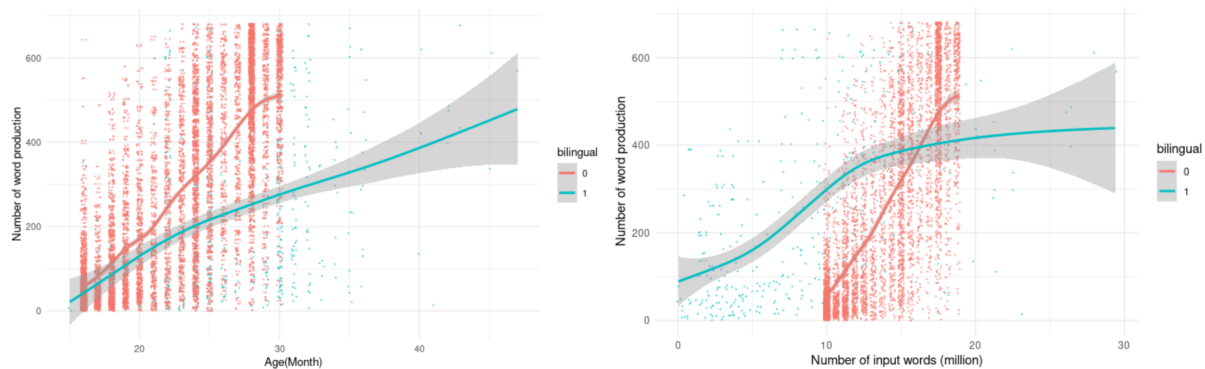


# Quantifying the bilingual (dis)advantage in vocabulary acquisition

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It appears that simultaneous bilinguals must require fewer encounters with a word than monolinguals do: they receive approximately half the input as monolinguals but don't have half the vocabulary. We quantified this observation by combining corpus data with WordBank monolingual acquisition data (N=11040) to estimate how many exposures monolingual children need to acquire each word in the CDI. If bilingual children learn at the same rate, they should lag years behind their monolingual peers, which is not the case. However, when measured as a function of the amount of input (estimated from parent report), bilinguals have a massive head-start. Subset analysis shows that this effect is particularly pronounced for action words. We discuss how these quantitative comparisons inform theory. To better quantify exactly how much they lag behind, we combined English CDI data (N=646) from 4 languages in 5 prior bilingualism studies (to be published in WordBank) and compared them to monolingual data. As expected, bilinguals learned English vocabulary more slowly than monolinguals as a function of age (Figure, left), an effect that only grew with time.



*Figure.* Estimated vocabulary for monolinguals (red) and bilinguals (teal) as a function of age (left) and estimated English input (right).