THEORIES OF STRESS ASSIGNMENT

IN SPANISH PHONOLOGY

THESIS

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By

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This thesis examines existing theories of Spanish stress assignment in generative phonology and proposes an alternative theory that is more effective in predicting the surface representations of Spanish stress. Stress is characterized according to traditional textbook standards and examples are given (Chapter I). The current theoretical setting, especially the theories of James W. Harris, is then described (Chapter II). This writer's own theory, based upon an underlying distinction between tense and lax vowels, is delineated (Chapter III) and defended (Chapter IV). The new stress assignment rule--along with a rule of vowel laxing before a word boundary (#) and a rule of stress adjustment--shows stress in Spanish to be predictable and, therefore, not phonemic.

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CHAPTER I

THE PHENOMENON OF STRESS IN SPANISH

Stress assignment on the surface level of Spanish words

has always been considered relatively straightforward in

terms of whether the final letter of the word is a vowel or

a consonant. Rules similar to the following are common in

traditional textbook grammars:

> a. The greater part of words ending
> in a vowel are stressed on the penultimate.
>
> b. The greater part of words ending
> in n or s are stressed on the penultimate.
>
> c. The greater part of words ending
> in other consonants than n or s are
> stressed on the last syllable.
>
> d. Words stressed on any syllable
> before the antepenultimate are usually
> compounds: bébaselo, escribiéndonosla
> (Ramsey and Spaulding 1965:11).

The weakness of such a rule as that above lies, of course,

in its imprecision. The expression "the greater part" omits

some forms--although one does not know which forms--from the

generalization in the rule. While exceptional forms are to

be expected in any natural language, they must necessarily

be kept to a minimum and examined carefully for evidence

that might relate them to more general statements that can

be made about the language.

As for the occurrence of stress in Spanish, the most general rule (and, therefore, the most imprecise) is

> (1) Stress may occur on any of the last three syllables.

What a statement like (1) does, however, is to give some idea of what kinds of forms <u>not</u> to expect. From this point, one can begin formulation of rules that will not only <u>describe</u> the occurrence of stress in the language, but also effectively <u>predict</u> it.

The element of prediction is a property of generative grammar. If any feature can be predicted in a language, then it is not distinctive--that is, it need not be listed separately in the lexicon, or in the total list of morphemes of the language. Those features which are predictable result from the application of one or more rules within the grammar. Since stress is a phonological process, rules predicting its assignment belong to the phonological component of a generative grammar.

The most comprehensive work dealing with the phonological component of a transformational generative grammar of Spanish is James W. Harris' <u>Spanish Phonology</u> (1969). Harris lists his purpose as two-fold on page one:

> First, there is an attempt to gain deeper insight into the widely studied facts of Spanish pronunciation by presenting a theory of these facts in the form of a generative grammar. . . . Second, a large and detailed body of data is made available in a form appropriate for testing certain parts of the universal phonological theory whose most recent and comprehensive statement is found in Chomsky and Halle (1968), <u>The Sound Pattern of English</u>.

In his work, Harris writes at some length about the assignment of Spanish stress. The rule that he tentatively formalizes to describe stress in non-verbs (118-122), is very close to the diachronic Latin Stress Rule (henceforth, LSR).[1] Harris quickly points out the exceptions to the LSR:

(a) Stress on the final syllable. . . .

(b) Stress four syllables form the end. . . .

(c) Antepenultimate stress in words with a "strong" penultimate syllable. . . .

(d) Stress on a penultimate lax vowel in a "weak" syllable. . . (119).

Of the exceptions Harris lists, two categories seem vacuous. Stress four syllables from the end, for example, occurs only in composites like dándonoslos.[2] Exceptions of the third type (c) would have the shape of the hypothetical *tánampo, but Harris notes that Spanish simply contains no such forms (119). Therefore, the first and the last categories (types a and d) are the largest and most important exceptions.

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[1]Harris' definition of the LSR is that it "roughly, assigns stress to the penultimate syllable of polysyllabic words if that syllable is 'strong' (contains a tense vowel or lax vowel followed by two or more consonants) and to the antepenultimate if the penultimate is 'weak' (contains a lax vowel followed by at most one consonant)" (118).

[2]Certain apparent exceptions Harris explains by assuming appropriate lexical representations. Thus, Harris (1969:119) says that words like láudano, "laudanum," have a glide /lawdano/ in their underlying forms. Ventrílocuo, "ventriloquist," has a rounded consonant /ventrilOKʷo/. Other apparent counter-examples may be accounted for similarly.

The preterite and future verb forms account for many
occurrences of final stress.[3] The vosotros form (second
person plural familiar) of the second and third conjugations
i.e., those that end in -er and -ir, respectively--in the
present tense also has final stress (pedir: pedís, "you ask
for;" comer: comís, "you eat"). Also, there are abundant
examples of non-verbs with final stress. Thus, the following
examples are merely representative of a much larger class:

(2) Final Stress in Non-Verbs[4]

café, "coffee"   jabalí, "javelina"
Perú, "Peru"   mamá, "mama"
motín, "mutiny"   dominó, "game of dominoes"
compás, "mathematical   rubí, "ruby"
            instrument"

Stress on a lax vowel in a penultimate weak syllable,
Harris' type (d) exception, shows up very regularly in forms
like those in the left-hand column of (3).

---

[3]Harris postulates the underlying forms of the preterite
(79-86) and future (91-96) so that they are only exceptions
to the LSR on the surface level.

[4]In this paper standard orthography is employed to the
extent that it does not obscure the discussion at hand.
Directly relevant phonetic material is enclosed in brackets,
with the exception of the marking of primary stress. Primary
stress is not always enclosed in brackets, even though it
is not necessarily present in the orthography. (Thus the
accent marks in régimen and papá are part of Spanish ortho-
graphy, where as those in casa and animo are not.) Lexical
representations are enclosed in slashes (//) unless other-
wise labeled.

(3) Words with Lax Vowels[5]

With Stress		Without Stress	
fiésta,	"feast"	festívo,	"festive"
ciérto,	"certain"	certidúmbre,	"certainty"
refiéro,	"I refer"	referéncia,	"reference"
ardiénte,	"burning"	ardentía,	"phosphorescence"
cuérno,	"horn"	cornúdo,	"horned"
fuéro,	"forum"	forénse,	"forensic"
huérto,	"kitchen garden"	hortalíza,	"garden truck"
fuénte,	"fountain"	fountanóso,	"containing springs"

The purpose of this thesis is to examine the validity
of the existing theories of Spanish stress assignment in
generative phonology and to determine the need for an alter-
native theory that is perhaps more effective in predicting
the surface representations of Spanish stress. Chapter II
reviews current theories of stress assignment in Spanish.
Chapter III sets forth and justifies my own set of rules
for the prediction of stress occurrence in Spanish. In my
view, these new rules reduce dramatically the number of
exceptions, account for otherwise unexplained stress shifts,
and are compatible with other rules in the generative phono-
logy of Spanish.

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[5]Examples in this chart are from Ramsey and Spaulding
(14).

CHAPTER II

THE THEORETICAL SETTING

The first interestingly complete transformational-generative
account of stress assignment in Spanish was included in Harris'
Spanish Phonology (1969). Although restricted in general to
a synchronic description of the phonology of Mexico City
Spanish, Harris' work provides brilliant insights into the
structure of all dialects of the language, and his original
contributions to the description of Spanish have made this
work truly seminal in the area of Romance linguistics. Indeed,
Harris' Spanish Phonology enjoys for Spanish the same position
that Chomsky and Halle's The Sound Pattern of English enjoys
for English phonology: later works may disagree with Harris,
but no work in the field will be taken seriously that ignores
him.

For these reasons, any review of the literature on
generative stress assignment must start with Harris' 1969
account, even though more recently (1975) Harris admits that
the earlier treatment "did not pretend to be either exhaustive
or definitive" (56). In fact, he has himself presented a
refined version of stress assignment in Spanish within the
framework of transformational-generative phonology.

Because they reject many of the theoretical assumptions
of transformational-generative phonology, some linguists,

calling themselves natural generative phonologists have criticized Harris' theories of Spanish phonology. Foremost among these are Joan B. Hooper and Tracey Terrell. Hooper and Terrell (1976) present an alternative to Harris' generative account of stress[1] and other transformational generative theories which assign stress "by counting vowels from the end of the word" (64). The analysis by Hooper and Terrell, rather, is based on natural generative theory which differs from the standard transformational generative theory in that it "places strong constraints on phonological abstractness."

This chapter presents the theories of Harris[2], as well as Hooper and Terrell in some detail. Moreover, areas of difficulty within the frameworks of their theories will be discussed in efforts to establish the theoretical setting concerning the phenomenon of stress in the Spanish language.

Harris' Theory

In both his works (1969:120-122; 1975:56-57), Harris maintains that the principles governing stress in verbs are at least partially distinct from those that govern stress in

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[1]Many of Harris' formulations were based on ideas purported by James Foley (1967).

[2]Since Harris' work is by far the most complete treatment of Spanish stress to date and since transformational generative phonology is the most widely accepted approach to generative grammar, the most exhaustive examinations of this paper will concern them.

non-verbs. In Spanish Phonology, a non-exhaustive list of nouns and adjectives and verbs that are minimal pairs distinguished by the location of stress is given. Such words as próspero (adjective; "prosperous") and prospéro (verb; "I prosper"), partícipe (noun; "participant") and participé (verb; "he participates;" subjunctive) indicate that the stress rules for verbs differ from those for non-verbs. Harris (1975) maintains this distinction and surmises that stress is obviously assigned differently to representations that are identical in all relevant respects to surface representations.

Stress in Non-Verb Forms

The rule for the assignment of stress in non-verb forms was postulated by Harris (1969:121) as being "just the LSR." Here, (1) quotes Harris' rule:

(1) $V \longrightarrow$ [+stress] / ____$(C_0 (VC_0^1 (L)V)C_0 \#]NA$

In this formulation the symbol L represents a liquid, the presence of which does not permit a single preceeding consonant to function as a strong syllable. Rule (1) may be viewed as an abbreviation of three rules, each of which is illustrated in (2).

