

Vocal charades: An exploration of vocal iconicity

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Representative gestures are widely acknowledged to be grounded in meaning by virtue of their manual-visible form, which is naturally well suited for deixis and iconicity. In contrast, the vocal modality is often assumed to be extremely limited in its potential for deictic and iconic expression. As the linguist Charles Hockett once proposed, “When a representation of some four-dimensional hunk of life has to be compressed into the single dimension of speech, most iconicity is necessarily squeezed out. In one-dimensional projection, an elephant is indistinguishable from a woodshed. Speech performance is largely arbitrary” (1978: 274).

The present study examines Hockett’s assumption that speech is one dimensional and arbitrary “per force.” It explores the potential for people to produce iconically motivated vocalizations, particularly for meanings outside of the vocal-auditory modality. Fifteen pairs of undergraduate participants were audio-recorded as they played a game of “vocal” charades. The players took turns reading various words from flashcards and vocalizing the meaning to their blindfolded partner who attempted to guess the word. Crucially, players were only permitted to use the sound of their voice, and not gestures or words. Each player had to vocalize for 15 pairs of antonymic words that were written on index cards and shuffled into a stack. Players alternated vocalizer and guesser roles after each block of five words. The main goal of the analysis was to determine whether participants demonstrated consistent intuitions for how to produce vocalizations related to the various meanings they were expressing.

The 30 word pairs included: *alive/dead*, *antagonistic/friendly*, *attractive/ugly*, *bad/good*, *big/small*, *bright/dark*, *cold/hot*, *difficult/easy*, *down/up*, *dry/wet*, *dull/sharp*, *fast/slow*, *female/male*, *few/many*, *hard/soft*, *heavy/light (weight)*, *here/there*, *last year/next year*, *lift up/set down*, *long/short*, *new/old*, *no/yes*, *now/later*, *nutritious/poisonous*, *predator/prey*, *predictable/surprising*, *rough/smooth*, *start/stop*, *straight/to the side*, and *strong/weak*. Vocalizations were analyzed according to seven acoustic variables: *mean pitch*, *maximum pitch change*, *absolute maximum pitch change*, *duration*, *intensity*, *harmonics-to-noise ratio*, and *repetition rate*. Within-subject paired t-tests were used to compare the words within each antonymic pair for each variable, and a Bonferroni correction was applied to account for the number of variables tested for each pair.

Overall the analysis found significant differences within twenty of the thirty word pairs ($p < .05$ after correction, see bolded pairs above). Each of the seven variables was significantly different within at least one word pair, and twelve unique combinations of variables were found among the twenty significant pairs. These findings suggest that the vocal modality has more potential for iconicity than is commonly realized. Hockett refers to the single dimension of the spoken modality, yet the results indicate that gestures of the vocal tract can make use of multiple acoustic dimensions for iconic expression. Discussion will consider the findings with respect to a theory of how languages, both spoken and signed, originate and develop through the ongoing creation of motivated gestures.