Baby sign, mind-mindedness and language development
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A copy of the poster is available from ResearchGate.

Highlights
• Infants participating in baby sign do not use more gestures than those who do not participate, nor is their vocabulary development any faster.
• Baby-signing mothers respond similarly to non-signing mothers, although they do produce more internal state terms in their responses to infant gestures.

Methods
• Participants drawn from the Language 0-5 Project – a longitudinal project following the language and communicative development of children from the Merseyside area of North West England over the first 5 years of life. A subset of 46 children was chosen, half of whom participated in baby sign.
• Participants filmed at 11 and 12 months interacting with their mothers in two tasks (e.g. Cameron-Faulkner et al., 2015), which were video-recorded and coded offline:
  - Task 1: looking at interesting objects on display boards (5 minutes at each age; Figure 1), designed to elicit pointing and reaching gestures.
  - Task 2: play session (2x 9-minute sessions at each age), designed to elicit object extension gestures (e.g. showing, giving).
• Vocabulary measured at 11 and 18 months of age (CDI).
• Sessions coded using ELAN:
  - Following Olson and Masur (2011), infants’ gestures coded for points, reaches and object extensions (Figure 2).
  - Mothers’ verbal responses to gesture use coded to gestures transcribed and coded for content (also following O&M, 2011). Categories were: object label (duck), action term (shoek), internal state term (see, want) and non-label (wow, good girl).
• Internal state terms coded for the following sub-categories: perception (see, touch), volition (want, need), cognition (think, know) and disposition (like, happy).

Results
1. Number of gestures (points, reaches or object extensions) produced by infants:
   • Tests show no difference between baby sign and control groups, either overall (baby sign M = 81.00, control M = 63.57; r = 1.53, p = 0.13) or for individual gesture types.
   • t-test also shows no difference in number of contingent responses (r = 1.57, p = 0.12).
2. Internal state responses to infant gestures (points, reaches or object extensions):
   • Mixed model shows no difference between baby-signing and non-signing mothers in proportion of contingent responses (β = 0.11, p = 0.63). Figure 3.
   • Significant group by gesture type interaction shows baby-signing mothers more likely than non-signing mothers to respond object extension gestures with a volition term (F = 4.0).

Discussion
• Baby-signing infants did not produce more pointing, reaching or object extension gestures than infants who had not participated.
• Baby-signing mothers responded to gestures similarly to non-signing mothers; nevertheless, some differences were found:
  - Baby-signing mothers used more internal state terms in response to infants’ gestures (although the proportion of these responses did not differ from non-signing mothers).
  - Baby-signing mothers were significantly more likely to respond to gestures, particularly object extensions, using volitional terms.
  - Together, these results suggest that baby-signing mothers are more likely to see their infants as volitional agents (e.g. Slaughter et al., 2009) and may be more ‘mind-minded’.
• Lack of relationship between gesture use and vocabulary development may seem surprising given the findings of previous papers (e.g. Iversen & Goldin-Meadow, 2000). However, these studies do not usually control for the infants’ initial vocabulary levels, as we have done.
  - Possible that gesture development does not precede vocabulary development but that both reflect a general communicative ability; children who use gestures more, and earlier, also learn vocabulary more quickly, but this is not caused by their gesture use.
• Lack of relationship between baby sign and language development is in line with several previous studies (e.g. Kirk et al., 2012; Zammit & Atkinson, 2015).
  - Mounting evidence against claims made by companies promoting baby sign that participation improves language development, at least in typically-developing children.

Acknowledgements
Samantha Durrant, Michelle Peter, Julian Pine and Caroline Rowland are, respectively, Research Associates (2) and Professors (1) in the ESRC International Centre for Language and Communicative Development (LuCiD) at the University of Liverpool. The support of the Economic and Social Research Council (ES/L008955/1) is gratefully acknowledged. We would also like to thank the students and research assistants who have helped with the coding, and the Language 0-5 families for their ongoing participation.

References