(2)

a. $\underline{\quad}C_0VC_0^1(L)VC_0]$

    Antepenultimate

íntegro	"integral"	
múltiple	"multiple"	(with L)
último	"last"	
lástima	"shame"	
júpiter	"jupiter"	
espéciman	"specimen"	(without L)
cómputo	"computer"	

b. $\underline{\quad}C_0VC_0]$

    Penultimate

cása	"house"
cubéza	"head"
moréno	"brown"
álbum	"album"
fácil	"easy"
carácter	"character"
estudiánte	"student"

c. $\underline{\quad}C_0]$

    Ultimate

rubí	"ruby"
barríl	"barrel"
matadór	"matador"
virtúd	"virtue"
café	"coffee"
menú	"menu"
mamá	"mama"
dominó	"domino"

Harris' 1975 rule for stressing non-verbs is reflected in (3).

(3)

$$V \longrightarrow [+stress] / \begin{cases} \underline{\quad}C_0VC_0VC_0\#]\alpha & \text{(a)} \\ \underline{\quad}C_0VC_0\#]\alpha & \text{(b)} \\ \underline{\quad}C_0\#]\alpha & \text{(c)} \end{cases}$$

Where cases (a), (b), and (c) are disjunctively ordered; the symbol α = non-verb.

Harris then lists both penultimately and antepenultimately stressed words that do not violate case (a) of (3). He lists near minimal pairs such as epístola, "epistle" and pistóla, "pistol" and one absolute minimal pair sábana, "sheet," and sabána, "savannah, treeless plain" (58). He postulates a special mark that must be supplied in the lexical representations of the words in question that determines the occurrence of penultimate or antepenultimate stress. Harris explains his "special mark" in the following: ". . . every vowel that appears unstressed in the penultimate syllable of the phonetic representation of any form is assigned in the lexicon the abstract diacritic feature [X]" (59). As an example, he postulates teléfono, "telephone," as /tel e fő no/ and telefónico, "telephonic," as /telef ő nǐ ko/, yielding the divergent stresses in [teléfono] and [telefónico]. The feature [X] does not absolutely rule out stress on the syllable in question: it only prohibits the assignment of stress when the marked vowel is in a penultimate syllable, instead per-mitting the retraction of stress to the syllable before it--the antepenultimate syllable.

What Harris prescribes, then, is a grammar in which penultimate stress is the "unmarked" case and antepenultimate stress is "marked" (1975: 60). Rule (1.a) must now be revised as in (4):

(4) V --> [+stress] / ___$C_o V C_o$ [X] C_o #]$^\alpha$

In 1975, Harris takes issue with critics--specifically Saciuk (1974)--who label (1) as the LSR:

It has been stated a number of times that it is claimed in SpPh [Spanish Phonology] that stress is assigned to non-verb forms by the so-called Latin Stress Rule. However, the position actually taken in SpPh (see for example, 30-31, 118-120) was that something like the Latin Stress Rule has just enough right with it to be taken as a first hypothesis and just enough wrong with it to preclude uncritical acceptance. Rule (4) [reflected by rules (3-4) of the present paper], like its counterpart in SpPh, bears a striking similarity to the Latin Stress Rule, but in point of technical fact it would be incoherent to say that (4) 'is' the Latin Stress Rule (or more accurately, one of its cases) since (4) makes reference to the arbitrary, nonphonological diacritic feature [X] while the Latin Stress Rule makes reference to the phonological property of long versus short, vowels, a property that is of no relevance whatsoever in Spanish (63).

As for polysyllabic words with stress on the final syllable, Harris notes two important categories of examples: words ending with a single voiced dental [+cons] segment (e.g., papél and those ending with a single stressed vowel (e.g., papá). Words like papél are not listed as exceptional; Harris instead postulates a terminal feature /e/ in the following derivation taken from Harris (1975 61):

(5)   singular   plural

Lexical Repres.	papel + e	papel + e + s
Stress	é	é
Apocope	∅	
Phonetic Repres.	papél	papéles

According to Harris, the crucial point "is the final /+e/ of singular forms and the Apocope rule that deletes this segment in singular forms. Both would still be motivated even if stress placement in Spanish were radically different from what it is . . ."(61).

The only major deviation between Harris' analysis of non-verb stress in (1975) and that of (1969) is in the distinction of the features [X] and [D]. In the earlier work, Harris had held out the prospect that the same feature which triggers diphthongization [D] could be the feature that determines stress assignment [X]. In view of such pairs as Venezuéla/venezoláno, "Venezuela/Venezuelan:" consuélo/ consolár, "consolation/to console:" and sosiégo/ sosegáda, "peacefulness/peaceful," Harris has discounted the possibility of the two features being the same. The penultimate vowels of the first of each pair of examples must be marked [D] to account for the diphthongization: however, they cannot be marked [X] since the stress is not on the penultimate syllable. Harris, thereby concludes that the [D] ≠ [X] as he had earlier thought possible.

Stress in Verb Forms

Spanish verb forms, like their non-verb counterparts can only be stressed on one of the last three syllables.[3] Harris' (1969) rule (24) included a case (b) which was intended as his generalization of the assignment of verb stress:

(6) V $\longrightarrow$ [+stress] / ___ (([-perf])C_oV)C_o#] Verb

---

[3]The addition of the enclitic pronouns does not present a counter-example, as has been noted.

Again, the outermost set of parenthesis is intended to render the rule applicable to the assignment of stress in monosyllabic forms (e.g., _va_, "he goes"). Rule (6), in effect, assigns "verb stress in fixed positions, without regard for the 'strong' and 'weak' syllables in terms of which stress is assigned by the LSR" (121).

Harris (1975) argues that the correct analysis of Spanish verb stress is dependent upon the morphological "theme vowel" of verbs. In his analysis, given in (7) in this paper, Harris posits the verbal stem as consisting of [root + theme vowel] to which both finite and non-finite endings are added:

(7)

$$\left[\text{[Root]} + \text{[Theme Vowel]} \right]_{\text{Stem}} \left\{ \begin{array}{l} + \text{[Ending]} \quad \text{Verb} \\[2ex] + \left[\begin{array}{l} \text{Tense-} \\ \text{Mood-} \\ \text{Aspect} \end{array}\right] + \left[\begin{array}{l} \text{Person-} \\ \text{Number} \end{array}\right] \end{array} \right._{\text{Verb}} \begin{array}{l} \text{(a)} \\[3ex] \text{(b)} \end{array}$$

(The internal brackets in the above rule are used to identify morphological constituents, not to imply the cyclical application of stress.)

Case (a) of (7) applies to the non-finite forms of verbs--the infinitive, past participle, and gerund; case (b) applies to those forms marked for person, number, and tense.

A root like _habl-_, "speak," has the theme vowel _a_ to which verbal inflections are added. Harris (1975:64) makes the following assumptions:

(a) Roots are listed in the Lexicon,
     where the appropriate semantic,
     syntactic, morphological (e.g.,

conjugational class affiliation),
and phonological information is
given.

(b)   Theme vowels are supplied by mor-
phological rule: /a/, /e/, /i/
for first, second, and third con-
jugation roots, respectively.

(c)   Tense-Mood-Aspect and Person-Num-
ber morphemes consist of bundles
of syntactic features assigned by
syntactic rules.

(d)   The arrangements of morphemes
represented schematically in (9)
[(6) above] are governed by
"word-formation rules" of the
morphological component of the
grammar, and morpho-syntactic
representations of the sort
mentioned in (c) are converted
into phonological (phonemic)
representations by other rules
of the morphological component.

Verb stress is analyzed, then, as being penultimate in most

cases (or ultimate in the case of stressed monosyllables),

and (3.b) is slightly revised to cover penultimate/ultimate

verbal stress:

(8)   V --> [+stress] / ___C_o(-s)#] β

The addition of the symbol β extends the rule's coverage to

all categories covered by α, as well as verb forms.

Antepenultimately stressed verb forms, such as in (9),

are said to be stressed according to the <u>theme vowel</u>:

(9)   a.   imperfect: <u>habl</u> + á + <u>ba</u> + <u>mos</u>
      b.   past subjunctive: <u>habl</u> + á + <u>ra</u> + <u>mos</u>
      c.   preterite: <u>habl</u> + á + <u>steis</u>

Harris' rule (15), (1975: 15), accounts for stress in such

forms; his rule is given in (10):

(10)   V --→ [+stress] / $\left[\overline{\text{ThV}}\right]_{St}$ $C_0VC_0VC_0\#]_{Verb}$

Rule (10) is disjunctively applied before rule (8).

Verb forms which do not appear to abide by rules (10) and (8) in their surface representations are posited by Harris as having underlying structures that account for the surface stress assignment. Infinitives, for one group, are stressed on the last syllable in their surface forms. Harris postulates an underlying, terminal /e/ which is present until after stress assignment, as per rule (8), and is then deleted by rules of apocope, as in the derivation of papél above.

Another group of surface exceptions includes the regular preterite first and third person singular forms, such as hablé, "I spoke;" habló, "he spoke;" viví, "I lived;" and vivió, "he lived." Harris concludes that the person/number surface phenomena e in hablé and i in viví are actually underlain by a + i and i + i, respectively; the a and the first i of the series represent the theme vowels, the final i's the person/number markers. These series of vowels then merge to yield the surface phenomena in hablé and viví. The third person plural forms are similarly derived from the theme vowels, plus the third person plural marker u; a + u = o as in habló, and i + u = io as in vivió. Irregular preterites such as pudo, "he was able to," are underlain simply by the verb root rather than [root + theme vowel].

Harris (1975) does not give a derivation for the second conjugation. Looking back to <u>Spanish Phonology</u> (84-85), however, one sees that he postulates the theme vowel for <u>comér</u>, for example, as <u>e</u>; and, then, the <u>e</u> is raised to <u>i</u> by such a rule as (11):

(11) $[\underline{V}_{-low}]$ ---> [+high] / ____ [+past]

The <u>i</u> gained by (11) is then combined with the preterite markers in the same manner as in the third conjugation. The final class of verb exceptions to the antepenultimate-penultimate stress rules, the future forms, also appears to Harris to be the result of some distinctive underlying composition. Examples from this category carry ultimate stress in polysyllabic forms such as <u>hablaré</u>, "I will speak;" <u>viviré</u>, "I will live;" <u>hablará</u>, "he will speak;" and <u>vivirá</u>, "he will live." To Harris, however, the verb "stems" in these cases are actually the infinitives, and the "endings" are the idiosyncratic forms of the auxiliary verb <u>haber</u>, making such surface representations as <u>hablaré</u> composites as in (12):

(12) [[hablar]   [he]]

The final stress, thus, is fixed by the rule which assigns stress to monosyllabic verb forms, rule (8); and, since the brackets in (12) impose cyclical stress assignment, the rightmost constituent of the brackets is the stressed component in the surface future form.

