Dr. Patricia J. Bauer
Editor, *Psychological Science*

March 30, 2019

Dear Dr. Bauer,

We have enclosed a manuscript, "What might books be teaching young children about gender?," for consideration in *Psychological Science*. Our work presents a new corpus of 249 popular, contemporary children's books marketed for children 0-5 years of age and examines how gender is characterized in these books. Might these books be an early source of gender stereotypes? We attempt to answer this question using data from three converging sources: human judgments, natural text processing (word embedding models), and automated analyses of book reviews.

We find that the texts of the children's books contain rich information about gender, much of it conforming to common adult stereotypes. The results are interesting in part because they show that gender stereotypes in these books may be unintentional yet deeply embedded in the statistics of the language that is used.

In Study 1, we measure word gender bias using adult judgments and then characterize the semantics of word gender biases using word embedding models. Word embedding models use the co-occurrence statistics of words in a corpus to glean information about what a word means. We find that the co-occurrence statistics of the corpus itself reflect gender stereotypes that have been studied previously behaviorally in adults and children (e.g. girls are better at language, while boys are better at math). Further, we find that these biases are more strongly represented in the children's book corpus relative to comparable adult fiction. In Study 2, we found that individual books varied in their gender associations, and contained statistical regularities reflecting gender stereotypes (e.g., girl characters tend to do stereotypically girl activities). Finally, in Study 3, we use automated analyses of book reviews to estimate whether each book is being read primarily to boys or girls. Books with a gender bias tend to be read more often to children of that gender.

Our work is the first large-scale quantitative assessment of gender representation in children's books. Shared reading to young children is a pervasive cultural practice with many benefits, but our work suggests that this practice may also unintentionally promote the development of gender stereotypes that have negative consequences, contributing for example to gender disparities in STEM fields and other types of discrimination.

The study is likely to be of broad interest in psychology and among the general public because it links two culturally significant issues: the importance of reading books with young children, and the development of gender stereotypes. The results raise important questions about the extent to which reading to children contributes to the development of gender stereotypes and whether this trajectory can be altered by changing which books children are read.

Thank you for your consideration and please do not hesitate to contact us with any questions or concerns. Please note that we are a few references over the 40-reference limit because we needed to include some additional references in a meta-analytic-type analysis (Table 5).

Sincerely,

Molly Lewis (corresponding author)
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Gary Lupyan, and Mark S. Seidenberg