A new study from Carnegie Mellon University and the University of Wisconsin-Madison has found children's books may perpetuate gender stereotypes. Such information in early education books could play an integral role in solidifying gendered perceptions in young children. The results are available in the December issue of the journal *Psychological Science*.

"Some of the stereotypes that have been studied in a social psychology literature are present in these books, like girls being good at reading and boys being good at math," said Molly Lewis, special faculty in the Social and Decision Sciences and Psychology departments at the Dietrich College of Humanities and Social Sciences and lead author on the study.

Lewis has found that books with gendered language were centered around the protagonist in the story. Female-associated words focused on affection, school-related words and communication verbs, like 'explained' and 'listened.' Meanwhile, male-associated words focused more on professions, transportation and tools.

"The audiences of these books [are] different," said Lewis. "Girls more often read stereotypically girl books, and boys more often read stereotypically boy books."

Girls are more likely to have books read to them that include female protagonists than boys. Because of these preferences, children are more likely to learn about the gender biases of their own gender than of other genders.

The researchers analyzed 247 books written for children 5 years old and younger from the Wisconsin Children's Book Corpus. The books with female protagonists had more gendered language than the books with male protagonists. The researchers attribute this finding to "male" being historically seen as the default gender. Female-coded words and phrases are more outside of the norm and more notable.

The researchers also compared their findings to adult fiction books and found children's books displayed more gender stereotypes than fictional books read by adults. In particular, the researchers examined how often women were associated with good, family, language and arts, while men were associated with bad, careers and math. Compared to the adult corpus, which was fairly gender neutral when it came to associations between gender, language, arts and math, children's books were far more likely to associate women with language and arts and men with math.

"Our data are only part of the story—so to speak," said Mark Seidenberg, professor of psychology at the University of Wisconsin, Madison and contributing author on the study. "They are based on the words in children's books and say nothing about other characteristics that matter: the story, the emotions they evoke, the ways the books expand children's knowledge of the world. We don't want to ruin anyone's memories of 'Curious George' or 'Amelia Bedelia.' Knowing that stereotypes do
creep into many books and that children develop beliefs about gender at a young age, we probably want to consider books with this in mind."

The study did not directly assess how children perceive the messages about gender in these books or examine how the books influence how the readers perceive gender. The study also did not evaluate other sources of gender stereotypes to which children are exposed.

"There is often kind of a cycle of learning about gender stereotypes, with children learning stereotypes at a young age then perpetuating them as they get older," said Lewis. "These books may be a vehicle for communicating information about gender. We may need to pay some attention to what those messages may be and whether they're messages you want to even bring to children."

Lewis and Seidenberg were joined by Matt Cooper Borkenhagen, Ellen Converse and Gary Lupyan from the University of Wisconsin, Madison in the study, titled "What books might be teaching young children about gender?"


Provided by Carnegie Mellon University

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