Harris' conclusion is that stress in all verb forms is determined by rules (10) and (8), disjunctively. His rules can now be reordered and summarized in (13) and (14):

(13)   V ---> + stress   / $\left[\overline{\text{ThV}}\right]_{\text{ST}}$ $VC_oVC_o\#]_{\text{Verb}}$

(14)   V ---> + stress   / $\left\{\begin{array}{ll} [\overline{}_{\text{V}}] & C_oVC_oVC_o\#]\text{◄} \\ [\overline{}_{\text{V}}] & C_oVC_o\#]\beta \end{array}\right\}$ (a)
                                                                                            (b)

It is important to note that case (14.a) applies only to non-

verb forms (∝), whereas (14.b) applies to both verb forms

(∝) and non-verb forms (β). Rule (14) is specifically

different from Harris (1969) in that it will correctly assign

stress to the preterite of the vosotros (second person plural,

familiar) form. Since Spanish Phonology was concerned with

Mexico City Spanish, a dialect that does not include vosotros,

the imperfection in the earlier rule (rule (6) of this paper)

was not noticed.

Problems in the Harris Theories

Harris' theories in both Spanish Phonology and the 1975

article effectively describe the assignment of stress.

However, in many ways the feature [X] which Harris used to

trigger the aberrant occurrences of stress is not any more

predictive than the textbook rule quoted at the opening of

Chapter I. It seems plausible that some feature is being

disguised by the artificial symbol [X], some feature that

could reveal data relating exceptional forms to more general

statements that can be made about Spanish.

An example of data that Harris apparently obscures with

his [X] is the extension of the feature to "every vowel that

appears unstressed in the penultimate syllable of the phonetic

representation of any form" (1975:59). Then, he gives examples of the operation of [X], citing the words teléfono, "telephone; telefónico, "telephonic;" and telefonísta, "telephone operator." It does not seem important to Harris at all that these words have undergone affixation and that their stress and his [X] might somehow be related to processes or circumstances of affixation.

Moreover, Harris has assumed too quickly that verbs and non-verbs are assigned stress by different rules. He had not considered that the set of examples that he gives as conclusive evidence of the operation of separate rules is a rather special class of words. On the surface level, certainly, the placement of stress is the distinction separating such minimal pairs as ánimo and anímo. However, the verbs of this set of examples are verbs that have been back-formed by the addition of the first conjugation ending -ar to the stem of the non-verb. Conceivably, in the process of creating a verb from a non-verb, different sorts of affix boundaries might be introduced into the underlying representation of the word. That such a boundary marker might play some role in the assignment of stress Harris does not consider.

The necessity of formulating a rule such as (11) to raise the theme vowel of the verbs of the second conjugation in order to achieve the correct combination of vowels (i + u; i + i) to arrive at ió and í for the surface representations of the preterite endings is questionable.

The rule seems ad hoc since it has no other purpose than to account for the preterite endings of the second conjugation.[4]

The Theory of Hooper and Terrell

Hooper and Terrell (1976) contend that their theories are more in line with current movement toward "a more constrained" grammar (64). Before presenting their formulations, their explanation of natural generative phonology, as opposed to transformational generative phonology, is reviewed.

> NGP differs from TGP in that NGP has stronger constraints on abstractness. In particular, the rules of the grammar are not extrinsically ordered, rather a rule applies each and every time its structural description is met. . . . A further constraint is that underlying phonological contrasts are limited to direct manifestations of surface contrasts. . . . The result is a grammar in which all the rules express true generalizations about surface forms. Thus the stress rules we present differ from the stress rules of TGP in that our rules all describe the stress just as it is on the surface (65).

Hooper and Terrell, like Harris, contend that verbs are assigned stress by different rules from non-verbs; they cite the same list (67) of minimal pairs as Harris: ánimo, anímo; fábrica, fabríca, etc.

Stress in Non-Verb Forms

Hooper and Terrell begin analysis of stress in non-verb forms as being on the last vowel of the stem:

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[4]Brame and Bordelois (1973: 109-168) criticize this aspect of Harris' formulations as well as his adoption of the u as the third person singular marker and his subsequent rule of lowering (160).

(15)   v --→ [+ stress] / ___ C $_0$[^V_X] C$_o$] Stem

The diacritic, appearing on the last syllable of the stem,
which would otherwise be stressed, reverts the stress to the
preceeding syllable.[5] The diacritic [X] is also used to
account for the penultimately stressed words which end in
consonants (álbum, "album; azúcar, "sugar;" fácil, "easy;"
lápiz, "pencil"). This class of words is postulated according
to the following examples:

(16)   facil]
       X   St   Adjective

       album]
       X   St   Noun

Stress, then, is assigned according to (15).

For the words ending in stressed vowels, e.g., rubí,
"ruby;" menú, "menu;" hindú, "Hindu," the authors simply
postulate the entire surface form of the word as the stem,
making (15) still applicable as the mode of stress assignment:

(17)   menu]
              St   Noun

       rubi] St   Noun

Hooper and Terrell cite the variant assignment of stress
on the surface level as reflecting a "morphological difference
between words such as moréno, cabéza, bikíni, tríbu on the
one hand, and dominó, mamá, colibrí, menú on the other" (74).
This morphological difference lies in the way Hooper and

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[5]The authors acknowledge their compliance with the
Harris (1975) theory on this point.

Terrell diagnose the word stems. The "moreno" series is postulated as consisting of [stem + class vowel], and the "domino" series as only [stem]. "In other words, the end of the stem is identified by where the stress falls" (76).

Hence, stress is regularly assigned to the stem-final syllable, according to the Hooper and Terrell analysis. The class of exceptions, stress on the penultimate syllable of the stem, is marked with a diacritic.

Stress in Verb Forms

The stress rule that Hooper and Terrell give for verbs is included in (18):

$$
(18) \quad V \longrightarrow +stress \; / \left\{
\begin{array}{l}
\underline{\quad} C_o] \; \text{stem} \quad / \quad [+present] \quad (a) \\
] \; \text{stem} \quad \underline{\quad} / \quad [+past] \\
\qquad\qquad\qquad\qquad [-finite] \quad (b) \\
] \; \text{stem} \; V \; {}_oC \underline{\quad} / \; [+subsequent] \; (c) \\
\underline{\quad} C_o \; (\; {}_o{[V] \brack [X]}\;) \; C_o] \; \text{stem} (d)
\end{array}
\right.
$$

exceptions: $\begin{bmatrix} +present \\ -singular \\ -3rd\ person \end{bmatrix}$ use (b)

This rule summarizes the assumptions made about non-verbs and explicitly claims the following about the rules of stress assignment for verb forms: "(a) stress has a morphological function, i.e., is directly related to tense and mood, (b) the position of stress is determined in relation to the stem, and (c) stress is regular in all forms except the first and second plural of the present tense" (81).

Problems with the Hooper-Terrell Theory

Indeed Hooper and Terrell do adhere to their pledge that "our rules all describe the stress just as it is on the surface" (65). However, the rules given in (15) and (18) are not much help in predicting stress. The stem can never be readily identified without knowledge of where stress occurs; conversely, the occurrence of stress cannot be predicted without knowledge of where the stem ends. Hooper and Terrell ascribe the definition of the "stem" to morphological differences in the words themselves, with moréno being moren + o and dominó being domino + ∅. Yet the reader is given no other morphological information that would allow him to recognize such differences without prior knowledge of the location of stress. Their argument, therefore, seems difficult to ascertain. This unsatisfactory state of affairs is due, in my opinion, to the lack of completeness and explicitness with which they deal with the observations, for they do not make clear precisely how this "morphological information" is to be presented in the lexicon nor how it effects the application of the rules they formulate. In short, the very skimpiness of their presentation makes a careful evaluation next to impossible.

In their analysis of the stress shifts brought on by pluralization, Hooper and Terrell assume that their internal stem-boundary rule has been ignored as in (19).

(19)

Singular				Plural			

regim]   en]   regim]   en]   e]   s]
   X   ] St   X]   X]   CV*   Pl

*Class Vowel

"In stressing the singular, only the stem is considered. For

the plural, where a vowel has been added, the stress applies

as usual, ignoring the internal stem boundary" (77).

According to the analysis of Hooper and Terrell, stressed

affixes must undoubtably be lexically marked, although they

never really make a statement to that effect. "Diminutives

may be formed by adding -(c)íto to a noun or an adjective

(and even an adverb) form. . . . Notice that the suffixation

is not obviously dependent upon stress, since stress is

assigned to the suffix, not the base stem" (74). One must

assume from the quotation that they meant for the entry of

the diminutive suffix to be marked for stress. But, once

again, stress that must be listed lexically is descriptive,

not predictive, and begs further refinement.

Certainly within the self-imposed "constraints" of NGP,

a predictive grammar is not completely possible. Their

restriction to the surface representations of the language

will not permit them to capture the over-all regularities of

Spanish.

The strategy employed by Hooper and Terrell was slightly

parodied by Harris (1975: 77): "Stress is assigned . . . on

the X, where X is defined by unstated and apparently uncon-

strained morphological principles to be whatever element

stress happens to fall on." Harris goes on to state,". . . it is not clear to me what is gained if everything that is excluded. . . from the domain of phonology is allowed to reappear in nebulous morphological guise."

Both the Harris theory and the theory proposed by Hooper and Terrell can be made to work in describing Spanish stress assignment. Both theories, however, leave a sizeable residue of exceptions. While exceptions are to be expected in any grammar, seemingly aberrant forms should be screened very carefully for evidence that might relate them to the more general properties of the language. To describe a grammar is, in effect, to partition the data provided by the surface forms of the language and to make generalizations according to the relatedness of the various parts. It is dangerous, however, to forget that the partitioning is artificial and, even at best, arbitrary. What has been regarded as an exception may actually contain the features pertinent to the most general assumptions that can be made about the language. I believe that Hooper and Terrell, as well as Harris, have partitioned the data of Spanish phonology in such a way as to omit such relevant observations.

