**Supplemental Information**

***Exploratory Analyses of Lexical Categories***

To provide a more complete characterization of the vocabularies of our sample, we explored vocabulary composition in terms of lexical categories. We examined the *proportion* of words known in each lexical category, coded as noun, verb, adjective, function word, and other (e.g., time words). The MBCDI sections were used to group words into five lexical categories: nouns (Sections 2-12 of the MBCDI), adjectives (Section 15), verbs (Section 14 and 21), function words (Sections 17-20 and 22), and “other” words (including sound effects, Section 1; games and routines, Section 13; and time words, Section 16). These classifications are similar to previous work examining children’s vocabulary knowledge across the sections on the MBCDI (Borovsky et al., 2021; Ellis Weismer et al., 2011; Haebig et al., 2021; MacRoy-Higgins et al., 2016).

**Differences in Late Talker Outcomes.** First, we performed a chi-square analysis comparing the number of words said by each group in each lexical class and found significant group differences, *X2*(8) *=* 815.32*, p <* .00001.

Next, we conducted separate multiple regression analyses to examine specific differences in vocabulary composition across groups. We looked for potential differences in the log10 transformed proportion of words in each lexical category in children’s Time 1 vocabulary, comparing across groups (Typical Talkers, Persisting Late Talkers, Late Bloomers) and including sex as a covariate. Model results are presented in Table S1 and Figure S1. Both Typical Talkers (*M*noun *=* .61, *SD*noun = .11) and Late Bloomers (*M*noun *=* .53, *SD*noun = .20) had significantly higher proportions of nouns in their Time 1 vocabularies than Persisting Late Talkers (*M*noun *=* .49, *SD*noun = .23). Typical Talkers had higher proportions of adjectives (*M*adjective *=* .04, *SD*adjective = .03) and verbs (*M*verb *=* .05, *SD*verb = .05) than Persisting Late Talkers (*M*adjective *=* .02, *SD*adjective = .04; *M*verb *=* .02, *SD*verb = .05), and Late Bloomers (*M*adjective *=* .02, *SD*adjective = .04; *M*verb *=* .02, *SD*verb = .04), who did not differ from Persisting Late Talkers. Persisting Late Talkers (*M*other *=* .42, *SD*other = .23) had a significantly *higher* proportion of “other” words in their Time 1 vocabularies than Typical Talkers (*M*other *=* .24, *SD*other = .12), but did not differ from Late Bloomers (*M*other *=* .39, *SD*other = .20). Finally, Typical Talkers (*M*function *=* .06, *SD*function = .05), had significantly higher proportions of function words in their Time 1 vocabularies than Late Bloomers *M*function *=* .05, *SD*functions = .09) and Persisting Late Talkers *M*function *=* .05, *SD*function = .09). Sex was not significantly associated with differences in any lexical category.

**Differences across Diagnostic Groups*.*** First, we performed a chi-square analysis comparing the number of words said by each diagnostic group in lexical class and found significant group differences, *X2*(8) *=* 62.65*, p <* .00001.We also explored the proportion of words in each lexical category produced by children in each diagnostic group. Using separate multiple regression models, we compared the log10 transformed proportion of words in each lexical category in children’s Time 1 vocabulary based on their diagnosis group years later (DLD, Other Diagnosis, No Diagnosis) and sex. Model results are presented in Table S2 and Figure S2. Children with DLD did not differ significantly from the other groups in the proportion of words from any lexical category that they said at Time 1.

**Discussion**

Similar to previous work (Horvath et al., 2019; Jiménez et al., 2021; MacRoy-Higgins et al., 2016), these exploratory analyses revealed differences between late talkers and typical talkers in the proportion of words produced in different lexical classes. In particular, we found that Persisting Late Talkers had smaller proportions of nouns, verbs, and adjectives than Typical Talkers and smaller proportions of verbs and adjectives than Late Bloomers. Although previous results are mixed with respect to differences in the proportion of adjectives and verbs–with for example, MacRoy-Higgins and colleagues (2016) also finding a difference and Horvath and colleagues (2019) not–the difference we found in nouns has been consistently found in a variety of previous work (Ellis Weismer, 2007; Weber & Colunga, 2021). This suggests understanding noun vocabularies—either with respect to the proportion of the total vocabulary occupied by nouns, or with respect to the composition of particular nouns as in our analyses in the main text—may be especially important for generating insights into developmental differences in late talkers.

Finally, our finding that Persisting Late Talkers produced a higher proportion of words falling into the “other” category than their peers is also consistent with previous work (e.g., MacRoy-Higgins et al., 2016). Other words primarily consisted of sound effect words (i.e., onomatopoeia) and names of games and routines. One possible explanation for the increase in “other words”, is that these words may lend themselves to being more easily learned by Persisting Late Talkers than nouns and verbs because these words are more embedded in context-dependent communication routines (see also Jimenez & Hills, 2017) that might facilitate memory of word-meaning mappings.

