NOTES TOWARDS A GRAMMAR OF SPANISH METRIC PHONOLOGY

Although there are many detailed traditional treatments of Spanish metrics[1], no study to date has attempted to take account of recent research into the phonology of the Spanish language[2]. Yet, in the light of some current opinion, one of the weakest concepts of traditional Spanish metrics is that of the diphthong (and, to a lesser degree, of the triphthong), used to refer to contiguous vowels where one is an unstressed /i/ or /u/ and the two vowels together count as one syllable in the metric scansion[3]. Terms used for this phenomenon include

[1]See the extensive listings in Homero Serís, *Bibliografía de la lingüística española* (Bogotá, Instituto Caro y Cuervo, 1964).

[2]The best studies to date are Sol Saporta and Heles Contreras, *A phonological grammar of Spanish* (Seattle, University of Washington Press, 1962); and Emilio Alarcos Llorach, *Fonología española*, 4ª ed. (Madrid, Gredos, 1965).

[3]This assertion is central to the discussion which follows. Although my analysis of the so-called diphthongs in Spanish is "revolutionary" in terms of standard treatments of the subject, my poi t of view is lent support by Spain's leading linguist: cf. Alarcos Llorach, *op. cit.*, p. 225. J. Donald Bowen, Robert P. Stockwell, and I. Silva-Fuenzalida, in their classic study, "Spanish juncture and Intonation", *Language*, xxxii (1956), 641-665, in essence agree with my rejection of *ie* and *ue* as diphthongs in Spanish, although their analysis is into [ye] and [we], where *y* and *w* are semivowels. Noam Chomsky and Morris Halle, *The Sound Pattern of English* (New York, Harper and Row, 1967), approach the English diphthongs as two separate vowel constituents — an analysis which would supposedly be equally applicable for Spanish, with the difference between the pairs in the two languages being the tenseness of the Spanish glide as compared to the laxness of the glide in English. For a study of the vowel sequences of Spanish, see J. Donald Bowen, "Sequences of Vowels in Spanish", *Boletín de filología de la Universidad de Chile*, ix (1956-57), 5-14.

diphthong to refer to [ai], [ei], [oi], [ui], [au], [eu] [ou], [iu], [ia], [ie], [io], [ua], [ue] and [uo] when the two vowels occur within the word; *sinalefa* when the aforementioned vowel combinations occur across word boundaries, and where /i/ or /u/ may either be a phonemic /i/ or /u/ or a reduction of /e/ or /o/, respectively; *sinalefa* may also refer to any two identical contiguous vowels (e.g., [a] + [a]) which are pronounced as one and counted as one syllable; *sinéresis* is *sinalefa* within the boundaries of one word where one of the two "strong vowels" (involves only /e/ and /o/; /a/ is never "reduced") is reduced to [i] or [u] to form a diphthong (see fourteen possible combinations above); *hiato* is the avoidance of *sinalefa; diéresis* is the opposite of *sinéresis* and involves the splitting up of one of the so-called diphthongs into two metric syllables by stressing the "weak-vowel" element.

These processes as they are customarily described imply the acceptance of the concept of the diphthong in contemporary Spanish vowel phonology. While it is probably true that Medieval Spanish had diphthongs (at least a /i͡e/ and a /u͡e/)[4], it is doubtful that contiguous vowels in present-day Spanish should be so described. Although the conservative orthography prevents the hyphenation of the so-called diphthongs, the fact that a native speaker is able to pronounce *tiene* as *ti-e-ne, duermo* as *du-er-mo, familia* as *fa-mi-li-a,* etc. is worthy of serious consideration. From the point of view of modern phonology the morae of "true diphthongs" cannot be isolated and pronounced separately. If the native speaker is conscious of such a separation (as the native speaker of English /e͡i/ as in *say* is *not),* then the nucleus in question may not technically be considered a diphthong. In addition, one wonders what evidence, phonemic or phonetic, can be advanced to support the contention that the vowel of *seis* constitute any more of a diphthong than do those of *seas*[5]. If the foregoing is accurate, the

[4]See David William Foster, "Phonemic Issues Associated with the Four Yods of Spanish", to appear in *Filologia Moderna.* This subject is discussed as it pertains to the main intent of the paper.