CHAPTER III

AN ALTERNATIVE THEORY OF SPANISH STRESS ASSIGNMENT

In attempt to arrive at a viable theory of stress
assignment in Spanish--a theory that admits the least possible
number of exceptions--a review of the obvious data is in order.
First of all, stress may appear on any of the last three
syllables of a Spanish word; but under no circumstances does
stress appear more than three syllables from the end of a
word that contains no occurrences of #.[1] Tables I and II
provide examples of the various occurrences of stress assignment
in non-verb and verb forms, respectively.

The frequency of appearance for the various stress
assignments in Table II are, from least systematic to most
systematic, as follows:

(a)   Final stress on a word ending in a vowel.
(b)   Antepenultimate stress.
(c)   Penultimate stress on a word ending in a
      consonant.
(d)   Final stress on a word ending in a [con-
      sonant other than] /s/.
(e)   Penultimate stress on a word ending in
      a vowel or /s/.[2]

---

[1]That is to say, only in forms including pronouns such
as dándonoslos, "giving them to us," ##dando#nos#los##.

[2]These data are taken from Hooper and Terrell (67).
The original of case (d) read, surprisingly, "Final stress
on a word ending in a vowel or /s/." Since as Hooper and
Terrell state (d) it repeats the context of (a) as well as
fails to account for stress in words ending with consonants
other than/s/, it is obviously an error.

Table I   EXAMPLES OF STRESS IN VERB FORMS

    A. Final Stress

Future Forms		Preterite Forms	
tomaré	"I will take"	tomé	"I took"
comeré	"I will eat"	comí	"I ate"
viviré	"I will live"	viví	"I lived"

    B. Penultimate Stress

Indicative Forms		Subjunctive Forms	
tómo	"I take"	tóme	"I might take"
cómo	"I eat"	cóma	"I might eat"
vívo	"I live"	víva	"I might live"

Imperative Forms			Conditional	
¡tóma!	"take!"	(familiar)	tomaría	"I would take"
¡cómas!	"eat!"	(negative)	comería	"I would eat"
¡víva(n)!	"live!"	(formal: plural)	viviría	"I would live"

Imperfect		Imperfect Subjunctive	
tomába	"I used to take"	tomára	"(if) I took"
comía	"I used to eat"	comiéra	"(if) I ate"
vivía	"I used to live"	viviéra	"(if) I lived"

    C. Antepenultimate Stress

Conditional		Preterite	
tomaríamos	"we would take"	tomásteis	"you took"
comeríais	"you would eat" (familiar;plural)		(familiar;plural)

Imperfect Indicative
tomábais	"you used to take" (familiar;plural)
tomábamos	"we used to take"
comíais	"you used to eat" (familiar;plural)

Imperfect Subjunctive

tomásemos } tomáremos }	"(if) we took"
comiésemos } vivéramos }	"(if) we lived"
viviéseis	"(if) you lived"
comiérais	"(if) you ate"

Table II   EXAMPLES OF STRESS IN NON-VERB FORMS[3]

A.   Final Stress

Ending in a Consonant

barríl	"barrel"
canción	"song"
compás	"compas"
rapáz	"thievish"
matadór	"matador"
virtúd	"virtue"

Ending in a Vowel

rubí	"ruby"
frenesí	"frenzy"
menú	"menu"
café	"coffee, coffee house"
mamá	"mama"
dominó	"domino"

B.   Penultimate Stress

álbum	"album"
azúcar	"sugar"
fácil	"easy"
carácter	"character"
lápiz	"pencil"
césped	"lawn"
tésis	"thesis"

zapatéro	"cobbler"
abuéla	"grandmother"
moréno	"brown"
cabéza	"head"
estudiante	"student"
tríbu	"tribe"
bikíni	"bikini"

C.   Antepenultimate Stress

régimen	"regime"
isósceles	"isosceles"
espécimen	"specimen"
júpiter	"jupiter"

zoológico	"zoological"
lástima	"shame"
último	"last"
triángulo	"triangle"
tímido	"timid"
téchnica	"technical"

---

[3]The examples in this Table are those used by Hooper and Terrell (66-67).

Should one, then, conclude that cases (d) and (e) are the "rules" of stress assignment while cases (a)-(c) are the exceptions? Hooper and Terrell (1976: 67) draw this conclusion: "of words in the text ending in vowels or /s/, 95% has penultimate stress; of the words that ended in consonants other than /s/, 95% had final stress." They do not say, however, what the ratio of words falling in (d)-(e) categories was to words falling in the (a)-(c) categories. Although the (d)-(e) words most likely outnumber the (a)-(c) words, such partitioning omits what seems to be a sizeable number of "predictable" irregularities. If they are indeed predictable, then they are not irregularities at all. The problem now becomes what the words whose stress assignment is described by (a)-(c) have in common with one another and perhaps even with the words from cases (d) and (e). If a common feature-- or features--can be found, then even the view of so-called "rule-governed" cases may have to be altered accordingly. I believe that there is such a feature: [tense]. Before rules referring to the feature [tense] can be formulated, some attention must be given to the various discussions of that feature in the literature.

The Feature [Tense]

Harris (1969:116) holds out the prospect of a feature [<D] (diphthongization) which corresponds to [-∝ tense], with [+D] vowels being historically "short" or "lax" and [-D] vowels historically "long" or "tense". "For example, the

vowels that diphthongize when stressed are reflexes of Latin lax vowels, and it is the reflex of lax e that is deleted word-finally after a single dental consonant. However, I have not yet taken the step of identifying [+D] as [-tense] and [-D] as [+tense] in the synchronic grammar. . . ." Harris (118) goes on to say that

> there is also no correlation between
> the specification with respect to the
> feature [D] of vowels in systematic
> phonemic representations and tenseness
> and laxness of vowels in phonetic repre-
> sentations. Consider, for example, poder,
> "to be able," puedo, "I can," and podemos,
> "we can." As has already been argued at
> many points, the systematic phonemic repre-
> sentations of these forms must be, ignoring
> irrelevant details, /pOder/, /pOdo/, and
> /pOdemos/, respectively.⁴ The phonetic
> forms are, however, [poδEr], [pweδo], and
> [poδémos], where /O/ appears as [ó], [wé],
> and /e/ appears as [E], [é]. Therefore,
> the identification of [D]--in terms of which
> distinctions are made that are necessary to
> capture generalizations about the language--
> is wholly arbitrary unless general theoretical
> constraints can be found to justify a decision.⁵

---

⁴Harris uses the symbols 0 and E to represent the vowels subject to diphthongization. The majuscule will be used similarly throughout this paper.

⁵Harris gives the phonetic representation of /pOder/ as [poδEr]. He uses this majuscule symbol to indicate the feature [+D]; phonetically, the last syllable of poder is certainly [-D]. It has not been "clearly demonstrated" how he has arrived at [E] that is also [-D], or why the final vowel of the infinitive marker must be postulated as /E/ in the first place.

In the formulation of rules throughout <u>Spanish</u> <u>Phonology</u>,

Harris, however, makes use of the distinction [-⍺tense].

The LSR, revised as rule (24) of Chapter 4 (121), includes the

specification V̆, i.e., a [-tense] vowel.[6] Harris remarks that

in the LSR (118) "the most cogent theroetical 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."

The feature [±tense] is obviously relevant to [⍵D] in

Harris' formulation (1969:161) of

(1) $\left\{ \begin{array}{c} e \\ o \end{array} \right\} \longrightarrow \left\{ \begin{array}{c} ye \\ we \end{array} \right\} / \left[\begin{array}{c} +stress \\ -tense \\ +S \end{array} \right]^{6}$

+S = +Special

Harris, even though he does not clarifiy his position on [+D]

= [-⍺tense] in <u>Spanish</u> <u>Phonology</u>, formulates six rules in

rules in Chapter 4 that are related to the feature [-⍺tense].

(C.f., Table III)

The rules in Table III are instrumental in predicting

the surface forms of verbs, according to Harris' derivations

---

[6]This distinction is replaced by the non-phonological
diacritic <u>X</u> in Harris (1975).

Table III HARRIS' RULES INCLUDING THE FEATURE TENSE[7]

A. $\begin{bmatrix} V \\ -low \end{bmatrix}$ ---- $\begin{bmatrix} +high \\ +tense \end{bmatrix}$ / $\left\{ \begin{array}{l} \underline{\quad\quad}[+past] \\ [\overline{3\ conj}]\ C_oV]\ verb \end{array} \right\}$
(i)
(ii)

B. V ---→ Ø / $+\begin{bmatrix} \underline{\quad\quad} \\ <+irreg> \end{bmatrix} \left\{ \begin{array}{l} +\begin{bmatrix} V \\ +tense \end{bmatrix} \\ <r\#[+fut] \end{array} \right.$
(i)
(ii)

C. $\begin{bmatrix} e \\ -tense \end{bmatrix}$ ---→ Ø / V $\begin{bmatrix} +cor \\ +ant \end{bmatrix} \begin{array}{l} 1 \\ o \end{array}$ $\underline{\quad\quad}$ #

D. $\begin{bmatrix} V \\ +stress \\ +S \end{bmatrix}$ ---→ $\begin{bmatrix} -high \\ -tense \end{bmatrix}$ / $\underline{\quad}\left\{ \begin{array}{l} rV \\ \begin{bmatrix} +cons \\ -obst \end{bmatrix} \begin{bmatrix} -voc \\ +ant \end{bmatrix} \end{array} \right\}$
(i)
(ii)

E. V ---→ [-high] / $\left\{ \begin{array}{l} \begin{bmatrix} \overline{\quad\quad} \\ -tense \\ +S \end{bmatrix} \\ \begin{bmatrix} \overline{\quad\quad} \\ -stress \end{bmatrix} C_o \left\{ \begin{array}{l} \# \\ i \end{array} \right\} \end{array} \right\}$
(i)

(ii)
(iii)

---

[7]These rules are from Harris (1969: 130-131) and represent a summation of his theories on the Spanish verb system.

in his Chapter 4. His use of the feature is criticized by
Brame and Bordelois: "When one considers to what use the
feature of tenseness is put in the rules. . ., it becomes
apparent that the feature is, at least in two cases, no more
that an ad hoc coding device designed to salvage other following
rules in the system" (162). To illustrate their point, Brame
and Bordelois cite case (e) of Table III:

> In Harris' framework, we expect to find
> some third conjugation verbs with stem
> vowels in u or i which might further
> more be expected to undergo [case (e.i)
> of Table III] . . . . For example, one
> might expect one such example as s[u]bir
> 'to ascend,' s[u]bo 'I ascend' to become
> *s[o]bir, *s[o]bo, etc. That such is not
> the case would normally be taken as evidence
> refuting such a rule . . ., but Harris
> salvages the rule by incorporating the
> feature [+tense] in the structural change
> of [Table III, (a)].

