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## LINGUIST List 22.2332

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### Disc: Error in the Fernandez Huerta Readability Formula

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#### Message 1: Error in the Fernandez Huerta Readability Formula

Date: 27-May-2011

From: Gwillim Law <glaw@measinc.com>

Subject: Error in the Fernandez Huerta Readability Formula



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José Fernández Huerta published his formula for calculating the readability of text in Spanish in 1959. It is still widely used. I found six web pages that contain the actual formula, and many more where it is cited. I have two strong reasons for believing that the formula contains an error. I would be interested in getting additional feedback on the matter. Also, if there is a consensus that the formula does contain an error, where would I go to report it?

The Huerta score\* was an adaptation of the Flesch Reading Ease score into Spanish. The Flesch formula for English text, first published in 1948, is:

Flesch =  $206.835 - 84.6 * \text{syllables/words} - 1.015 * \text{words/sentences}$

Scores run roughly from 30 to 100, with higher scores being easier to read. This makes sense. Sentences with more words in them will produce a lower score; words with more syllables in them will produce a lower score.

The Huerta formula is usually presented as  $206.84 - (0.60 * P) - (1.02 * F)$ , where P = number of syllables and F = number of sentences, as counted

in a sample containing 100 words. Applying the same sanity check, we see that if the number of syllables per word increases, the score decreases, as expected; but if the number of sentences increases, the score also decreases. Now, if the number of sentences in a 100- word sample increases, each sentence must be getting shorter. That should make the readability of the passage increase, not decrease. (Reason 1.)

In its original form, the Huerta formula is not scalable. To compare it to the Flesch formula, one would have to convert it to a formula that works for a passage containing any number of words. When I do that, I come up with the formula

$$\text{Huerta} = 206.84 - 60 * \text{syllables/words} - 102 * \text{sentences/words}$$

Note that if words = 100, this works out the same as the original Huerta formula. Note also that it matches the Flesch formula almost term for term. The coefficients of (syllables/words) in the two formulas differ by about 40%, but that's understandable, because the average number of syllables in a Spanish word is greater than the corresponding ratio in English. It's the last term that looks wrong. The coefficients are very different (1.015 and 102), but that's because I converted the Huerta formula to make it scalable.

In its original form, the coefficient was 1.02. But the real difference is that the fraction is inverted. (Reason 2.) Since Fernández Huerta avowedly based his work on that of Flesch, it seems to me that the obvious conclusion is that he made a mistake. When he decided to stipulate a sample of 100 words, he got confused and didn't realize that he had inverted the fraction. Perhaps he tested his formula using a sample with 10 sentences, in which case the two formulas give the same result:  $1.02 * 10 = 102 * 10 / 100$ .

Gwillim Law

References:

Original publication of the Huerta formula:

Fernández Huerta, José. Medidas sencillas de lecturabilidad. Consigna 1959; (214): 29–32.

Some web pages describing or using the Huerta formula:

<http://www.ideosity.com/SEO/SEO-Readability-Tests.aspx>

<http://www.standards-schmandards.com/exhibits/rix/>

<http://www.utexas.edu/disability/ai/resource/readability/manual/huerta-calculate-English.html>

[http://scielo.isciii.es/scielo.php?script=sci\\_arttext&pid=S1135-57272002000400007&lng=en&nrm=iso](http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1135-57272002000400007&lng=en&nrm=iso)

<http://www.faculty.de.gcsu.edu/~cbader/5210/fryforeign.htm>

Linguistic Field(s): Applied Linguistics

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