

BACKGROUND AND SIGNIFICANCE

- Joint book reading is important for building attachment, executive functioning, early childhood literacy, but with rapid increase in mobile devices and ebooks, it is unclear if they should be recommended for reading.
- Parents verbally interact less when reading on a device and distracting enhancements may interfere with comprehension.
- Few studies have been completed in toddlers. No studies have examined parent-toddler nonverbal interactions in commercially-available books.



OBJECTIVES/AIMS

In parent-toddler dyads, test the hypotheses that:

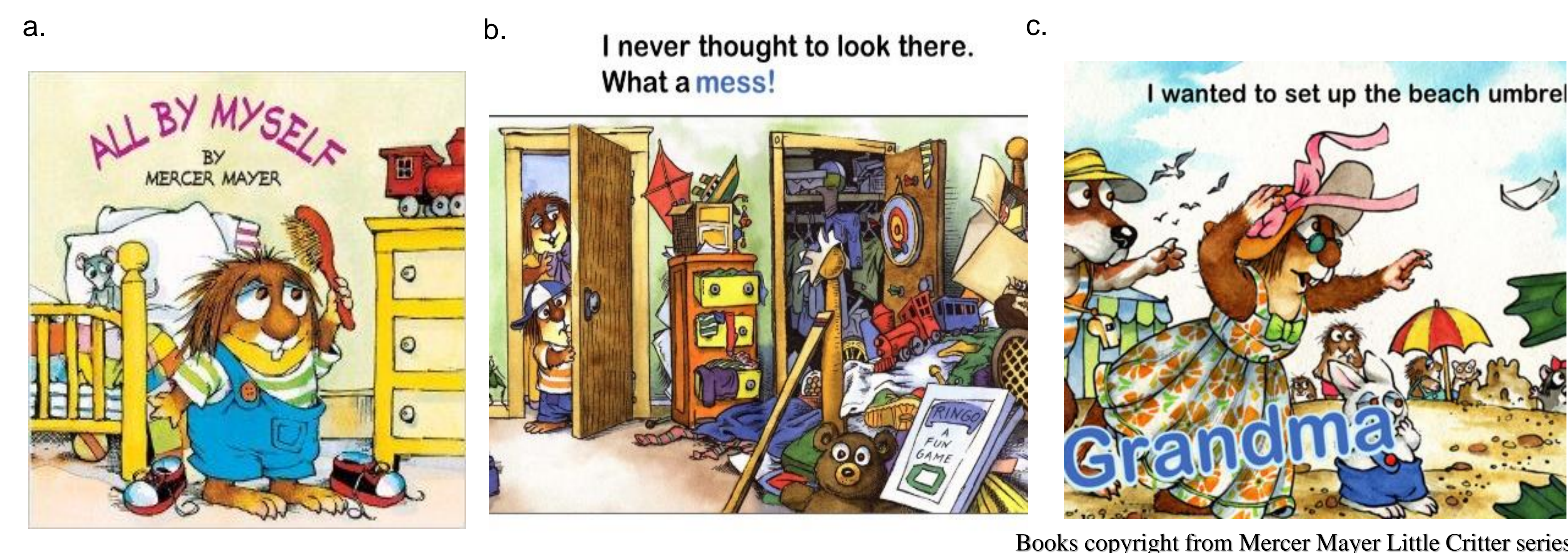
- Quality of nonverbal (social-emotional) interactions lower when reading ebooks versus print.
- Dialogic verbal interactions lower when reading ebooks versus print.

METHODS

- Laboratory-based, within-subjects, counter-balanced, cross-over study design of 37 parent-toddler dyads reading: print book, basic ebook (page turning capability no sound effect), enhanced ebook (sound effect and animation) (Figure 1a-c) for 5 minutes each.
- Coded shared reading activities to reliability (Kappa > 0.70) for the following interactions:
 - NONVERBAL:** Global rating scales (5=high) for parent-child shared positive affect and collaborative book reading.
 - TODDLER VERBALIZATIONS** (in 10-sec intervals): Book-related (“Look, a spider.”); negative (“No, I do it.”); off-task.
 - PARENT VERBALIZATIONS** (in 10-sec intervals): Dialogic (“What’s happening here?”); nondialogic (“Point to the spider.”); read (Verbatim book text); format (“Turn the page.” “Swipe here.”); negative directive book format (“Don’t touch that button.”); off-task.
- Conducted 3-way repeated measures ANOVA for each interaction outcome, adjusting for covariates $p < .05$.

