

## **Infant-directed vowels are easier to learn for a computer model**

When addressing infants, caretakers use a special register, called "motherese" or "parentese." The formant patterns of centers of vowels in this register are farther apart than those in adult-directed speech. It has been postulated that this helps children learn the categories of speech sounds of their language. In this study, this hypothesis was tested with a computer model. Three words were used: sock, shoe and sheep. Recordings of these words were available from ten mothers in both infant-directed and adult-directed registers.

The first two formants were extracted from the voiced parts of each word. Automatic formant extraction often results in formant patterns with errors, but no attempt was made to correct them. Such errors are no problem as long as they are the same for both registers.

After formant extraction, their distribution compared and a mixture of three Gaussians was fitted to the data points. It was found that the infant-directed tokens not only used a larger part of the acoustic space, but also resulted in a better distribution of the centers of the Gaussians, indicating better patterning of the input. Better patterning makes of the input makes it easier to learn the categories of speech sounds.

de Boer, B. G. & Kuhl, P. K. (2001) Infant-directed vowels are easier to learn for a computer model, *Journal of the Acoustical Society of America*, **110**(5 pt 2 ) p. 2703