[5]Of further importance is the fact that the [e͡i] of Spanish *seis* is phonetically different from the true diphthong of English *say,* giving rise to a well-known teaching problem between the two languages. Cf. Robert P. Stockwell, and Donald Bowen, *The Sounds of English and Spanish* (Chicago, University of Chicago Press), pp. 98-99. The fact that /e/ or /u/ of [V] V_{II} [V] combinations are shorter than /aeo/ in the same environment is of phonetic significance, but certainly cannot be taken as phonological proof that the sequences involved constitute diphthongs.

concept of the diphthong as it has been traditionally used masks the true syllabic nature of Spanish words and introduces an element of severe inaccuracy from a phonological point of view in the scansion of Spanish poetry.

An alternate approach would be to acknowledge that in present-day Spanish diphthongs as vowels of changing aperture do not exist, and to proceed to render a description of the significance to Spanish metrics that such an acknowledgement implies. One basic difference is that a new framework must be constructed for accounting for the many common metric forms, a framework which includes an adequate and efficient description of the prevalent processes of *sinalefa, hiato, sinéresis* and *diéresis*. One preliminary conclusion that may be derived from the approach outlined below may be worthy of mention at this point. While the colloquial language under normal circumstances contains no diphtongs (complex vocalic nuclei), but rather discrete contiguous vowel nuclei, the poetic language binds certain types of contiguous vowels (the so-called diphthongs and vowel combinations in *sinalefa* and *sinéresis)* and assigns them the metric value of one syllable. The most immediate implication of this observation is that we must define the nature of the Spanish vocalic nucleus differently for the grammatical (colloquial) language and for the non-grammatical (poetic) language respectively[6].

The following outlines attempt to present a phonological model

[6]The idea of separate standards for colloquial and poetic larguage has been one of the ways modern discussions of literature have offered to distinguish what are surely two different ideals in any one language. Grammatical and non-grammatical represent perhaps more radical terms, but they are intended to underline what many believe to be the degree to which *all* language used poetically or literarily diverges in its intense density and complexity of meaning from the colloquial non-literary norm. See Sol Saporta's essay "The application of linguistics to the study of poetic language", in Thomas A. Sebeck, *Style in language* (Cambridge, Technology Press of the Massachusetts Institute of Technology, 1960), 82-93. See also Samuel Levin's important study, *Linguistic structures in poetry* ('s-Gravenhage, Mouton, 1962).

In passing, one might suggest that the reason that a distinction exists today between the definition of a colloquial syllabic nucleus derives from the fact that the metric patterns of Spanish were established at a time when the language may have had diphthongs. The essentially artificial nature of the metric schemes failed to acknowledge the phonemic split via monophthongization of the single diphthong syllabic nuclei into separate contiguous simple nuclei. Hence, the basic difference between the metric treatment of syllables and the colloquial treatment of them.

for the treatment of syllables in Spanish metrics and to offer a series of analyses which will derive from metric values in terms of the "feet" needed to constitute a particular metric pattern the correspondingly appropriate phonologic descriptions of lines of poetry. The metric foot is described below in terms of an MVN, a metric vocalic nucleus, equal to *one* vowel in metric measure or scansion. The sets of rules given are in three parts: 1. definition of vowel constituents of the MVN, 2. phonemic components of the vowel constituents, and 3. phonetic realizations of the phonemic components in terms of their function metrically in a line of Spanish poetry. Following these rules are those dealing with processes yielding two metric vocalic nuclei.

