

A DEVELOPMENTAL PERSPECTIVE ON LANGUAGE ORIGIN: CHILDREN ARE OLD HANDS AT GESTURE

CASEY J. LISTER

*School of Psychology, University of Western Australia,
35 Stirling Highway, Crawley, Western Australia 6009
casey.lister@research.uwa.edu.au*

TIARN BURTENSHAW, NICOLAS FAY, BRADLEY WALKER, JENEVA OHAN

*School of Psychology, University of Western Australia,
35 Stirling Highway, Crawley, Western Australia 6009
21282388@student.uwa.edu.au, nicolas.fay@gmail.com, bradley.walker@uwa.edu.au,
jenava.ohan@uwa.edu.au*

The capacity for language is a distinguishing feature of our species. A problem for those studying its origin is that our pre-linguistic ancestors, who used language in its earliest forms, no longer exist. Instead, we must draw conclusions based on studies of modern humans with fully fledged languages. This makes it difficult to assess the impact of culture and convention on the creation of novel sign systems. The current study addresses this issue through a referential communication task that examines how participants aged 6-12 years create novel sign systems using gestures or vocalisations (sounds that are not words). As children have less developed linguistic systems, and less exposure to conventionalised signs, they offer a new perspective on how people create novel sign systems when prevented from using their pre-existing language.

1.Method

Fifty-four children were recruited from three age groups (6-7, 8-9 & 10-12 years). Each child was presented with two lists of 18 concepts (6 Nouns, 6 Verbs and 6 Adjectives). They communicated the concepts in one list using gestures, and in the other, using vocalisations. The children were filmed and the signs they created were played back to adult participants (N = 36) who attempted to guess the meaning of each sign. A coder also gave each sign an iconicity rating based on the degree to which it resembled its referent. Signs were rated on a 7-point scale (0 = no iconicity, 6 = high iconicity). Fay, Arbib and Garrod (2013) and Fay, Lister, Ellison and Goldin-Meadow (2014) suggested that communication through gesture is more effective than through vocalisation because gesturing enables the creation of more highly iconic signs. By rating the iconicity of each sign, we were able to experimentally test this hypothesis using participants with a less established conventionalised language system.

2.Results & Discussion

As Figure 1 shows, Identification Accuracy (i.e. the proportion of signs that were correctly identified by the adult participants), and Iconicity were both greater in the gesture condition compared to the vocal condition. Adults were also better able to identify the signs produced by older children, compared to younger children. This suggests that with age, children become increasingly adept at producing understandable signs. The positive correlation between Identification Accuracy and Iconicity confirms that greater iconicity is associated with improved comprehension. Previously the effect of sign iconicity upon identification success had been purely speculative.

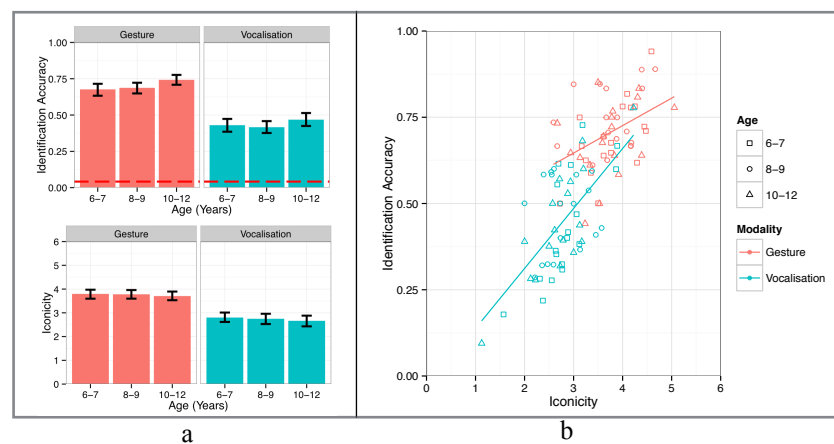


Figure 1. Comparison between Identification Accuracy (red line represents accuracy level predicted by chance) and Iconicity in each modality, across age groups (a) and correlation between Identification Accuracy and Iconicity (b).

This study supports the suggestion that gesturing enables the production of more iconic, better understood signs. Moreover, we have demonstrated that this relationship exists among younger participants who possess a smaller repertoire of conventionalised gestures and vocalisations, thereby reducing the impact of culture and convention upon the creation of a novel communication system.

References

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