the second conjugation verbs traer, placer, poder, poner, and responder as has been demonstrated in 3.2.1.-3.2.3. We also proposed that the irregular verbs of the second conjugation querer, ver and hacer, whose derivations are given in 3.2.4. and 3.2.5., have an underlying increment /i/ instead of a theme vowel /e/ as in the verb temer (preterite temi "I feared" from /tem-e-i/) which is the regular pattern verb of the second conjugation.

Consequently, the main difference between these eleven irregular verbs and the regular pattern verb of the second conjugation can be attributed to the presence of a different incremental vowel in the underlying representations of the verb

forms under consideration.

This study is also concerned with the irregular verbs decir and venir from the third conjugation which show an underlying increment /i/ in the preterite forms, as was presented in 3.2.5.

The analysis of the increments /i/ and /u/ is predicated on the assumption that we have a rule of Glide Formation as well as the rules of Metathesis and Vocalic Raising in our phonology of Spanish. These rules were formulated and motivated. As was demonstrated in 3.2.1.-3.2.5., it is better in terms of the whole system of Spanish phonology to postulate underlying /i/ and /u/ increments.

In chapter 3, we showed:

- a. that the verbs placer, and traer are related to the three verbs haber, saber, and caber because they share the alternation [a-u] in the preterite relic forms;
- b. that poner, poder, and responder are also related to the same three verbs as well as to traer and placer because of the raising of the root back vowel /o/ to [u] in the preterite indicative;
- c. how andar, estar, and tener which have an [u] in their preterites are related to haber, saber, and caber, and also to the five verbs mentioned above;

- d. that querer, ver and venir, which manifest a front vowel [e-i] raising alternation, and hacer, decir, that have an [i] in their preterites, constitute a parallel with those verbs which show the back vowel [a-u], [o-u] alternations; and
- e. that the verbs mentioned in (a-d) above are linked together in terms of shared morphophonological processes that operate gradually on various forms of the paradigms of their lexical items.

The study presented in this thesis was concerned with three important concepts that have been proposed in the theory of generative phonology, i.e. LEXICAL DIFFUSION (Wang, 1969), LINEAR ORDER (Newton, 1970), and RULE SCHEMA INTERRUPTION (Foley, 1977). In terms of the concept of LEXICAL DIFFUSION, our analysis dealt with phonological processes represented by the rules of Lenition, Spirantization, β -deletion, and Vocalic Raising that have gradually been applying to the forms of the verbs haber, saber, and caber. This set of phonological rules applies most extensively in the derivations of the forms of the verb haber, less extensively to the forms of the verb saber, and even less to those of caber. The set appears to have lost some impetus, as was shown by forms such as habemos [a β émos], quepo [képo], sabes [sá β es], etc. which have not undergone the change. Furthermore, the above mentioned set has been demonstrated to

apply gradually across the tenses of the verbs: the whole set of rules applies in the present indicative, fewer rules in the preterite, and even fewer in the present subjunctive. It was shown that the three verbs under consideration are reasonably assumed to be conditioned by grammar and common and varied usage to undergo a different number of phonological rules.

In 3.2.5., we demonstrated that the second conjugation verb hacer and the third conjugation verb decir are a clear example of Gradual Diffusion of a process represented by the rules of Vowel Deletion and Root Final Consonant Deletion. The future and conditional forms of hacer, decir, and the compounds of hacer have been affected by the processes while the complex forms of the verb decir, i.e. bendeciré, maldeciré, etc., have not. In the imperative, the verb decir has been more susceptible to the act of Vowel Deletion and Root Final Consonant Deletion. Only the process of Vowel Deletion has applied to the verb hacer and its complex forms rehacer and satisfacer. The fact that two lexical items such as satisfaz and satisface "please-imper." coexist synchronically is evidence of the gradual application of the processes. We assumed, as in the case of the verbs haber, saber, and caber, that it is possible that the set of rules considered in their derivations will eventually apply to the complex forms of hacer and decir in the future, conditional, and imperative not yet affected by it.

Based on the second theoretical concept, i.e. LINEAR ORDER of applying phonological rules as described by Newton (1970), we showed in 3.1.3. that Spirantization and β -deletion are two rules still active in the derivation of the present indicative, preterite indicative, and present subjunctive forms of the verbs haber, saber, and caber when other processes such as Glide Formation, Metathesis, Vowel Reduction, Vowel Contraction, and Lenition come into operation. We presented further evidence showing that Newton's model is compatible with the concept of LEXICAL DIFFUSION. In other words, even though Spirantization and β -deletion are active rules in the sense of Newton (1970) when Glide Formation, Metathesis, Vowel Reduction, Vowel Contraction, and Lenition operate, the first two rules do not apply to all the forms of the three verbs at the same time but rather gradually across them. This explains why Spirantization and β -deletion have not applied in the derivations of the preterite indicative and present subjunctive of saber and caber. (cf. Tables 49-53, chapter 3)

Finally, on the basis of the concept of RULE SCHEMA INTERRUPTION (Foley, 1977), we demonstrated that in the case of the three second conjugation verbs haber, saber, and caber Spirantization and β -deletion may also be considered to represent a phonological process that has been interrupted by the rules of Glide Formation, Yod Deletion, Metathesis, Vowel

Reduction, Vowel Contraction, and Lenition. This is so, provided that such an interruption applies in relation to specific lexical items, i.e. differentially across the lexicon as required by the Gradual Diffusion hypothesis. Moreover, it was noted that the results of an analysis in terms of LEXICAL DIFFUSION and Newton's LINEAR MODEL may be equivalent to an analysis in terms of Foley's INTERRUPTED RULE SCHEMATA combined with the concept of LEXICAL DIFFUSION. However, the final evaluation of the theoretically and empirically more adequate analysis is beyond the necessarily limited scope of this thesis.

The reasons why the intervocalic [β] drops in the first person singular forms [é] and [sé] of the verbs haber and saber while it remains in postonic position in infinitives such as haber [aβér], in the past tense forms such as había [aβía], and in past participles such as habido [aβído] could not be made completely clear in our analysis presented in 3.1.2. and 3.1.3. However, we did show that the parochial conditions established by Foley (1977) which specify that intervocalic /g/ and /d/ drop while labial /b/ remains are not totally sufficient to account for this problem. Consequently, we proposed that at least a phonological condition dealing with stress and roundness of the surrounding vowels may need to be added both to Foley's (1977) general parochial conditions for Spanish and to our specific analysis in terms of Lexical Diffusion presented in this study.

The data considered in this thesis are representative of Latin-American Spanish spoken by educated speakers. Furthermore, historical and synchronic data from other Romance languages such as Portuguese, French, Italian, and Catalan are presented to support the rules, rule ordering, and underlying representations proposed in the analysis.

It is the main purpose of this thesis to show that an analysis effected in terms of shared morphophonological processes that operate gradually on various forms of the paradigms of the verbs haber, saber, caber, traer, placer, poder, poner, responder, querer, ver, tener, and hacer from the second conjugation, decir and venir from the third conjugation, and estar, andar from the first conjugation provides new generalizations about facts of Spanish verb morphophonology, facts that would otherwise have to be regarded as totally idiosyncratic.

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