13th May 2023

Dear Editor,

Please find enclosed the manuscript “Phonological Networks and Systematicity in Early Lexical Acquisition”*,* submitted for consideration in *Cognition*. Drawing on naturalistic home-recorded data from nine infants acquiring two languages, this work shows an inherent systematicity in the way that infants acquire and produce their early vocabulary, from first word production up to 30 months of age. Systematicity has been shown to support language development in previous studies (e.g. Waterson, 1971; Vihman, 2015), but these have typically been limited to case studies or small samples, and often draw on descriptive or qualitative analyses. To expand on this initial body of work, this paper presents a novel approach to the study of early phonological productions using network analysis. This approach has been used in previous work to test lexical acquisition from a semantic and phonological perspective (Fourtassi et al., 2020; Hills et al., 2009); this study builds on this work in two crucial ways: first, by drawing on naturalistic data, rather than vocabulary norms, to track word-by-word acquisition across a sample of infants; and second, by looking at the way infants *produce* these words rather than only the target phonological form. Previous research has typically observed that the *target* phonological properties of infants’ early-acquired words are distributed similarly to the properties of the input – this is not surprising when only the target forms are being considered. **Here I show, for the first time, that the way infants produce new words is similar to how they produce *existing words in their lexicon*. This suggests that infants draw on what they know in early word production, using already-familiar segments and structures to ease up the challenges of memory, planning and articulation.**

By considering the individual development trajectories of nine infants’ acquisition, this work shows how individual differences in early production need to be taken into account, in order to understand how infants go about dealing with the challenges of early word learning and production. It also presents, for the first time, a way of analysing infants’ early productions on a larger and quantitative scale, expanding existing network analysis research to the realities of infants’ early word production. This method could be extended to other languages and even larger datasets: the manuscript provides links to all the code that generated this manuscript on OSF, creating an important resource for the community to extend this work.

As the sole author, I would be happy to field any queries about this submission. I can confirm that this study complies with all ethical standards required for publication in *Cognition*. I further confirm that this manuscript has not been published elsewhere and is not under consideration by another journal. I believe this paper will be of great interest to *Cognition*’s readership, as it spans cognitive psychology, network science, and developmental linguistics, and makes both empirical and theoretical contributions to these domains.

Yours sincerely,

Catherine Laing