# Language Mixing Patterns in Multilingual Homes: Evidence from Daylong Recordings

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Research exploring language input in multilingual environments show that infants experience language switching not only during short free-play sessions (Bail et al., 2015) but also in naturalistic settings captured through daylong audio recordings (Kremin et al., 2022). While studies in monolingual settings reveal variability in language input throughout the day, often associated with daily activity patterns (Casillas et al., 2020; Soderstorm & Wittebolle, 2013), understanding such variation in multilingual homes, including features like language mixing, remains limited. This study explores time-of-day (morning, afternoon, evening) effects on language mixing in 23 multilingual families raising 6-20 month old infants in London. Families audio-recorded two days at home, and we annotated 60 minutes (12 x 5-minute segments) per family. Infants experienced an average of 17.47 minutes of speech per hour (Median = 16.36, Range = 9.72 - 37.38). Language mixing instances, defined as switches between languages within and across utterances and speakers, were quantified using a language switching proportion score calculated as the number of switches per 5-minute segment out of the number of language switching opportunities (total utterances - 1). We fitted a mixed-effects linear regression model to predict the language switching proportion, from time-of-day, number of speakers, and child age. The presence of two speakers (instead of 1) significantly increased language mixing ($\beta = 7.02$, SE = 2.67, $t = 2.62$, $p = .009$) along with infants' age ($\beta = 0.02$, SE = 0.01, $t = 2.140$, $p = .04$), but time-of-day did not ($p > .3$; though note individual differences between families, Figure 1). Future analyses will explore speaker specific code-switches (inter- and intra-sentential) and differentiate child-directed from other-directed language mixing. We will also examine if the time-of-day effect depends on the activity the child is engaged with. In summary, these findings imply a need to reassess language mixing estimation approaches in multilingual contexts.