That Harris uses the feature [tense] to write off counter-
examples of the changes accounted for by his verb rules leads
Brame and Bordelois to the conclusion that "the feature of
tenseness in this instance is no more than a device utilized
to salvage an analysis that is suspect from the beginning"
(162). It is important to note that the critics here are
dismissing the tense-lax distinction of Harris, not the
possibility of a tense-lax distinction itself. They admit
that the feature could be "natural in some universal sense"
(162), but insist that the "only really convincing argument
at this stage in our knowledge of phonological systems must
emanate from the situation specific to Spanish" (161).

Mario Saltarelli (1970: 94) contends that it is "tempting to formulate a stress rule based on vowel length (or tenseness)" since such a formulation would produce in Spanish a stress pattern situation similar to that of Classical Latin. Saltarelli assumes that such a formulation is captured by the following: "stress the rightmost long vowel."

However, as noted in Chapter II above, Harris (1975: 62) rejects his earlier suggestion, now claiming explicity that the feature needed for diphthongization is not the same as the feature needed for stress assignment, as discussed in Chapter II (13) of this paper. The later work, however, makes no mention of the feature [tense] as employed in the verb derivations of Chapter 4 in Spanish Phonology, nor does Harris mention whether the conclusion [D] $\neq$ [X] negates the possibility of a feature [tense] that is not equal to [$\propto$D].

From the literature amassed concerning the feature [tense], one can readily see that there is too much evidence that such a feature exists in Spanish to dismiss it entirely, yet not enough evidence to delineate its properties in a manner that will relate [tense] to the rules of the synchronic grammar. In the following section of this chapter, an attempt will be made to clarify the nature of [tense].

The Stress Assignment Rule

If one can assume momentarily that enough evidence exists to acknowledge an underlying system of tense and lax vowels in Spanish, at this time distinguished according to Harris'

earlier approximation [-⍺tense] = [⍺D] (1969:116), one might

conclude along with Saltarelli (94) that such a vowel system

plays some part in stress assignment. The first formulation

of the stress assignment rule would then be Saltarelli's

(2) Stress the rightmost [+tense] vowel.

Such a rule as (2) looks very important to the assignment of

stress in non-verbs with finally stressed vowels. Rule (2)

also could account for the occurrences of finally-stressed

endings in the preterite and future verb forms: amé, "I loved;"

comió, "he ate;" escribí, "I wrote;" amaré, "I will love;"

comerá, "he will eat;" escribiré, "I will write." The under-

lying forms of both the non-verbs and verbs with finally-

stressed vowels in their phonetic forms could have their

final vowels postulated as [+tense] and have stress assigned

according to (2). There are non-verbs as well as verb forms

that end with unstressed vowels:

(3)

	Non-Verbs		Verbs
pelotári	"jai lai player"	tómo	"I take"
báse	"base"	cóma	"He might eat"
bikíni	"bikini"	víno	"He came"
cúrsi	"in bad taste"	díje	"I said"
cása	"house"	súpo	"He found out"
impétu	"impetus"	víve!	"Live! "
móno	"monkey"	hablára	"(if) I talked"
espíritu	"spirit"		

The words in (3) obviously contain vowels that in their under-

lying forms are [-tense] at the derivational level at which

stress is assigned.

Rule (2), alone, however, is not expansive enough to be very meaningful. The set of words in Spanish ending with a [+stress] vowel is relatively small. Rules are needed that account for internal stress, and there are plenty of words in Spanish with [+D] vowels that are [+stress]: fuérte, "strong;" Venezuéla, "Venezuela;" majuélo, "white hawthorne;" sosiégo, "calmness, quiet," etc. Closer examination of the words with [+D +stress] syllables reveals, however, that in every case such a syllable is penultimate. This observation has two meaningful implications: first, there must be some very powerful motivation for penultimate stress in Spanish; and second, that for the antepenultimate syllable to be stressed it must be [-D]. Since we have accepted--albeit temporarily--Harris' formulation of [αD] = [$-\alpha$tense], we can conclude that the antepenultimate syllable must be [+tense] in order to be [+stress]. These observations would force the replacement of (2) by (4):

(4)

(a) Stress the last vowel in a word if
    it is [+tense].

(b) Stress the antepenultimate vowel in
    a word if it is [+tense].

(c) Stress the penultimate vowel of a word.

(d) Stress the vowel of a monosyllable.

Let us assume temporarily, for the sake of argument, that this formulation (4) is the correct rule for stress assignment in Spanish and test its efficacy in accounting for the observations. Since its very complexity makes it suspect vis à vis

the more elegant formulations of Harris and Saltarelli,
evidence to disconfirm it should be easily found if it is
indeed false.

Stress in Non-Verbs

This section tests rule (4) as the principle of stress
assignment in Spanish non-verbs. Specifically, attention is
restricted to representative forms listed in Table II. Con-
sider first the partial derivations in (5) of three forms
which represent Spanish non-verbs with final stress ending
in either vowel or consonant--that is, case (a) of (4):

(5) A. barríl, "barrel"[8]

       baR͞il   Lexical Representation

       baríl   Stress Assignment (4.a)

   B. canción, "song"

       kan + si͞on   Lexical Representation

       kansión   Stress Assignment (4.a)

   C. mamá, "mama"

       mam͞a   Lexical Representation

       mamá   Stress Assignment (4.a)

---

[8]Only those details pertinent to the discussion at hand
will be considered in the derivations outlined in this paper.
The feature [+tense] will be noted with a macron (‾) in the
lexical representations, as in /baR͞il/.

Penultimate stress (case (c) of (4)), by far the most prevelant
assignment in any class of Spanish words, is achieved when
there are no [+tense] vowels in either the antepenultimate or
final syllables:

(6) A. lápiz, "pencil"

         lāpiz   Lexical Representation

         lápiz   Stress Assignment (4.c)

     B. abuéla, "grandmother"

         abOl + a   Lexical Representation

         abOla   Stress Assignment (4.c)

         abwéla   Diphthongization

The vowel of the penultimate syllable may be either [±tense],
but that feature is not the determining factor in stress
assignment. It is the penultimate position, rather, that
determines the stress placement. Consider (7), for example:

(7) barríles, "barrels"

     baRĪl + es   Lexical Representation

     baRíles   Stress Assignment (4.c)

Reference to (5.A) will show that the stress in the singular
barríl was assigned by (4.a), whereas the stress in the
plural is assigned by (4.c). Such a distinction does indeed
seem vacuous for a pair like barríl/barríles. However, a
familiar stress shift is explained according to (4.c):

(8) carácter, "character"

     karakter   Lexical Representation

     karácter   Stress Assignment (4.c)

caractéres, "characters"

karakter + es   Lexical Representation

karaktéres[9]   Stress Assignment (4.c)

The reader has probably noticed by now that I have not been adhering completely to Harris' designation of [αD] = [-αtense]. In fact, the feature [D] is relevant only to the segments /e, o, u/.[10] Other [-tense] vowels, /i, a, u/, most likely become [+tense] when they become [+stress]. The underlying vowel system of Spanish, then, would contain the segments /ā, ē, ī, ō, ū/./a, e, i, o, u/, and /O, E, U/, with the majuscule segments being those that are [+D]. More is said to support the postulation of the underlying vowels as soon as more examples are given of the stress rule's effectiveness in predicting the placement of stress in Spanish.

The penultimate syllable is stressed routinely, regardless of the features of the vowel. What, then is the surface distinction between a [+tense] vowel and a [-tense] vowel if it is not the feature [+D]? The answer to this question--aside from the assignment of stress--is indeed difficult to ascertain.

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[9]In the singular form, it was irrelevant that the /ā/ of lápiz (6.A), for example, is [+tense] since it is in penultimate position; however, /ā/ is indeed [+tense] because in the plural lápices there is no stress shfit as in (8) with stress assigned in the correct position by (4.b).

[10]The /u/ has been included here because of the alternation in jugár, "to play," juégo, "I play."

Since vowel reduction in Spanish is phonetic, not phonological,
vowels that are not stressed, whether [+tense] or [-tense],
appear identically in the surface representation.

One recalls Harris' (1969: 118) statement that the iden-
tification of the underlying nature of vowels "in terms of
which distinctions are made that are necessary to capture
generalizations about the language--is wholly arbitrary unless
general theoretical constraints can be found to justify a
decision." It has been shown that stress can be successfully
predicted by assuming the existence of underlying tense and
lax vowels. Not only the most regular occurrences of stress
are determined by the stress assignment rule in (4), but also
the notable occurrences of stress shifts, making (4) the most
comprehensive stress rule to date. The feature [tense], then,
seems a "distinction" that is "necessary to capture generali-
zations about the language." Further evidence supporting the
distinction of [tense] in stress assignment is given in the
remainder of this paper.