METHODS

Figure 1a-c. Examples of print book (a), basic ebook (b), and enhanced ebook (c). All dyads read three different Little Critter books, in three different formats.



RESULTS

Figure 2. Nonverbal parent-toddler results.

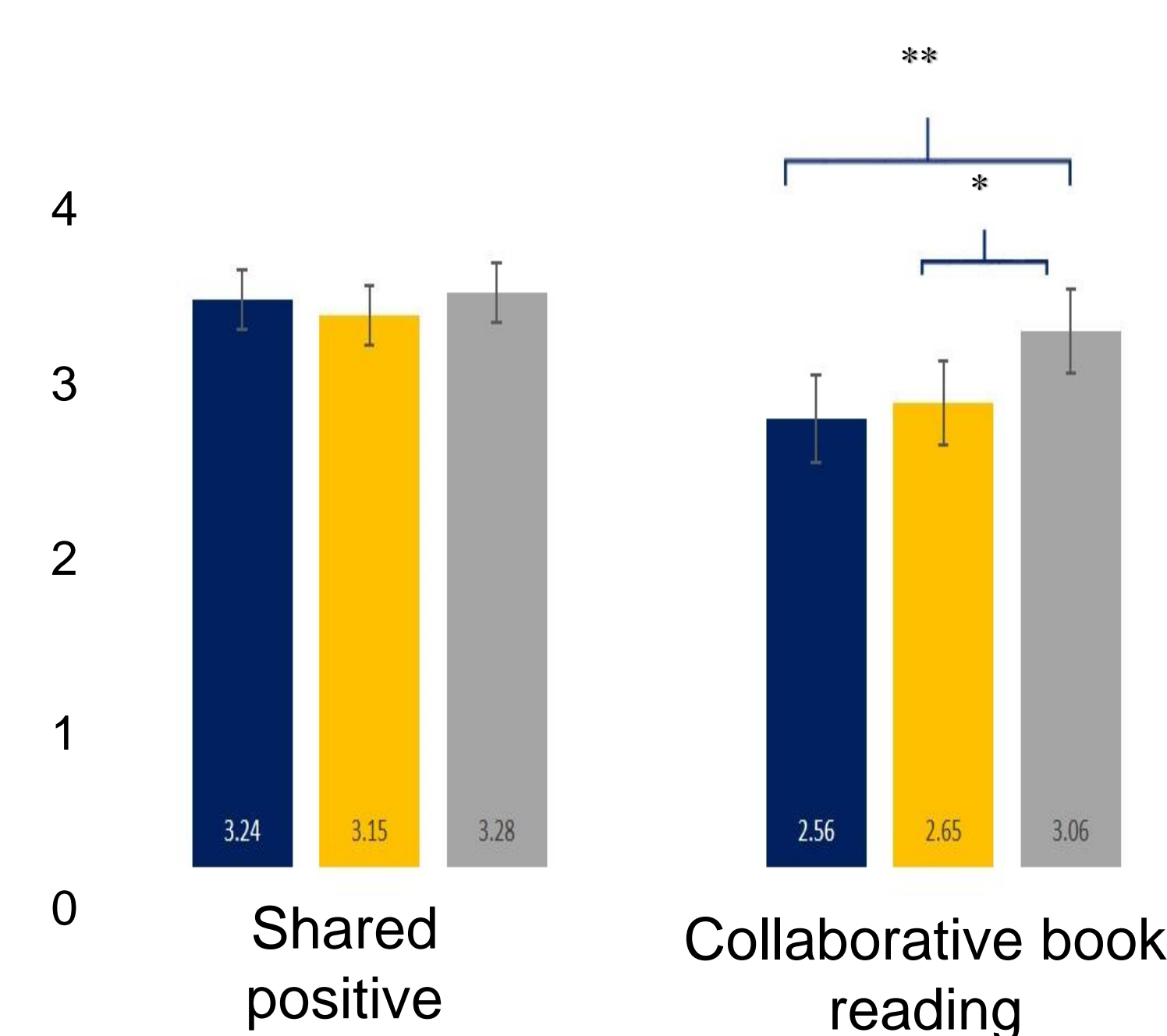


Figure 3. Toddler verbal results.