Importantly, these exploratory analyses revealed few lexical classes that reliably differentiated Late Bloomers from Persisting Late Talkers, and although there were general group differences in the distribution across lexical classes as revealed by the chi-square analyses, there was no one lexical class that differentiated children with and without DLD. The overall lack of group differences here compared to the significant findings of shape-based nouns in the main analysis (see main manuscript) reinforces the importance of nouns, and particularly and shape-based nouns, in understanding differences between late talking children and their developmental trajectories.

**Table S1.** Results of regression analyses comparing the proportion of words in each lexical category of children’s Time 1 vocabularies based on their group. Effect sizes (f2) for significant effects were calculated by comparing the R2 of models with and without the overall main effect of group. Family wise alpha = .010. \* indicates significant effect.

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| **Model** | **Predictor** | ***B*** | ***se*** | ***t*** | ***p*** | ***f2*** |
| **Nouns** | Group | Persisting Late Talkers v. Typical Talkers | .23 | .03 | 8.76 | <.00001\* | .10 |
| Persisting Late Talkers v. Late Bloomers | .11 | .03 | 3.70 | .0002\* |
| Sex | -.004 | .02 | -.26 | .796 |  |
| Age at Time 1 | .02 | .005 | 3.60 | .0003\* |  |
| **Adjectives** | Group | Persisting Late Talkers v. Typical Talkers | .39 | .04 | 9.91 | <.00001\* | .18 |
| Persisting Late Talkers v. Late Bloomers | .07 | .04 | 1.28 | .201 |
| Sex | .01 | .03 | .52 | .606 |  |
| Age at Time 1 | .06 | .0007 | 7.96 | <.00001\* |  |
| **Verbs** | Group | Persisting Late Talkers v. Typical Talkers | .46 | .04 | 10.94 | <.00001\* | .22 |
|  | Persisting Late Talkers v. Late Bloomers | .05 | .05 | .99 | .324 |
| Sex | .05 | .03 | 1.79 | .074 |  |
| Age at Time 1 | .09 | .008 | 10.84 | <.00001\* |  |
| **Other words** | Group | Persisting Late Talkers v. Typical Talkers | -.20 | .03 | -6.90 | <.00001\* | .08 |
| Persisting Late Talkers v. Late Bloomers | -.06 | .03 | -1.72 | .085 |
| Sex | -.006 | .02 | -.32 | .746 |  |
| Age at Time 1 | -.04 | .006 | -6.95 | <.00001\* |  |
| **Function words** | Group | Persisting Late Talkers v. Typical Talkers | .32 | .05 | 6.65 | <.00001\* | .07 |
| Persisting Late Talkers v. Late Bloomers | .10 | .06 | 1.85 | .065 |
| Sex | .04 | .03 | 1.23 | .218 |  |
| Age at Time 1 | .04 | .009 | 4.25 | <.00001\* |  |

**Table S2.** Results of regression analyses comparing the proportion of words in each lexical category of children’s Time 1 vocabularies based on diagnosis group at 4-7 years. Effect sizes (f2) were calculated by comparing the R2 of models with and without the overall main effect of group. Family wise alpha = .010.

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| --- | --- | --- | --- | --- | --- | --- |
| **Model** | **Predictor** | ***B*** | ***se*** | ***t*** | ***p*** | ***f2*** |
| **Nouns** | Group | DLD v. No Diagnosis | .07 | .07 | .97 | .331 | .002 |
| DLD v. Other Diagnosis | .06 | .08 | .68 | .498 |
| Sex | -.008 | .02 | -.43 | .4670 |  |
| **Adjectives** | Group | DLD v. No Diagnosis | .04 | 13 | 28 | .777 | .005 |
| DLD v. Other Diagnosis | .15 | .14 | 1.03 | .304 |
| Sex | .008 | .03 | .22 | .823 |  |
| **Verbs** | Group | DLD v. No Diagnosis | -.08 | .14 | -.54 | .592 | .003 |
| DLD v. Other Diagnosis | -.17 | .16 | -1.08 | .282 |
| Sex | .05 | .04 | 1.25 | .214 |  |
| **Other words** | Group | DLD v. No Diagnosis | .13 | .09 | 1.45 | .146 | .004 |
| DLD v. Other Diagnosis | .15 | .10 | 1.50 | .133 |
| Sex | -.01 | .02 | -.63 | .526 |  |
| **Function words** | Group | DLD v. No Diagnosis | -.09 | .15 | -.58 | .563 | .0006 |
| DLD v. Other Diagnosis | -.09 | .17 | -.56 | .578 |
| Sex | .06 | .04 | 1.44 | .149 |  |

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**Figure S1.** Average proportion of words produced at Time 1 (~1.5 years) in each lexical category by children, based on their group at Time 2 (~2.5 years). \* indicates significant group differences*.*

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**Figure S2.** Average proportion words produced at Time 1 (~1.5 years) in each lexical category by children in each diagnosis group. Error bars represent standard error of mean.