

Beyond Babble: Investigating Predictors of Toddler Intelligibility in adults and children

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Very few studies have examined how listeners process children's spoken utterances. But recent work has shown that both adults and children find adults easier to understand than toddlers (Yu et al., 2023). This has been taken as evidence for a disconnect between children's productions and their underlying representations of the phonological forms of words (Cooper, 2018). But what makes some toddlers more intelligible than others? We investigate three predictions regarding toddler intelligibility: 1) Children with larger vocabularies should be easier to understand, as these children may be more linguistically advanced (Kehoe et al., 2018), 2) Girls should be easier to understand, as girls tend to develop more advanced language skills earlier than boys (Adani & Ceganec, 2019), 3) Children and adults should find the same toddlers easy to understand, because children's representations of words are thought to be of the adult form (Cooper, 2018). Here, we investigate these predictions by using an eye-tracking procedure to test adults' (n=49) and 2.5 year olds' (n=48) abilities to understand words produced by typically developing English-learning toddlers with no reported speech and language delays. Stimuli for the current study included recorded utterances of 32 words produced by a set of typically developing children (n=28) at 2.5 years old. The results of our well-powered study provided no support for our key predictions. As expected, adults outperformed children in our eye-tracking tasks. But the vocabulary size of the toddler speaker did not predict how intelligible they are to adults or their age-matched peers; neither did the gender. Further, adults and children did not find the same toddlers intelligible. These surprising findings leave many questions unanswered regarding how perception and production are linked during development, and how we might predict which toddlers will be most intelligible, and what this means for subsequent development.