Thermolinguistics and the Reading Difficulty of Texts

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T.V. Maslova (2010) hypothesized that there is a “critical point” where a reading passage crosses the threshold of having too many common words or too many rare words per total word count to be considered a literary text. She elaborated on this theory, making an analogy between the parts of a text and the physical properties of the thermodynamics of fluids, that is, Volume, Particles, Temperature, and Pressure; hence the term “Thermolinguistics.”

Measures of statistical reading difficulty using sentence length and word length, such as the Flesch index, fail to take into account the familiarity of words to the reader. This issue was addressed by Dale and Chall (1948), who proposed a list of 763 familiar words (later expanded to 3,000 words), in order to measure readability by qualitative data. Stenner’s Lexile Framework (2002) also utilizes a dual system of calculation (semantic and syntactic), but it is based on logarithmic expressions of sentence length and word frequency. Despite the commercial monopoly held by its developers, the Lexile Framework has become immensely popular among educators, librarians, publishers and book retailers in the U.S. However, words that may sound familiar to native speakers of English may not be familiar to learners in a foreign-language context, rendering a much lower “rare words” threshold. Fortunately, in Japan, “levels-based” word lists and dictionaries make possible a detailed lexical analysis of any reading passage. Using the “levels” of difficulty indicated in the Genius 4 dictionary, the authors have developed a more realistic, practical measure of reading difficulty for foreign language speakers in Japan. (24 power point slides: 30 分)

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