While I am convinced that [+D] ≠ [-tense], this conviction
must not be taken as a rejection of the existence of the feature
[D]. In fact, both [D] and [tense] are independently motivated
in Spanish, as the following evidence makes clear. The only
occurrences of [we] and [ye] from [+D] vowels are in penultimate
position. Some clarification about the surface-level occur-
rences of the diphthongs [we] and [ye], however, does need
to be made. First of all, there are numerous examples of [we]

that do not have /O, U/ as underlying forms. Bilingüe, "bilingual," is more than likely /biling^{W}e/, with stress assigned by (4.c). The rounded consonant /g^W/ yields the diphthong on the surface level, even though unstressed. Monosyllables, of course, must be stressed: /pOs/ ---[pwés], pués, "well." Also, there are forms which result from the cyclical application of stress: duénde, "fairy," and duendecíllo, "little fairy," [[dOnde] [cillo]] : the brackets here assign stress to the stem first (and, thereby, diphthongizing /O/), then to the ending. (All stress except the right-most is subsequently erased.) The same sort of process is responsible for destréza, "skill;" diéstro, "skillful;" and adiestrár, "to make skillful."

Harris (1969) convincingly solves the problem of unstressed diphthongs by assuming the cyclical application of the stress assignment rule to be in effect in the diéstro series as well as in viéjo, "old;" aviejár, "to make old;" vejéz, "old age" and muéble, "furniture;" amueblár, "to furnish;" mobláje, "a set of furniture." He explains (125-126) the forms as follows:

> The verbs. . .clearly have the same stem as the corresponding nouns and adjectives. Thus, the unstressed diphthongs of the verbs must be derived from systematic phonemic lax vowels. By making use of cyclical application of rules, in particular, cyclical stress assignment, we may derive the correct phonetic representations of the forms of adiestrar. . . .

Adiestrár is handled, then, as in (9):

(9)

$$\left[\text{v}^{\#}\text{a} \left[_\text{A}^{\#}\text{d}\underset{E}{\text{E}}\text{str}^{\#} \right] _\text{A} \text{a} + \text{mos}^{\#} \right] \text{v}$$
     First Cycle
     Stress Assignment (4.d)

$$\left[_\text{V}^{\#}\text{a} + \text{dEstr} + \underset{\text{yé}}{\underset{\text{yĕ}}{\text{a}}} + \text{mos}^{\#} \right] \text{v}$$
     Second Cycle
     Stress Assignment (4.c)
     Diphthongization
     Erase all stress except
        the rightmost

    adyestrámos   Phonetic Representation

The other forms with unstressed diphthongs mentioned may be handled in the same way.

It has been shown, then, how final stress is accounted for by the stress assignment rule in (4); also, penultimate stress is the result of [-tense] vowels in either the last syllable or the antepenultimate syllable. Now, attention will be given to antepenultimate stress and some interesting achievements of the stress assignment rule in this domain.

Antepenultimate stress (case (b) of (4)) is accounted for in the following derivation:

(10)   A.   régimen,   "regime"
           rēxīmen   Lexical Representation

           réximen   Stress Assignment (4.b)

      B.   regímenes,   "regimes"
           rēxīmen +es   Lexical Representation
           rexímenes   Stress Assignment

Also, (4) further accounts for the seemingly exceptional stress shifts that occur with pluralization of the same nature as carácter/caractéres. Other relevant examples--espécimen/

especímens, "specimen(s);" ínterin/intérines, "intern(s);"
and júnior/junióres, "junior(s)"--can be accounted for in a
similar manner. Especímenes and intérines are derived like
regímenes with two tense vowels in their underlying forms:
/espēcīmen/ and īntērin/. Junióres is somewhat different
and is given in (11):

   (11) A. Junior, "junior"
            xūnior   Lexical Representation

            xúnior   Stress Assignment (4.b)

        B. Juniores, "juniors"
            xūnior + es   Lexical Representation
            xuniór̄es   Stress Assignment (4.c)

Therefore, surface forms that look very different from the
average have yielded data important to the assignment of stress
in the majority of Spanish words.

   Álbum, azúcar, fácil, and lápiz are all listed by Hooper
and Terrell as being exceptional forms to their rule of stem-
final stress. Each of these forms is accounted for by (4.c).
Débil, "weak;" frágil, "fragile;" fácil, "easy;" and difícil,
"difficult," are regularly stressed by (4.c). Gentíl, "gentle,"
is also regularly stressed, but by (4.a). The same difference
in application of stress rules accounts for the difference in
the stress assignments in crímen, "crime;" exámen, "exam;"
desórden, "disorder;" imágen, "image;" and such words as
henequén, "hemp;" and desdén, "disdain." Hence, non-verb
stress---in all its occurrences---is effectively predicted
by the Stress Assignment Rule given in (4).

Stress in Verb Forms

So far, it has been shown primarily how the Stress
Assignment Rule works in non-verb forms. It was briefly
mentioned that (4.a) is well-motivated in accounting for
final stress in most verb preterite and future forms. In
Table IV, there is a complete paradigm, with the exception
of the imperfect forms, for a regular -ar conjugation. Each
form in Table IV is followed by a notation indicating the
operative portion of the Stress Assignment Rule and its
underlying representation.

Obviously, if one accepts Harris' postulation of the
future and conditional surface forms as being composites
consisting of the infinitive followed by a form of the auxiliary
verb haber, there will be a problem in assigning the stress.
The infinitive tomár must be underlain by /tom=ār/ in order
to achieve [tomár], but tomarémos cannot be underlain by
/tom = ār + emos/ or the surface representation would be
*tomáremos, according to (4.b) (likewise, /tom = ār +īa/ -->
* tomária). There are two possibilities for solutions:
first, one could postulate a laxing rule for tense vowels,
followed by a sequence of consonant followed by formative
boundary: second, one could postulate the future and conditional
forms as /tom = aremos/ --> [tomarémos] (4.c) and /tom = aríamos/
--> tomaríamos (4.b), using the same stem as all the other
forms in the verb paradigm. The second alternative is especially
attractive for two reasons: (1) it does away with the necessity

Table IV   TOMAR, "TO TAKE"[11]

Present Tenses

Indicative   **Subjunctive**

a.	tomo	(c)	/tom = o/	tóme	(c)	/tom = e/
b.	tómas	(c)	/tom = as/	tómes	(c)	/tom = es/
c.	tóma	(c)	/tom = a/	tóme	(c)	/tom = e/
d.	tomámos	(c)	/tom = amos/	tomémos	(c)	/tom = emos/
e.	tomáis	(c)	/tom = ais/	toméis	(c)	/tom = en/
f.	tóman	(c)	/tom = an/	tómen	(c)	/tom = en/

Imperative

b.	tóma	(c)	/tom = a/
	tómes	(c)	/tom = es/
	tóme	(c)	/tom = e/
f.	tomen	(c)	/tom = en/

Subsequent Tenses

Future   **Conditional**

a.	tomaré	(a)	/tom = aré/	tomaría	(c)	/tom = aría/
b.	tomarás	(a)	/tom = arás/	tomarías	(c)	/tom = arías/
c.	tomará	(a)	/tom = ará/	tomaría	(c)	/tom = aría/
d.	tomarémos	(c)	/tom = arémos/	tomaríamos	(b)	/tom = aríamos/
e.	tomaréis	(c)	/tom = aréis/	tomaríais	(b)	/tom = aríais/
f.	tomarán	(a)	/tom = arán/	tomarían	(c)	/tom = arían/

Past and Non-finite Tenses

Infinitive:	tomár	(a)	/tom = ár/
Gerund:	tomándo	(c)	/tom = ando/
Participle:	tomádo	(c)	/tom = ado/

Preterite

a.	tomé	(a)	/tom = é/
b.	tomáste	(c)	/tom = áste/
c.	tomó	(a)	/tom = ó/
d.	tomámos	(c)	/tom = ámos/
e.	tomásteis	(b)	/tom = ásteis/
f.	tomáron	(c)	/tom = áron/

---

[11]In the interest of space the forms are arranged as follows:
   a. First Person Singular
   b. Second Person Singular, Informal
   c. Second Person Singular, Formal; Third Person Singular
   d. First Person Plural
   e. Second Person Plural, Informal
   f. Second Person Plural, Formal; Third Person Plural
Also, only the stem boundaries have been marked. The postulation of formative boundaries between tense markers and person-number markers is well-motivated but irrelevant here.

here for the extra cycle in stress assignment (c.f., Harris
1975: 68); and (2) it eliminates postulation of a special
future/conditional stem.

As evidence that the stress cycle is in operation in the
future forms, Harris cites the verb oiré, "I will hear." Its
surface form is [oiré] not [oyré]; Harris attributes the failure
of /i/ to become [y] after [o] to the fact that /i/ was at one
stage in the derivation [+stress]. But Harris (1969: 27n) says
"there are also instances of VV [vowel/vowel] versus GV [glide/
vowel]. For example, the contrast between trisyllabic dueto
[dueto], 'duet,' and disyllabic duelo [dwelo], 'mourning,' can
presumably be accounted for by the underlying representations
/du = eto/ and /dOlo/, respectively." Harris used the boundary =
to prevent the glide-formation in dueto; the lack of glide-
formation in oiré /o = ir+e̅/ can be accounted for similarly.

The verbs of the -er/-ir conjugations have their stress
assigned in every instance in the same manner as the forms of
the -ar conjugation. Some interesting observations do result,
however. Consider the gerund, for instance: for tomar the
underlying form was /tom = ando/ with the penultimate vowel
being [-tense]; for escribir, the lexical representation is
/escrib = Endo/ and for comer, /kom = Endo/. Since the pen-
ultimate vowels are $\begin{bmatrix} \pm D \\ - tense \end{bmatrix}$ in the underlying forms of the
gerunds for all conjugations, diphthongization occurs in the
-er/-ir verbs to yield the surface representations [escribyéndo]
and [komyéndo], after stress is regularly assigned to each by
(4.c).

The imperfect forms were omitted from Table IV because they contain data that require refinement of the stress assignment rules of Spanish. The imperfect subjunctive in Spanish has two sets of endings used synomously: "I wish I had eaten" is manifested either as comiéra or comiése; "I wish I had written" as escribiéra or escribiése. In order for the diphthongization to occur, the penultimate vowel of the words above must be underlain by /E/, as in the following derivation:

(12)   comiéra, "I wish I had eaten"
        escribiése, "I wish I had written"

kom = Era   escrib = Ese   Lexical Representation

komÉra   escribÉse   Stress Assignment (4.c)

komyéra   escribyése   Diphthongization

The derivations in (12) are routine. However, when one looks at the first person plural of the past subjunctive, there seems to be a deviation from the Stress Assignment Rule: comiéramos, "We wish we had eaten;" escribiésemos, "we wish we had written." In these forms, a [+D] vowel has been stressed in antepenultimate position. Without explanation, such data could totally refute rule (4). However, I believe that an explanation exists; further, that explanation is not simply a remedy for the forms in the imperfect subjunctive, but a rule of Spanish phonology that is operative in the grammar as a whole.