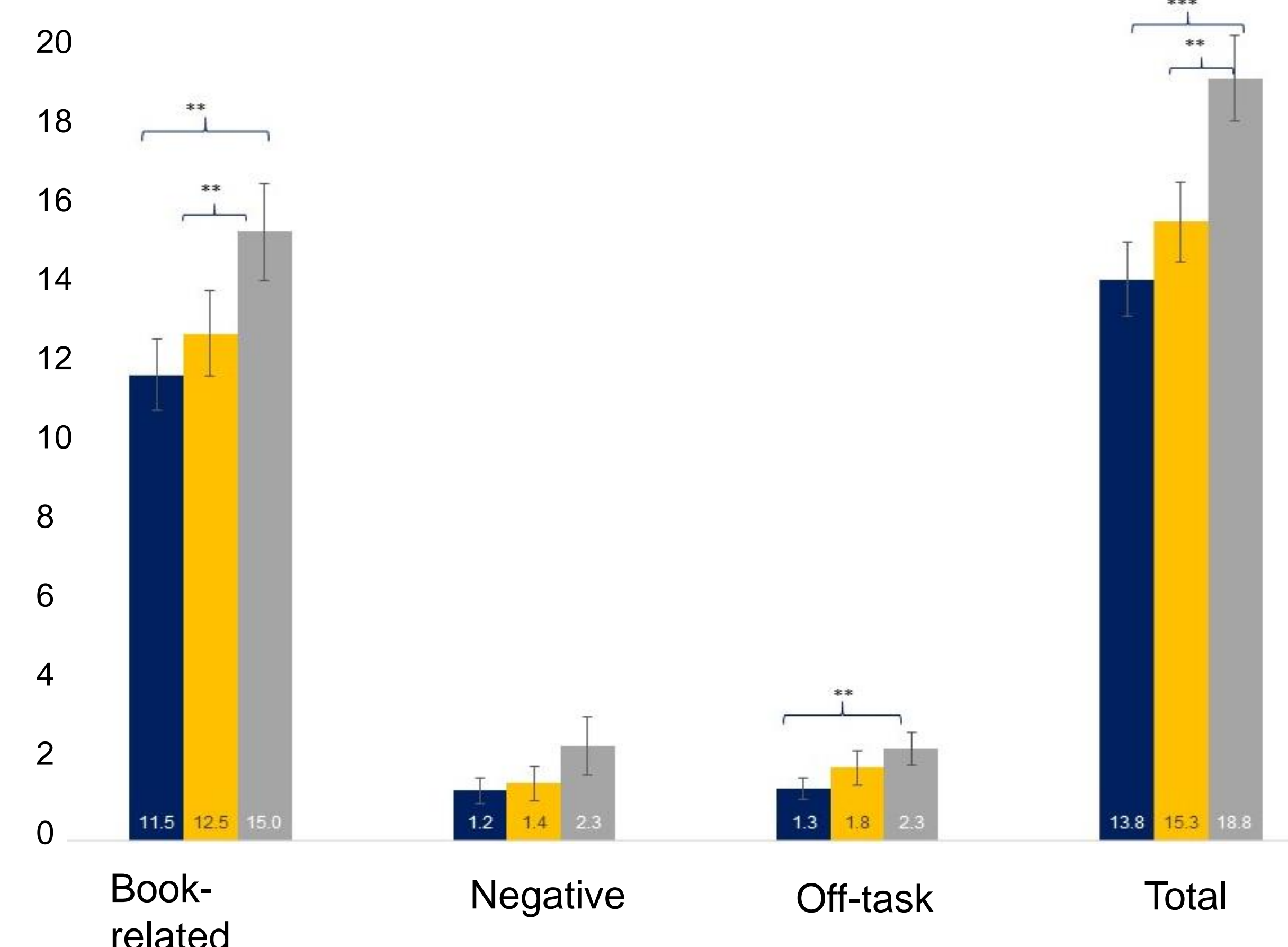
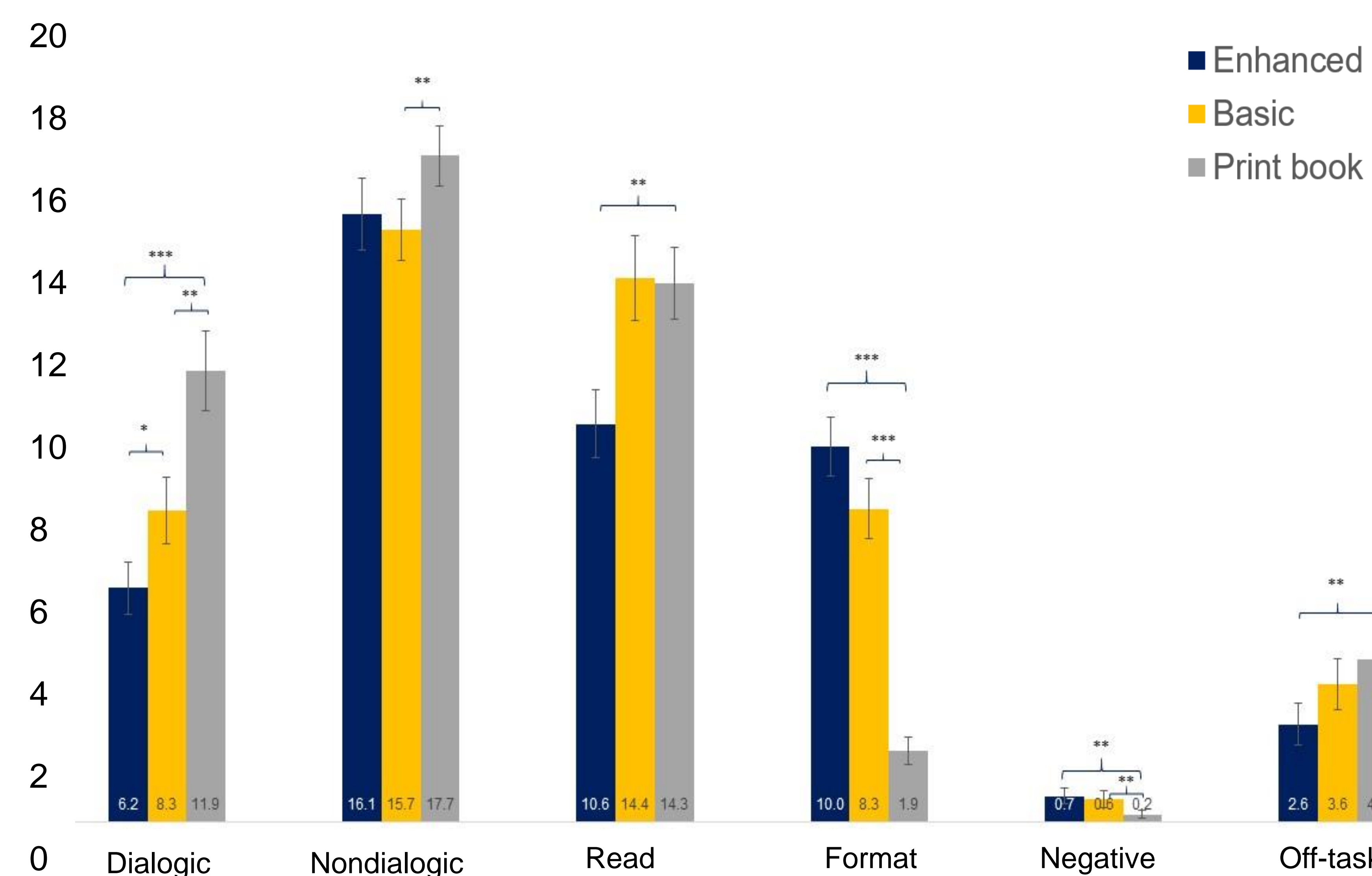


