**Storybook project: Backfiring in books aimed at inspiring leadership in girls?**

**Stimuli**

Preschool books

* “Little People, Big Dreams” series (Books from series purchased at Bing)
  + Jane Austen by Isabel Vegara (confirm this specific book is being read at Bing)
  + Marie Curie by Isabel Vegara (confirm this specific book is being read at Bing)
* Drum Dream Girl: How One Girls Courage Changed Music by Margerita Engle (Currently read to children at Bing)
* I am Amelia Earhart by Brad Meltzer
* Joan Procter, Dragon Doctor by Patricia Valdez
* Maybe Individual passages from I Dissent

Stimuli selection considerations

* Bing – do not use Bing books bc of prior exposure.
* Adapt pre-existing book
  + Crit: copyright issues?
  + Crit: lots of mixed messages, lack of control, etc.
* Abbreviate stories
* Write own paragraph

Problematic elements of books

* **code books for use of these elements**
* **Manipulate elements**
* Reinforce/establish gender-stereotypical beliefs
  + **Girl to boy comparisons → boys as the standard/norm**
    - Comparisons of girls to boys regarding intelligence (reading, math, etc.) → implying boys are more innately intelligent or brilliant than girls
    - Control – substitute “older girls” for “boys”, or eliminate comparison, or reverse it
    - Cf Ellie’s work – minimal info, isolated paragraphs → who do you think is better at \_\_
  + **Girl to girl comparisons → implicit criticism of stereotypically girly actions or ideas, x** individual measures of identification of femininity, attitudes towards femininity, pre-test
    - Statements about what girls should stereotypically wear, do, behave, etc. → implied criticism of girly things
      * “When Marie was a little girl, she made a vow to herself...she was going to be a scientist, *not a princess*.” (Curie) → who’s more likely to be a scientist? Who is more likely to be a better scientist?
      * “Jane loved to read. She always chose a book *instead of her dolls* and spent endless hours in her parents’ library” (Austen) → who’s more likely to read/be a writer?
      * “When I was little, people told me that *girls should wear dresses and play with dolls*. They said we shouldn’t have ‘unladylike’ adventures. I didn’t agree” (Earhart)
      * “*While* *other girls read stories about dragons and princesses*, Joan read books about lizards and crocodiles. *Instead of a favorite doll*, a favorite lizard accompanied her wherever she went.” (Joan Procter) → who is more likely to have a lizard?
    - Implications regarding norm for girls to be orderly, gentle, and tame versus unruly, loud and messy
      * e.g. *“The crash was loud and noisy and messy. It certainly wasn’t ladylike. But it was awesome!”*
      * Cf gender appropriateness of breaking rules ~ likelihood of being a genius, since the definition of genius is normally linked with risk taking/breaking rules, not being orderly, etc.
* **Unrealistically exceptional struggles → perception that girls must use exceptional effort as necessary to achieve** 
  + Relative effort vs absolute effort
  + Portrayals of overcoming extraordinary struggles → unrealistic perseverance/sacrifices/struggles
    - First ever - No woman had ever done this before…
    - Statements implying that women need to be the “one and only” or “the best” to be a leader
    - “Marie couldn’t go to the same university as her brother. In her home country, only men were allowed to study. But she wouldn’t take no for an answer, so she packed her bags and moved away to France.” “Marie became the best math and science student in Paris” (Marie Curie)
    - “When Joan grew older, she skipped the parties and dances with her friends. Instead she sought out the curator of reptiles and fish at the Natural History Museum.” (Joan Procter)
    - “I am Amelia Earhart. I know no bounds. And I hope you’ll remember that the greatest flight you’ll ever take, is the one no one has tried before” (Earhart)
  + Lin - Smith et al. (2013): male dominance in x STEM field → female STEM grad students feel they have to exert more effort than others to succeed ~ decreased belonging ~ decreased motivation
    - Vs emphasizing effort as expected ~ increased belonging and motivation
    - Women must work unrealistically hard in order to become leaders → for women, genius and success does not come without struggle
    - Lin - girls are particularly discouraged by the requirement about "being brilliant", no data yet on “being smart”
    - Lin - girls and boys are equally interested in activities for kids who "work really really hard", which might be because this message expresses exceptionalism about a malleable feature (effort) and/or because it doesn't involve any comparisons (e.g., one gender has to work harder than the other)

**Study design**

* Lin-Siegler et al 2016 – 9th and 10th grade HS – 5wk intellectual or life struggle stories about a scientist, vs achievement stories → 1wk post-test increase in science class grades for those with low initial grades, feel more connected to the scientist
* Smith et al 2013 – female grad students – academic belonging, domain motivation items, GPA
* 6yo – gender stereotypes about scientists (Lin and Marjorie)

**Dependent variable**

* Belief that girls and boys are equally smart? (Lin’s work on brilliance)
  + Story about someone who is really, really smart – guess which of 4 diff-gender adults it is
  + Different-gender pair of adults – guess who is really, really smart
  + Objects (eg hammer) and attributes (eg smart) – match with men and women
  + Draw someone who is really smart – code gender
* Belief that both boys and girls can be leaders?
  + Draw someone who is a leader – code gender
* Motivation to be a leader
  + 20 item fc Motivations for Reading Scale – enjoyment of reading, belief in value of reading, self-concept as a reader, interest in library-related activities (Baker et al 1997)
  + Enjoyment of being a leader, belief in the value of leadership, self-concept as a leader, interest in leadership-related activities
* Attitude/interest in field
* Identification with the figure in the story
* Cf Kara has run a study looking at cross-cultural differences in books for children. Waxman and Medin have related work
  + Waxman et al 2014 – 5yo – anthropomorphic perspective (berenstain bears) vs biological perspective (encyclopedia) on bears picture book x teaching a novel biological property (eg have x inside) with either dogs or humans as base 🡪 anthropomorphic book: more anthropocentric = more likely to extend with human-base, biological: same
  + In these cases though, I don't think there are any measures of how children construe the material or its effect on children, instead the differences in the books is the finding. But there may be follow up studies or related studies that could prove useful.
* Cf how food is marketed to children (games, toys, cartoon characters to sell cereal) - children's reactions
  + Sort toys into girl toys and boy toys
  + Like vs dislike of the toy
  + Product requests and purchases
  + Ads – credibility, entertaining