

The effect of age on the composition of the first 10 words produced: Evidence from the UK-CDI

J. Just*, K. Alcock#, K. Meints*, C. Rowland *

*University of Lincoln, #University of Lancaster and ✉University of Liverpool



INTRODUCTION

- Children's first words have typically been investigated in terms of early comprehension usually using Preferential Looking Paradigms (e.g. Tincoff & Jusczyk, 2012; Szyrnok, 2008)
- **A noun bias** has been shown in children's first words
- Other studies investigating children's early production of words found that **words spoken in their environment** make up their early vocabulary (see Tardif et al., 2008)
- While early production data exist for US-English, no representative data exists for UK-English children
- Furthermore, only few studies have investigated the effect of age on the composition of children's first word production (e.g. Szyrnok, 2008)
- If children approach language with a **noun bias**, the age of first word production **should not impact** the **composition** of those words
- However, if the first words reflect the **most common words** in the input, we might expect younger and older children to **learn different words** due to different environmental factors, e.g. a shift in mobility and feeding practices
- A new UK-wide parent report instrument (UK-CDI) is used to compare the **composition of the first 10 words** in children who reached up to 10 words at **8-10 months** of age with those who reached up to 10 words at **16-18 months** (Alcock et al., in prep)

DESIGN & METHODS

Participants:

- Participants were recruited in person (e.g. Children's Centres, Community groups, libraries) and online (via social media, email etc.)
- As part of the standardisation process of the UK-CDI more than 1700 UK parents of children between 8 and 18 months old participated
- For the purpose of the current study, questionnaires were selected of children who reached a productive vocabulary of 10 words or less between **8-10 months (N=120)** and **16-18 months (N=25)**

Criteria for participation:

- A productive vocabulary of 10 words or less
- Monolingual English children
- Full-term
- No family history of speech and language problems

Materials:

The UK-CDI is a newly developed and UK-standardised adaptation of the original US American MacArthur CDI (Fenson et al., 1994)

It consists of two questionnaires:

- **UK-CDI (WG): Checklist of words (e.g. sounds, animals) and gestures (e.g. first communicative gestures, actions with objects)**
- **Family Questionnaire: Family background information (e.g. child's health, SES information)**

Procedure:

- Completion of UK-CDI once via post or online depending on participants' preference (a validation study showed that results were not affected by the means of completion)
- After completion, parents returned the paper version via prepaid post; the online version was automatically saved via the online survey tool (Survey Monkey)
- As a 'thank you', participants received a personalised laminated word-cloud or a £5 supermarket voucher

RESULTS

- Mann-Whitney U Tests were conducted with the two age groups (8-10 months, 16-18 months) and the five most common categories (sounds, food, routines, people, animal words)

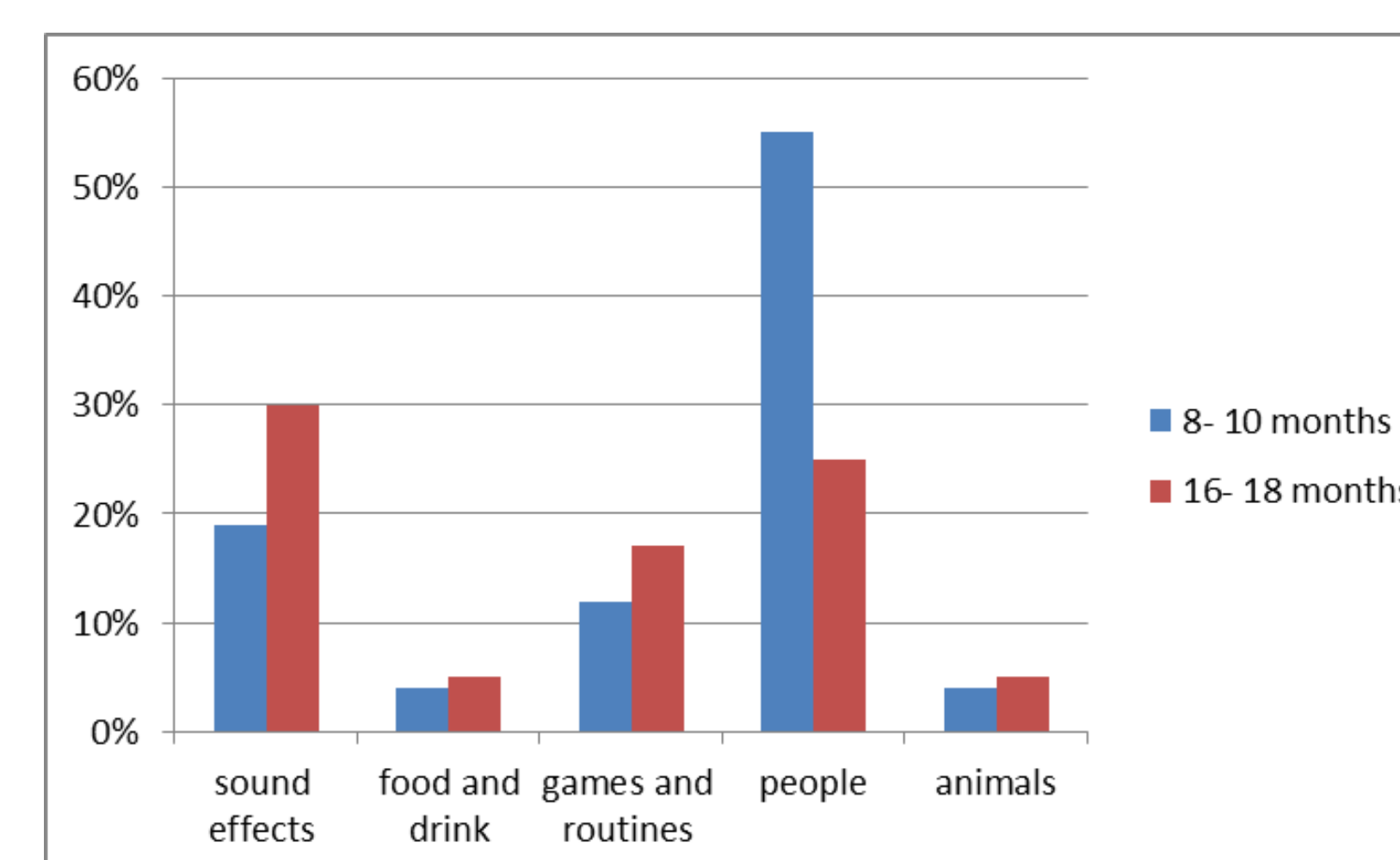
Sound effects: 8-10-month-olds (Md=.0, n=120) and 16-18-month-olds (Md=.25, n=25), U=1053, z=-2.59, p=.01, r=0.22