1. VOWEL CONSTITUENTS OF THE METRIC VOCALIC NUCLEUS.

$$\begin{aligned}
\text{MVN} &\rightarrow \text{V} && \text{(a)}\\
&\quad \text{V}_{\text{H}} + \text{V}_{\text{x}} && \text{(b)}\\
&\quad \text{V}_{\text{x}} + \text{V}_{\text{H}} && \text{(c)}\\
&\quad \text{V}_{\text{H}} + \text{V}_{\text{H}} && \text{(d)}\\
&\quad \text{V}_{\text{H}} + \text{V}_{\text{H}} && \text{(e)}\\
&\quad \text{V}_{\text{H}} + \text{V}_{\text{H}} && \text{(f)}\\
&\quad \text{V}_{\text{x}} + \text{V}_{\text{x}}{}^{7} && \text{(g)}\\
&\quad \text{V}_{\text{N}} + \text{V}_{\text{N}}{}^{8} && \text{(h)}\\
&\quad \text{V}_{\text{H}} + \text{V}_{\text{x}} + \text{V}_{\text{H}} && \text{(i)}
\end{aligned}$$

V = any Spanish vowel phoneme, with or without phonemic stress.
V_{H} = any Spanish high vowel (/i/, /u/) without phonemic stress.
+ = syllable boundary.
V_{x} = any Spanish non-high vowel (/a/, /e/, /o/) with or without phonemic stress.
V_{H} = any Spanish high vowel (/i/, /u/) with phonemic stress.

[7]This is an unusual reduction of 2MVN MVN. When it does occur it is called *sinéresis*.

[8]This reduction (reduction in the sense that two phonemically separate vowels count as one metrically), obligatory also in colloquial speech, is called *sinalefa*. Where V # V → 2MVN (i. e., where no reduction takes place and the normal phonemic circumstances prevail), it is called *hiato*. See discussions of 2MVN below. For a good analysis of optional and obligatory reductions of contiguous vowels, see Robert P. Stokwell and J. Donald Bowen, *Sounds*, pp. 108-15.

V_N = any single phonemic vowel nucleus, or any metric vowel nucleus resulting from one of the preceding rules[7a].

$\#$ = word boundary.
$'$ — phonemic stress.

It may be seen that a metric vocalic nucleus counting as one syllable in scansion may consist of a single vowel, two contiguous vowels (in the majority of cases, one of these vowels is a high vowel), or three contiguous vowels in which the first and third are high vowels. With regard to stress, only the three vowel sequence is obliged to carry phonemic stress, over the second, non-high vowel, and in all other cases single vowel metric nuclei or two vowel metric nuclei may or may not bear phonemic stress.

2. PHONEMIC COMPONENTS OF THE VOWEL CONSTITUENTS OF MVN.

$$\mathbf{V} \rightarrow \mathbf{/a/},\ /e/,\ /o/,\ /i/,\ /u/ \qquad \text{(a)}$$

$$V_H + V_X \rightarrow /i/ + /a/;\ /i/ + /e/;\ /i/ + /o/;\ /u/ + /a/;\ /u/ + /e/;\ /u/ + /o/ \qquad \text{(b)}$$

[7a]Word initial morphemes beginning with orthographic *hia-, hie-, hio-, hiu-,* and *hua-, hue-, hui-, huo-,* present a special program. Most analyses of the principal Spanish dialects agree that, in the case of the first four combinations, the phonemic sequences are CV-: /$\hat{y}$a-, $\hat{y}$e-, $\hat{y}$o-, $\hat{y}$u-/. There is considerable discussion whether the remaining four should be represented as VV-: /ua-, ue-, ui-, uo-/ or as CV-: /wa-, we-, wi-, wo-/. In addition, in some dialects, there is a certain a ount of evidence suggesting a VV- an ly is for the first four examples: /ia-, ie-, io-, iu-/ (as apposed to CV- for *ya-, ye-, yo-, yu-*). See David William Foster, "A Note on the /y/ Phoneme of Porteño Spanish", *Hispania,* L (March, 1967), 119-21. For general treatments of /$\hat{y}$/ and /or /w/, see J. Donald Bowen and Robert P. Stockwell, "The Phonemic Interpretation of Semivowels in Spanish", *Language,* XXXI (1955), 236-40; Sol Saporta, "A Note on Spanish Semivowels", *Language,* XXXII (1956), 287-90; J. Donald Bowen and Robert P. Stockwell, "A Further Note on Spanish Semivowels", *Language,* XXXII (1956), 290-