Menéndez Pidal (1973: 276) makes note of an historical stress shift in the Spanish verbs, changing such forms as trabajábamos to the present-day pronunciation trabajábamos, "we used to work." In Latin the penultimate a of the verb ending was long,

or [+tense]. Harris (1969: 76n) makes note of this historical
retraction of stress but adds that he "can find no motivation
for believing that this stress shift is to be accounted for
by an unexplained laxing of the penultimate a rather than by
an equally unexplained change in the stress rule itself."
Elsewhere (122n) Harris states

> Amabámos and amarámos . . . became
> amábamos and amáramos, thus destroy-
> ing the last vestige of the relation-
> ship between verb stress and etymolo-
> gical vowel quantity. These are the
> facts, not an explanation of the facts,
> which still remains to be found and
> which would be an accomplishment of
> the highest order in historical linguistics.

Apparently then, sometime during the thirteenth century
a change took place in the synchronic grammar of Spanish.
Vowels that were etymologically tense became [-tense], and
in the process a stress shift occurred. Harris could find
no motivation for such "laxing" because he had not formalized
his theories about the nature of the feature [tense] and did
not know the role of that feature in stress assignment. How-
ever, the stress shift in these verb forms[12] cannot be fully
explained by simply marking the penultimate vowel [-tense].
According to (4), the antepenultimate vowel would then have
to be marked [+tense] for the correct stress assignment to
be made--which is highly unlikely. The solution lies in the
concept of boundary markers.

---

[12]A similar shift in non-verb stress is dealt with later.

Chomsky and Halle (1968:66-67) delineate three kinds of boundary markers: the word boundary, [#]; the formative boundary, [+]; and a boundary that is different from either the word or formative boundary, [=]. As one can recall, Harris used the boundary [=] to account for the lack of glide formation in duéto. Chomsky and Halle use the concept of boundaries in accounting for some otherwise aberrant occurrences of stress in words that have undergone affixation (100-110). As was mentioned earlier, the postulation of formative boundaries between tense markers and person-number endings is well-motivated; Harris uses formative boundaries throughout his analysis of verbs in Spanish Phonology. He postulates the imperfect subjunctive form comiéras as com + e + ra + s (78). Harris does not, however, assume that these boundaries play any part in stress assignment. There must, however, be a rule like (13) in the synchronic grammar of Spanish:

(13)

$$V \longrightarrow [+\text{stress}] \ / \ X \underline{\hspace{1cm}} C_0 \begin{bmatrix} -\text{seg} \\ +\text{FB} \end{bmatrix} C_0 \begin{bmatrix} V \\ +\text{stress} \\ -\text{tense} \end{bmatrix} C_0 V \# \#$$

Rule (13) would be operative in the grammar after rule (4); the effect of (13) would follow the conventions established by Chomsky and Halle in that it would de-stress the vowel that has already been stressed:

(14)
comiéramos, "we wish we had eaten:

kom = Er + amos	Lexical Representation
komÉr + ámos	Stress assignment (4.c)
komÉramos	Stress Adjustment (13)
komyéramos	Diphthongization

Reference to Table IV will show that the verbs are postulated with the boundary [=] separating the stem and the various mood-tense, person-number markers. Such a postulation prevents a form like tomámos from becoming *tómamos.[13] Table IV can now be completed with the imperfect subjunctive and the imperfect indicative forms:

(15)

Imperfect Indicative

a.	tomába	(c)		/tom = aba/
b.	tomábas	(c)		/tom = abas/
c.	tomába	(c)		/tom = aba/
d.	tomábamos	(c: 13)		/tom = ab + amos/
e.	tomábais	(c: 13)		/tom = ab + ais/
f.	tomában	(c)		/tom = aban/

Imperfect Subjunctives

a.	tomára	(c)		/tom = ara/
b.	tomáras	(c)		/tom = aras/
c.	tomára	(c)		/tom = are/
d.	tomáramos	(c: 13)		/tom = ar + amos/
e.	tomáris	(c)		/tom = ar + ais/
f.	tomáran	(c)		/tom = ara/

a.	tomáse	(c)		/tom = ase/
b.	tomáses	(c)		/tom = ases/
c.	tomáse	(c)		/tom = ase/
d.	tomásemos	(c: 13)		/tom = as + emos/
e.	tomáseis	(c: 13)		/tom = as + eis/
f.	tomásen	(c)		/tom = asen/

---

[13]Hooper and Terrell (79-80) note that "In a number of dialects of Spanish (notably Andalusian . . . and Chicano . . .) stress has been retracted on (4) and (5) first and second person plural of the present subjunctive. . . ." The forms resulting are listed as cómamos and trabájemos. These aberrations may be readily explained as a substitution of [+] for [=] as the boundary in these forms.

It was not immediately obvious that the vowel in penultimate position in tomába was not [+tense] throughout its paradigm. Stress would then have been correctly assigned to all forms except the nosotros and vosotros endings by (4.c); the endings for nosotros and vosotros would have been correctly stressed by (4.b). In view of the diphthongization that occurs in the imperfect subjunctive, however, I am postulating the vowel in question as [-tense] and relying on the stress adjustment rule in (13) to achieve the desired results. Throughout the imperfect paradigm for -ar infinitives, then, the vowel immediately following the stem in [-tense]. For the -er and -ir infinitives, however, the theme vowel must be [+tense] in the imperfect indicative since this vowel retains its stress in all forms:

(16)
Imperfect Indicative

a.	comía	(c)	/kom = Ía/
b.	comías	(c)	/kom = Ías/
c.	comía	(c)	/kom = Ía/
d.	comíamos	(b)	/kom = Íamos/
e.	comíais	(b)	/kom = Íais/
f.	comían	(c)	/kom = Ían/

Further Applications of the Stress Adjustment Rule

The domain of the rule in (13) is not limited to verb forms. It can also be used to account for some puzzling occurrences of stress in non-verbs. Harris (1975: 58-59) notes come problematic forms in the following:

> Take teléfono; we cannot say that the
> second e is inherently or lexically
> stressed, for the simple reason that it
> occurs unstressed in telefónico, tele-
> fonísta, telegráma, etc. Suppose one

denies that the tele- of teléfono is
the same morpheme as the tele- of
telefónico, telefonista, etc. (or,
more extremely denies that the telefon-
or teléfono is the same as the telefón-
of telefónico or the telefon- of
telefonista). or claims instead that
'words' rather than morphemes are
lexically marked for stress. The
first of these claims is patently ludi-
crous, I would say; and the second is
forced to miss the generalization that
all words ending in the suffix -ico 'ic'
receive stress on the syllable immedi-
ately preceding this suffix, the general-
ization that all words ending in the
suffix -ista '-ist' are penultimately
stressed, and in fact every other general-
ization about stress placement in Spanish.

Since the forms teléfono, telefónico, and telefonísta involve

suffixation, it is a well-motivated assumption that rule (13)

could be in operation here, too. The forms in (17) demonstrate

the effectiveness of the Stress Adjustment Rule in accounting

for such problematic forms as those noted by Harris:

(17)

    A. período, "period"
        peri + odo   Lexical Representation
        peri + ódo   Stress Assignment (4.c)
        período   Stress Adjustment (13)

    B. periodísta, "journalist"
        peri + od + ista   Lexical Representation
        periodísta   Stress Assignment (4.c)

    C. periódico, "newspaper"
        peri + od + ik + o Lexical Representation
        peri + od + ík + o Stress Assignment (4.c)
        periódiko   Stress Adjustment (13)

    D. periodístico, "journalistic"
        pero + od + ist + ik + o Lexical Representation
        peri + od + íst + ik + o Stress Assignment (4.b)

The penultimate vowel in (17.a) is lax, the environment for stress adjustment as per (13). The penultimate vowel in (17.b) is [+tense]; hence, stress does not retract. From (17.c), it becomes clear that the vowel in /ik/ is [-tense], causing the generalization in Spanish that the vowel before /ik/ is always [+stress]. Case (d) of (17) could be accounted for by either (4.b)--as shown--or (4.c) and (13); I have chosen the former possibility because the rules are disjunctively ordered.

Turning back to tele-, one sees that the same regularity of rule application that was demonstrated in (17) is in effect:

(18)

A. teléfono, "telephone"
   tele + fon + o   Lexical Representation
   tele + fón + o   Stress Assignment (4.c)
   telé + fon + o   Stress Adjustment (13)

B. telefónico, "telephonic"
   tele + fon + ik + o   Lexical Representation
   tele + fon + ík + o   Stress Assignment (4.c)
   tele + fón + ik + o   Stress Adjustment (13)

C. telefonísta, "telephone oerator"
   tele + fon + ïsta   Lexical Representation
   tele + fon + ísta   Stress Assignment (4.c)

Other variations with tele-, telefóto, "telephoto;" telegráma, "telegram;" telesílla, "chair lift;" teletípo, "teletype;" and teletúbo, "television tube" must have either [+tense] penultimate vowels or have different boundaries. I believe the latter is the correct assumption for two reasons: (1) all the words in the above list contain a free morpheme as well as the bound morpheme tele-; (2) other occurrences of

stress in the free morphemes are not needlessly complicated

by the postulation of a [-tense] penultimate vowel, Teleféto,

then, would be ##tele#foto## as opposed to teléfono, ##tele +

fon + o##.

Realizing that the boundaries in such forms as telefóto/

teléfono are different and that the variance in stress assignment

is directly related to the type of boundary present, one can

account for multitude of stress occurrences in words including

affixes in Spanish. Countless forms can be found with (a)

stress on the antepenultimate and (b) some sort of suffixation;

in each of these forms the penultimate vowel of the suffix is

[+tense], making (13) applicable to retract the stress. Some

representative suffixes and words are given in (19):

(19)

SUFFIX	MEANING	WORD	MEANING
-metro	"-meter"	velocímetro	"speedometer"
-filo	"-phyle"	bibliófilo	"lover of books"
-foro	"-fous"	necróforo	"sexton beetle"
-fito	"-phyte"	neófito	"neophyte"
-grafo	"-graph"	bolígrafo	"ball point pen"
-fero	"-ferous"	nubífero	"cloud-gringing"
-ulo	"-al"	vestíbulo	"entry hall"
-ido	"-id"	mórbido	"morbid"

Rule (13), then, correctly adjusts stress in verb and non-verb

forms alike.