Food and drink: 8-10-month-olds (Md=.0, n=120) and 16-18-month-olds (Md=.0, n=25), U=1179, z=-3.17, p=.002, r=0.26

Games and routines: 8-10-month-olds (Md=.0, n=120) and 16-18-month-olds (Md=.0, n=25), U=1356, z=-.84, p=.40, r=0.07

People: 8-10-month-olds (Md=.56, n=120) and 16-18-month-olds (Md=.25, n=25), U=808, z=-3.66, p<.000, r=0.3

Animals: 8-10-month-olds (Md=.0, n=120) and 16-18-month-olds (Md=.0, n=25), U=1354, z=-1.10, p=.27, r=0.02



- Children show more than just nouns!

They also show words for:

- sounds effects
- games & routines

Nouns: **79%** for 8-10-month-olds vs **42%** for 16-18-month-olds, **p=.001**

- 16-18-month-olds use words that **span more categories** (words out of 13 different categories) in comparison to the 8-10-month-olds (words out of 12 categories)
- 16-18-month-olds also produce significantly **more food and drink words** which can be explained by more exposure to different foods in the second year of life

DISCUSSION

- The results suggest that the **early environment** plays a **substantial role** in the composition of the early lexicon within, as well as between, languages
- The increase of more social communication (e.g. sounds, games and routines) in the older group could be due to **advances in social cognition** from 14-months old as described by Bergelson & Swingley (2013) when studying language comprehension
- Future research should look at a bigger sample of the 16-18-month-old age group and a follow-up would be useful in order to investigate possible implications

References:

- Alcock, K.J., Meints, K., Rowland, C. F., Christopher, A. Just, J. & Brelsford, V. (in prep). The UK Communicative Development Inventory: Words and Gestures.
- Bergelson, E., & Swingley, D. (2013). The acquisition of abstract words by young infants. *Cognition*, 127(3), 391-397.
- Fenson, L., Dale, P. S., Reznick, J. S., Bates, E., Thal, D. J., & Pethick, S. J. (1994). In Bronson W. C. (Ed.), *Variability in early communicative development*. Chicago, Illinois: The University of Chicago Press.
- Szyrnok, C. J. (n.d). *An investigation of intermodal preferential looking as a measure of language comprehension*. Lincoln University of Lincoln 2008.
- Tardif, T., Fletcher, P., Liang, W.L., Zhang, Z.X., Kaciroti, N., Marchman, V.A. (2008). Baby's First 10 Words. *Developmental Psychology*, 44(4), 929-938.
- Tincoff, R., & Jusczyk, P. W. (2012). Six-Month-Olds Comprehend Words That Refer to Parts of the Body. *Infancy*, 17(4), 432-444. doi:10.1111/j.1532-7078.2011.00084.x

ACKNOWLEDGEMENTS

The UK-CDI project is funded by the Economic and Social Research Council. The support of the ESRC [ES/J007692/1] is gratefully acknowledged. Caroline Rowland and Katie Alcock are members of the ESRC International Centre for Language and Communicative Development (LuCiD) at Liverpool and Lancaster Universities. The support of the Economic and Social Research Council [ES/L008955/1] is gratefully acknowledged.