$V_x + V_H \rightarrow$	/a/ + /i/	(c)
	/e/ + /i/	
	/o/ + /i/	
	/a/ + /u/	
	/e/ + /u/	
	/o/ + /u/	
$V_H + V_H \rightarrow$	/i/ + /u/	(d)
	/u/ + /i/	
$V_H + V_H \rightarrow$	/í/ + /u/	(e)
	/ú/ + /i/	
$V_H + V_H$	/i/ + /ú/	(f)
	/u/ + /í/	
$V_x - V_x$	/a/ + /a/	(g)
	/a/ + /e/	
	/a/ + /o/	
	/e/ + /a/	
	/e/ + /e/	
	/e/ + /o/	
	/o/ + /a/	
	/o/ + /e/	
	/o/ + /o/	
$V_N \neq V_N \rightarrow$	/a/ ≠ /a/	(h)
	/a/ ≠ /e/	
	/a/ ≠ /o/	
	/a/ ≠ /i/	
	/a/ ≠ /u/	
	/e/ ≠ /a/	
	/e/ ≠ /e/	
	/e/ ≠ /o/	
	/e/ ≠ /i/	
	/e/ ≠ /u/	
	/o/ ≠ /a/	
	/o/ ≠ /e/	
	/o/ ≠ /o/	
	/o/ ≠ /i/	
	/o/ ≠ /u/	

92. The rule $V_N \neq V_N$ provides for word initial VV- sequences in those dialects where such sequences would be posited.

/i/ ≠ /a/
/i/ ≠ /e/
/i/ ≠ /o/
/i/ ≠ /i/
/i/ ≠ /u/

$V_H + V_x + V_H \rightarrow$ /i/ + /á/ + /i/ (i)
/i/ + /é/ + /i/
/u/ + /á/ + /i/
/u/ + /é/ + /i/[9]

These rules account for the phonemes found to occur in the unit made up of both simple vowels and combinations —a unit which is described and counted as a single syllable in Spanish metrics. The following group of rules will reflect the phonetic nature of these units in terms of a broad description of the manner in which they would be realized in an oral rendition of the line of poetry in which they occur.

3. PHONETIC REALIZATIONS OF THE PHONETIC COMPONENTS OF THE MVN.

/a/ → [a] (a)
/e/ → [e]
/o/ → [o]
/i/ → [i]
/u/ → [u]

/i/ + /a/ → [i̯a] (b)
/i/ + /e/ → [i̯e]
/i/ + /o/ → [i̯o]
/u/ + /a/ → [u̯a]
/u/ + /e/ → [u̯e]
/u/ + /o/ → [u̯o]

/a/ + /i/ → [ai̯] (c)
/e/ + /i/ → [ei̯]
/o/ + /i/ → [oi̯]
/a/ + /u/ → [au̯]

[9]Theoretically, there are twelve combinations admissable here; only the four appearing in Spanish words are included. A combination such as /i/ + /o/ + /i/, as in Bioy (an Argentine writer), is rare and "foreign" enough to justify omission.

/e/ + /u/ → [e̯u̯]
/o/ + /u/ → [o̯u̯]

/i/ + /u/ → [i̯u] (d)
/u/ + /i/ → [u̯i]

/í/ + /u/ → [í̯u̯] (e)
/ú/ + /i/ → [ú̯i̯]
/i/ + /ú/ → [i̯ú] (f)
/u/ + /í/ → [u̯í]

/a/ + /a/ → [a] (g)
/a/ + /e/ → [a̯i̯]
/a/ + /o/ → [a̯u̯]
/e/ + /a/ → [i̯a]
/e/ + /e/ → [e]
/e/ + /o/ → [e̯u̯]
/o/ + /a/ → [u̯a]
/o/ + /e/ → [u̯e]
/o/ + /o/ → [o]