Other Problems in Stress Occurrence

Before rule (4) can be accepted unquestionably as the

rule of stress placement in Spanish, there is one other major

class of occurrences that must be examined. The reader will

recall that Harris (1969: 56-57), as well as Hooper and Terrell

(66), thought it necessary to assign stress to verbs by

different rules from non-verbs because of a series of verbs

and non-verbs with stress alternations in otherwise identical

surface forms. Ánimo, "spirit," and animó, "I instill spirit,"

were among the numerous examples given. Also, there would

seem to be some problem in assigning the correct stress to

certain words with affixes. For instance, corazón, "heart,"

must have a [+tense] vowel in the ultimate position in order

to have its stress assigned by (4,a); however, to predict the

stress in acorazonádo, "heart-shaped," the antepenultimate

vowel cannot be [+tense] at the time of stress placement.

Since both of these situations involve (a) moving stress one

syllable to the right and (b) affixation, it seems reasonable

that the process involved in achieving their stress placement

might be the same.

Attention is first given to the contrasting stress in

verb/non-verb pairs. The verbs in each of these cases have

been back-formed by the addition of the -ar infinitive ending

to the stem of a non-verb. Harris (1969: 150) makes note of

this procedure in the following:

> For example, the verb cantar, "to sing,"
> in said to be derived from the noun
> canto, which consists of the root can
> plus the noun-forming -to (actually -t
> + o since the final vowel is o in mas-
> culine nouns and a in feminine nouns.

It is obvious, then, that the o in ánimo is different from

the o in animó in that the former is a non-verb gender marker,

while the latter is a person-number marker of the present tense.

It is reasonable, also, to assume a different boundary before

the final segments of each of these words; and it is further

reasonable to assume that these boundaries function somehow

in the variance of stress placement. The lexical representation

for the non-verb form would be /ānim + o/ and for the verb

form would be /ānim # o/. The word boundary has been assumed

for the verb form because it is the form that has undergone

affixation outside its original form class. Now a rule of

vowel laxing can be formulated to be placed in the grammar

<u>before</u> rule (4), the rule of stress assignment.

    (20)   V $\longrightarrow$ [-tense] /___C_0(V) # [+seg]

The effect of (20) would be to lax the [+tense] penultimate

vowel of /ānim-/ when it occurs in its verb form with the

word boundary [#]. Rule (20) also correctly predicts the

stress in acorazonádo.

    (21)   acorazonádo, "heart-shaped"
            a + korasōn # ado   Lexical Representation
            a + korason # ado   Laxing (20)
            a + korason # ádo   Stress Assignment (4.c)

As one can see, the stress is assigned routinely after laxing

as per (20) has taken place. In support of his distinction

between the rules that assign stress to verbs and those that

assign stress to non-verbs, Harris (1975: 57) makes the

following comment:

> Thus either (a), at the stage of derivation
> at which stress is assigned, the segmental
> compositon of the forms of one or both sets
> differs in some relevant respect from the

> segmental composition of the corresponding
> surface representations, or (b) different
> stress rules are involved. Since no evidence
> for (a) is known--that is, since stress is
> assigned to representations that are identical
> in all relevant respects to surface represen-
> tations--it follows that the stress rules for
> verbs are not identical to those for non-verbs
> (1975: 57).

Since (20) occurs in the grammar before stress assignment,

there is evidence for Harris' first assumption. Stress is

routinely assigned to verbs and non-verbs alike.

Historical data provide very reassuring evidence for

rule (20). At the same time that rule (13)--the Stress

Adjustment Rule--entered the grammar, rule (20) was introduced.

Menéndez Pidal (1973: 27) makes note of this change:

> los verbos cultos dislocaron el acento
> latino para hacer llanas las formas latinas
> esdrújulas, así: recupéro, colóco, vigíla
> y otros muchos; compárense las formas
> españolas de súpplico, imágino, de-término,
> hábito, árrogo, ággrego, élevo, íntimo,
> fructí-, amplí-, notí- fico. --El cambio
> del acento latino no la hacían aun los
> cultismos del siglo XIII.

Rules (13) and (20) account for the only kinds of

exceptions to rule (4), the Stress Assignment Rule. The

over-all effectiveness of (4) in predicting the assignment

of stress in Spanish--coupled with the fact that the only

two kinds of exceptions to (4) can be predicted by synchronic

rules that complement the historical processes--seems very

strong evidence that (4) is indeed the rule of stress assignment

in the language.

CHAPTER IV

CONCLUSIONS ON SPANISH STRESS ASSIGNMENT

What is explicitely claimed in this thesis is the
following: (1) stress is assigned to non-verbs and verbs
by the same rule; (2) the feature [tense] figures crucially
in the stress assignment rule of Spanish; and (3) historical
changes occurring around the thirteenth century introduced
phonological boundaries into the language--these boundaries
play a rule in the prediction of stress.

Summary or Rules

The rules postulated in Chapter III have been reordered
and given in (1):

(1)

    a. Laxing Rule   Chapter III, (20)

$$V \longrightarrow [\text{-tense}] \,/\, \underline{\quad} C_0 (V) \# \, [\text{+seg}]$$

    b. Stress Assignment Rule   Chapter III, (4)

$$V \longrightarrow [\text{+stress}] \,/\, X \underline{\quad\quad} \left\{ \begin{array}{ll} [\text{+tense}] \ \#\# & \text{(i)} \\[2ex] [\text{+tense}] \ C_0 V C_0 V C_0 \#\# & \text{(ii)} \\[2ex] C_0 \underline{\quad\quad} C_0 V C_0 \#\# & \text{(iii)} \\[2ex] C_0 \underline{\quad\quad} C_0 \#\# & \text{(iv)} \end{array} \right.$$

    c. Stress Adjustment Rule   Chapter III, (13)

$$V \longrightarrow [\text{+stress}] \,/\, X \underline{\quad\quad} C_0 \begin{bmatrix} \text{-seg} \\ \text{+FB} \end{bmatrix} C_0 \begin{bmatrix} \text{Vowel} \\ \text{+stress} \\ \text{-tense} \end{bmatrix} C_0 V \#\#$$

The interaction of the three rules given in (1) account for stress in practically every word in Spanish--which seems strong evidence for the acceptance of these rules as valid.

The Abstact Nature of [tense]

In order to accept the stress assignment rule proposed in this paper, one must accept the concept of [tense] as operative in Spanish. The tense-lax distinction is an abstract one, with no surface phonetic expression. Such natural generative phonologists as Hooper and Terrell immediately dismiss [tense] as mythological since there is no surface-level residue. Harris, as a transformational generative phonologist makes reference to [-tense], but, only as Brame and Bordelois point out (1973:159-163), as a remedial tool when his other rules seem to be producing unwanted occurrences. His earlier attempt to identify the feature [+D] as [-tense] is recanted in (1975).

Can, then, a feature which has been so repeatedly rejected in the synchronic grammar of Spanish indeed be the motivating abstraction for the assignment of stress in the language? Rules given in (1) make that possibility highly attractive. To accept the feature [tense] in Spanish, one must begin by abandoning any attempt to find surface level artifacts of [tense] outside of stress assignment and by admitting that the feature is ENTIRELY AD HOC. Now that those dreaded words have not only been pronounced over the feature but emphasized about it, one is free to investigate the possibility of an

ad hoc entity being valid. In our incomplete knowledge of synchronic grammar, there are many undetermined motivations for processes about which linguists have had to make some assumptions that are to one degree or another "bridges" between the known, observable data and linguistic universals.[1] These kinds of assumptions must be made if knowledge of individual language grammars is to expand. The issue with ad hoc assumptions, then, is not that they should not be made, but rather how well the resulting generalizations reflect the over-all functioning of the synchronic grammar. If a feature that begins as an ad hoc assumption ends up as the most efficient way of predicting a particular phenomenon within the language grammar—without detracting from the knowledge of Spanish phonology as already established—the label ad hoc should be removed.

By formulating a rule like (1.b), there are only two kinds of exceptions—the retraction of stress in such forms as telefónico and the shift of stress one syllable to the right, as in ánimo. I do not believe that it is coincidental that the changes reflected in these examples are also found in the historical grammar of Spanish at a time when the various phonological boundary features causing such changes entered the synchronic grammar.

In view of the evidence presented in this thesis, rule (1.b), together with rules (1.a) and (1.c), is the method of

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[1]The diacritic [X], for instance, employed by Harris as well as Hooper and Terrell is, in effect, such a bridge.

accounting for stress in Spanish that captures the greatest

generalities that can be made about stress assignment in the

language. While the basic feature of the rule is an abstraction,

the regularity of its operation cannot be denied. Moreover,

the assumption of the stress rules based on [tense] in no way

diminishes the existing knowledge of Spanish phonology. Indeed,

such an assumption aids in the validation of the current

theoretical data.

The problems connected with the formulation of stress

rules based on the feature [tense] are obvious: since there

is no correlation between the underlying tense-lax distinction,

and the surface representations of Spanish words, the facts

about such a distinction are not clear. Further, there is no

current knowledge of independently motivated support for the

tense-lax distinction, although one would hope for the dis-

covery of such information outside the realm of stress as-

signment. Also, to assume an underlying vowel system of

thirteen distinct vowels (five [+tense], five $\begin{bmatrix} -D \\ -tense \end{bmatrix}$, and

three $\begin{bmatrix} +D \\ -tense \end{bmatrix}$) would force such distinctions to be made in

lexical representations of all Spanish morphemes when, in fact,

evidence for making this distinction is not always at hand.

However, the gains in simplicity in the rules of stress

assignment in Spanish that are achieved in the recognition

of the underlying tense/lax distinction in vowels are so great

that they serve as a positive spur to further investigations

that would meet the objections just noted.

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