Figure 4. Parent verbal results.



RESULTS SUMMARIZED

- Children were on average 29.2 months (SD=4.2), 54% boys, 56% were Caucasian, 6% African-American, and 27% African American or other. Parents were 33.5 years (SD=4.0), mostly mothers (81%), most had a 4-year college degree or more (75%), and married (89%).
- Collaborative reading was higher for print books versus either electronic book format (Figure 2).
- Toddlers had more book-related verbalizations and total verbalizations in print books versus either electronic book (Figure 3).
 - More off-task verbalizations in print versus enhanced.
- Parents had more dialogic reading in print versus either electronic book format (Figure 4).
- Parents had more nondialogic verbalizations in print versus basic electronic book.
- Parents read more in print versus enhanced ebook.
- Parents had more format and negative format verbalizations in either electronic book format vs. print
- Parents had more off-task verbalizations in print versus enhanced electronic book.

CONCLUSIONS/IMPLICATIONS

- It was not just the tablet enhancements that were interfering with quality of reading, but also affordances of the tablet itself.
- Parents and children interacted less together on tablet ebooks and the quality of collaboration was lower.
- Limitations: Small sample size, observer effect stemming from laboratory design, most children had not used ebooks before.
- Clinical Implications: Given the decreased quantity of parent-child verbalizations and quality of interactions occurring over electronic books versus print, pediatricians may wish to consider recommending print books over electronic books for toddlers and their parents.
- Though the AAP media guidelines recommend co-viewing media together, it may be harder to establish on tablets.

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