/a/ ⫩ /a/ → [a] (h)
/a/ ⫩ /e/ → [a̯i̯]
/a/ ⫩ /o/ → [a̯u̯]
/a/ ⫩ /i/ → [a̯i̯]
/a/ ⫩ /u/ → [a̯u̯]
/e/ ⫩ /a/ → [i̯a]
/e/ ⫩ /e/ → [e]
/e/ ⫩ /o/ → [i̯o]
/e/ ⫩ /i/ → [e̯i̯]
/e/ ⫩ /u/ → [e̯u̯]
/o/ ⫩ /a/ → [u̯a]
/o/ ⫩ /e/ → [u̯e]
/o/ ⫩ /o/ → [o]
/o/ ⫩ /i/ → [o̯i̯]
/o/ ⫩ /u/ → [o̯u̯]
/i/ ⫩ /a/ → [i̯a]
/i/ ⫩ /e/ → [i̯e]
/i/ ⫩ /o/ → [i̯o]
/i/ ⫩ /i/ → [i]
/i/ ⫩ /u/ → [i̯u]

/u/ ⋕ /a/ → [u̯a]
/u/ ⋕ /e/ → [u̯e]
/u/ ⋕ /o/ → [u̯o]
/u/ ⋕ /i/ → [u̯i]
/u/ ⋕ /u/ → [u]

/i/ + /á/ + /i/ → [i̯á i̯] (i)
/i/ + /é/ + /i/ → [i̯é i̯]
/u/ + /á/ + /i/ → [u̯á i̯]
/u/ + /é/ + /i/ → [u̯é i̯]

[a] = syllabic low central vowel
[e] = syllabic mid-front vowel
[o] = syllabic mid-back vowel
[i] = syllabic high-front vowel
[u] = syllabic high-back vowel
[i̯] = non-syllabic high-front vowel
[u̯] = non-syllabic high-back vowel

4. VOWEL CONSTITUENTS OF UNITS CONSTITUTING TWO METRIC VOCALIC NUCLEI

2MVN → $V_x + V_x$ (a)
V_x —d— V_H (b1)
V_H —d— V_x (b2)
V_H —d— V_H (b3)
V_H —d— $V_x + V_H$ (b4) [10]
$V_x + \overset{/}{V_H}$ (c)
$\overset{/}{V_H} + V_x$ (d)
V_N —h— V_N (e) [11]
V_N ⋕ V ⋕ V_N (f)

—d— Diéresis

two phonemic syllable nuclei equal 2MVN

—h— Hiato

5. PHONETIC COMPONENTS OF THE VOWEL CONSTITUENTS OF 2MVN

$V_x + V_x$ → /a/ + /a/ (a)
/a/ + /e/

[10] These four rules produce what is called *diéresis*.

[11] This rule produces what is called *hiato*.

/a/ + /o/
/e/ + /a/
/e/ + /e/
/e/ + /o/
/o/ + /a/
/o/ + /e/
/o/ + /o/

V_x —d— $V_н$ → /a/ + /i/
/e/ + /i/
/o/ + /i/
/a/ + /u/
/e/ + /u/
/o/ + /u/

$V_н$ —d— V_x → /i/ + /a/ (b2)
/i/ + /e/
/i/ + /o/
/u/ + /a/
/u/ + /e/
/u/ + /o/

$V_н$ —d— $V_н$ → /i/ + /u/ (b3)
/u/ + /i/

$V_н$ —d— $\acute{V}_x$ — $V_н$ → /i/ + /á/ + /i/ (b4)
/i/ + /é/ + /i/
/u/ + /á/ + /i/
/u/ + /é/ + /i/[12]

V_x + $V_н$ → /a/ + /i/ (c)
/a/ + /ú/
/e/ + /í/
/e/ + /ú/
/o/ + /í/
/o/ + /ú/

$V_н$ + V_x → /í/ + /a/ (d)
/í/ + /e/

[12]See note 8. The same comments apply here.

