The Symbolic Implications of Vowels and of Their Orthographic Representations in Two Natural Languages

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Ninety-two Hebrew-speaking subjects judged the magnitude, brightness, and hardness symbolism of orthographic characters designating five vowel phonemes in Hindi and in Japanese. For both languages and all three symbolic dimensions, the figural symbolism of the orthographic characters was found to replicate very closely the sound symbolism of their phonemic referents. The ranking of the five vowel characters in order of increasing magnitude and decreasing brightness and hardness was as follows: i, e, a, u, o. The results were interpreted to suggest that sound patterns and visual patterns tend to carry cross-culturally consistent connotations, and that the symbolic implications of sounds have been embodied in the pattern of orthographic characters in natural languages.

INTRODUCTION

The idea of phonetic symbolism implies that sounds carry intrinsic symbolic connotations. In the first experimental study of this idea, Sapir (1929) found that CVC trigrams containing low vowels (e.g., mal) were judged to be more appropriate labels for large objects than CVC trigrams having the same initial and final consonants but containing a high vowel (e.g., mil). Newman (1933), who extended Sapir's work, found the size implications of vowels to vary

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from smallest to largest in the following order: \(i, e, a, u,\) and \(o.\) About the same ordering was also obtained by Birch and Erickson (1958) and by Johnson (1967), using somewhat different techniques.

Newman's further examination of the hypothesis that the size connotations of vowels are embodied in the words of English yielded little support. A reexamination of his data, however, led Taylor and Taylor (1965) and Johnson (1967) to conclude that low and high vowels are differently distributed among words indicating smallness and largeness. Johnson also found that in subject-produced "small" and "large" words the relative occurrence of the five vowels varied systematically from \(i\) to \(o\) in an order exactly consistent with their subjective size connotations.

Although the symbolic size implications of vowels have been the most consistently supported, reliable differences between vowel phonemes were obtained with regard to several other attributes (Bentley and Varon, 1933; Miron, 1961; Newman, 1933; Taylor and Taylor, 1962; Wicker, 1968b). Bentley and Varon (1933) found \(/a/\) sounds to be judged softer and less angular than \(/i/\) sounds, and Newman found the brightness implication of vowels to vary from \(/i/\) to \(/o/\) in the same order as their size implications. Somewhat similar results were obtained by Wissemann (1954). German-speaking subjects who were to invent or select names for different noise patterns agreed in using vowels to express the pitch and color tone of the noises, with \(/i/\) sounds expressing higher pitch and brighter color tone than \(/o/\) sounds.

There has been some disagreement as to the cross-cultural generality of the symbolic connotations of sounds (Brown, 1958; Langer and Rosenberg, 1966; Miron, 1961; Taylor and Taylor, 1962). More recently, Tanz (1971) has presented convincing evidence that in natural languages physical, temporal, and personal distance are conveyed through the contrast between high and low vowels. Thus words signifying "here" tend to contain the high front vowel \(/i/\) and words signifying "there" to contain low back vowels such as \(/a/\).

The purpose of the present study was to examine the possibility that the symbolic connotations of vowel phonemes are reflected in the orthographic representations of these phonemes in the writing systems of natural languages. For each of the two languages, Japanese and Hindi, the conventional orthographic characters designating five phonemes were presented to Hebrew-speaking Ss for pair comparisons with regard to each of the four dimensions of magnitude, brightness, hardness, and length. For each pair, subjects were to choose which character is more appropriate to represent a larger, brighter, softer, or longer object. Several studies have demonstrated considerable intersubject agreement in associating visual patterns with non-