/í/ + /o/
/ú/ + /a/
/ú/ + /e/
/ú/ + /o/

V_N —h—V_N → /a/ ǂ /a/ (e)
/a/ ǂ /e/
/a/ ǂ /o/
/a/ ǂ /i/
/a/ ǂ /u/
/e/ ǂ /a/
/e/ ǂ /e/
/e/ ǂ /o/
/e/ ǂ /i/
/e/ ǂ /u/
/o/ ǂ /a/
/o/ ǂ /e/
/o/ ǂ /o/
/o/ ǂ /i/
/o/ ǂ /u/
/i/ ǂ /a/
/i/ ǂ /e/
/i/ ǂ /o/
/i/ ǂ /i/
/i/ ǂ /u/
/u/ ǂ /a/
/u/ ǂ /e/
/u/ ǂ /o/
/u/ ǂ /i/
/u/ ǂ /u/

V_N ǂ V ǂ V_N → /a/ ǂ /i/ ǂ /a/ (f)
/a/ ǂ /i/ ǂ /e/
/a/ ǂ /i/ ǂ /o/
/a/ ǂ /e/ ǂ /i/
/a/ ǂ /i/ ǂ /u/
/e/ ǂ /i/ ǂ /a/
/e/ ǂ /i/ ǂ /e/
/e/ ǂ /i/ ǂ /o/
/e/ ǂ /e/ ǂ /i/
/e/ ǂ /i/ ǂ /u/

/o/ ⫩ /i/ ⫩ /a/
/o/ ⫩ /i/ ⫩ /e/
/o/ ⫩ /i/ ⫩ /o/
/o/ ⫩ /e/ ⫩ /i/
/o/ ⫩ /i/ ⫩ /u/
/i/ ⫩ /i/ ⫩ /a/
/i/ ⫩ /i/ ⫩ /e/
/i/ ⫩ /i/ ⫩ /o/
/i/ ⫩ /e/ ⫩ /i/
/i/ ⫩ /i/ ⫩ /u/
/u/ ⫩ /i/ ⫩ /a/
/u/ ⫩ /i/ ⫩ /e/
/u/ ⫩ /i/ ⫩ /o/
/u/ ⫩ /e/ ⫩ /i/
/u/ ⫩ /i/ ⫩ /u/[13]

6. Phonetic realizations of the phonemic components of 2MVN

/a/ + /a/ → [aa] (a)
/a/ + /e/ → [ae]
/a/ + /o/ → [ao]
/e/ + /a/ → [ea]
/e/ + /e/ → [ee]
/e/ + /o/ → [eo]
/o/ + /a/ → [oa]
/o/ + /e/ → [oe]
/o/ + /o/ → [oo]

/a/ + /i/ → [ai] (b1)
/e/ + /i/ → [ei]
/o/ + /i/ → [oi]
/a/ + /u/ → [au]
/e/ + /u/ → [eu]
/o/ + /u/ → [ou]

/i/ + /a/ → [ia] (b2)
/i/ + /e/ → [ie]

[13]These sequences are relatively uncommon, and therefore I have omitted for brevity's sake the two other possibilities of /a/ and {o} as second elements of these sequences. Note that /o/ {o} → /u/ before /o/; /i/ {i} → /e/ before /i/.

/i/ + /o/ → [io]
/u/ + /a/ → [ua]
/u/ + /e/ → [ue]
/u/ + /o/ → [uo]
/i/ + /u/ → [iu] (b3)
/u/ + /i/ → [ui]
/i/ + /á/ + /i/ → [iái̯] (b4)
/i/ + /é/ + /i/ → [iéi̯]
/u/ + /á/ + /i/ → [uái̯]
/u/ + /é/ + /i/ → [uéi̯]
/a/ + /í/ → [aí] (c)
/a/ + /ú/ → [aú]
/e/ + /í/ → [eí]
/e/ + /ú/ → [eú]
/o/ + /í/ → [oí]
/o/ + /ú/ → [oú]
/í/ + /a/ → [ía] (d)
/í/ + /e/ → [íe]
/í/ + /o/ → [ío]
/ú/ + /a/ → [úa]
/ú/ + /e/ → [úe]
/ú/ + /o/ → [úo]
/a/ # /a/ → [aa]
/a/ # /e/ → [ae] (e)
/a/ # /o/ → [ao]
/a/ # /i/ → [ai]
/a/ # /u/ → [au]
/e/ # /a/ → [ea]
/e/ # /e/ → [ee]
/e/ # /o/ → [eo]
/e/ # /i/ → [ei]
/e/ # /u/ → [eu]
/o/ # /a/ → [oa]
/o/ # /e/ → [oe]
/o/ # /o/ → [oo]
/o/ # /i/ → [oi]
/o/ # /u/ → [ou]
/i/ # /a/ → [ia]
/i/ # /e/ → [ie]

/i/ ‡ /o/ → [io]
/i/ ‡ /i/ → [ii]
/i/ ‡ /u/ → [iu]
/u/ ‡ /a/ → [ua]
/u/ ‡ /e/ → [ue]
/u/ ‡ /o/ → [uo]
/u/ ‡ /i/ → [ui]
/u/ ‡ /u/ → [uu]

/a/ ‡ /i/ ‡ /a/ → [a i̯ a] (f)
/a/ ‡ /i/ ‡ /e/ → [a i̯ e]
/a/ ‡ /i/ ‡ /o/ → [a i̯ o]
/a/ ‡ /e/ ‡ /i/ → [ae i̯]
/a/ ‡ /i/ ‡ /u/ → [a i̯ u]
/e/ ‡ /i/ ‡ /a/ → [e i̯ a]
/e/ ‡ /i/ ‡ /e/ → [e i̯ e]
/e/ ‡ /i/ ‡ /o/ → [e i̯ o]
/e/ ‡ /e/ ‡ /i/ → [ei]
/e/ ‡ /i/ ‡ /u/ → [e i̯ u]
/o/ ‡ /i/ ‡ /a/ → [o i̯ a]
/o/ ‡ /i/ ‡ /e/ → [o i̯ e]
/o/ ‡ /i/ ‡ /o/ → [o i̯ o]
/o/ ‡ /e/ ‡ /i/ → [oe i̯]
/o/ ‡ /i/ ‡ /u/ → [o i̯ u]
/i/ ‡ /i/ ‡ /a/ → [ia]
/i/ ‡ /i/ ‡ /e/ → [ie]
/i/ ‡ /i/ ‡ /o/ → [io]
/i/ ‡ /e/ ‡ /i/ → [ie i̯]
/i/ ‡ /i/ ‡ /u/ → [iu]
/u/ ‡ /i/ ‡ /a/ → [u i̯ a]
/u/ ‡ /i/ ‡ /e/ → [u i̯ e]
/u/ ‡ /i/ ‡ /o/ → [u i̯ o]
/u/ ‡ /e/ ‡ /i/ → [ue i̯]
/u/ ‡ /i/ ‡ /u/ → [u i̯ u][14]

With the foregoing sets of rules, it is possible to evaluate a line of Spanish poetry towards deriving the metric vocalic nuclei determined by the particular meter in which the poem is written, the phonemic

[14]These sequences may be further reduced to one MVN by the application of preceding rules.

composition of each nuclei, and, finally, the actual phonetic shape of each nuclei as determined by the particular syllable reductions, or av idance thereof, observed by the poet in meeting the particular requirements imposed by the meter he has chosen for his composition. Aside from any practical virtues of this description of Spanish metrics in terms of sequences of ordered phonologic rules, a major theoretical implication, as has been pointed out above, is to be found in the way in which the rules of set three (sections three and six above) demonstrate graphically the manner in which Spanish metric phonology may depart ignificantly from principles of contemporary Spanish colloquial phonology[15].

7. An appendix of examples.

A. o contiguous vowel sequences.

Ángeles con grandes alas (romance, 8MVN)

1.	Án	MVN→ V → /á/ → [á]
2.	ge	MVN → V → /e/ → [e]
3.	les	MVN → V → /e/ → [e]
4.	con	MVN → V → /o/ → [o]
5.	gran	MVN → V → /á/ → [á]
6.	des	MVN → V → /e/ → [e]
7.	a	MVN → V → /á/ → [á]
8.	las	MVN → V → /a/ → [a][16]

B. *Sinalefa* (3 and 5)

después de haberlo usado (heptasilábico, 7MVN)

1.	des	MVN → V → /e/ → [e]
2.	pués	MVN → V_H + V_X → /u/ + /é/ → [u̯é]
3.	de ha	MVN → V_N # V_N → /e/ + /a/ → [i̯a]

[15]One important aspect which this paper does not treat concerns the internal stress patterns of a line of poetry. More than just the sum of the phonemic stresses of the words in a particular verse, metric stress is a complex interaction of several levels of stress and constitutes an important topic for further investigation.

[16]For arbitrary practical reasons, the division of syllables here respects word boundaries and does not represent the normal "liaison" of the spoken word.

4.	ber	MVN → V → /é/ → [é]
5.	lo u	MVN → V_N ⫫ V_N → /o/ + /u/ → [o̯u̯]
6.	sa	MVN → V → /á/ → [á]
7.	do	MVN → V → /o/ → [o]

C. *Hiato* (2-3)

Una ola tras otra bramadora (*hendecasilábico,* 11MVN)

1.	u	MVN → V → /ú/ → [ú]
2-3.	na o	MVN → V_N -h- V_N → /a/ ⫫ /ó/ → [aó]
4.	la	MVN → V → /a/ → [a]
5.	tras	MVN → V → /a/ → [a]
6.	o	MVN → V → /ó/ → [ó]
7.	tra	MVN → V → /a/ → [a]
8.	bra	MVN → V → /a/ → [a]
9.	ma	MVN → V → /a/ → [a]
10.	do	MVN → V → /ó/ → [ó]
11.	ra	MVN → V → /a/ → [a]

D. *Sinéresis* (2)

¡Héroes sin redención y sin historia! (*hendecasilábico,* 11MVN)

1.	¡Hé	MVN → V → /é/ → [é]
2.	roes	MVN → V_X + V_X → /o/ + /e/ → [u̯e]
3.	sin	MVN → V → /i/ → [i]
4.	re	MVN → V → /e/ → [e]
5.	den	MVN → V → /e/ → [e]
6.	ción	MVN → V_H + V_X → /i/ + /ó/ → [i̯ó]
7.	y	MVN → V → /i/ → [i]
8.	sin	MVN → V → /i/ → [i]
9.	his	MVN → V → /i/ → [i]
10.	to	MVN → V → /ó/ → [ó]
11.	ria	MVN → V_H + V_X → /i/ + /a/ → [i̯a]

E. *Diéresis* (9-10)

Al soplo de los céfiros suave (*hendecasilábico,* IIMVN)

1.	Al	MVN → V → /a/ → [a]
2.	so	MVN → V → /ó/ → [ó]

3.	plo	MVN → V → /o/ → [o]
4.	de	MVN → V → /e/ → [e]
5.	los	MVN → V → /o/ → [o]
6.	cé	MVN → V → /é/ → [é]
7.	fi	MVN → V → /i/ → [i]
8.	ros	MVN → V → /o/ → [o]
9-10.	süa	$2MVN \rightarrow V_H$ -d- $V_x \rightarrow$ /u/ + /á/ → [uá]
11.	ve	MVN → V → /e/ → [e]

In the foregoing examples, B2, B3, B5, D2 and D6 yield metric vocalic nuclei different from those produced by normal rules of colloquial Spanish phonology, whereby two contiguous vowels constitute two separate syllables. Examples C2-3 and E9-10 preserve the autonomy of two contiguous vowels as two separate syllables which have, in fact, a metric value as two syllables. It is significant to observe, in terms of my point concerning basic differences between Spanish colloquial phonology and Spanish metric phonology, that the former examples are considered "regular" from a metric point of view and that the latter examples reflecting the colloquial phonology are "irregular" from the same point of view.

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