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Storybook Project Literature Review

**Background**

Recently, the publishing industry is experiencing a growth in popularity of picture books that promote and celebrate female achievement in fields they are typically underrepresented in. While these picture books are intended to motivate young girls to pursue those fields, the linguistic elements they contain may actually be damaging. Commonly used language structures in these picture books include girl-to-boy comparisons, girl-to-girl comparisons, and female exceptionalism. In the Storybook Project, we include three picture books, each with a distinct instance of one of the three aforementioned sentence structures. Because young children are still discovering what they enjoy and are passionate about, we wonder if hearing statements that contain these language structures might dissuade them from pursuing certain fields in the future. In the Storybook Project, we examine the effect of these language structures on girls’ motivation to pursue these fields.

**Girl-to-Boy Comparisons**

These picture books often directly compare girls and boys with the intention of portraying them as equals. However, girl-to-boy comparisons may be harmful if in the form of directional statements, such as “Girls are just as smart as boys.” Tversky’s work on features of similarity establishes that directional statements are statements that contain a subject and a referent and are inequivalent to their converse. For example, Tversky demonstrates that in comparing Turks to tigers, we use the statement “Turks fight like tigers” and not “tigers fight like Turks,” because tigers should be the referent or baseline as they are renowned for their fighting. Tversky found that statements have higher ratings of similarity when the referent is more prominent, suggesting that it makes more sense to people for the more renowned, typical, or established object to occupy the referential position in a directional statement. He suggests that directional statements can construe asymmetrical judgements of similarity — meaning that they might not have their intended effect (Tversky 1977).

Gleitman et al. elaborate upon Tversky’s work on similarity, critiquing Tversky’s assertion that the concept of similarity is in itself asymmetrical. In doing so, however, Gleitman et al. demonstrate that people’s judgements of directional statements of similarity are affected by the absurdity of the subject of the sentence. For example, people prefer the sentence “The bus ran into the lamppost” but are averse to the statement “The lamppost ran into the bus,” because the lamppost as the subject or agent in this case is highly implausible (Gleitman et al., 1996). Thus, Gleitman et al. suggest that people are more likely to be averse to sentences with absurd agents.

Ellen Markman and Eleanor Chestnut’s work on subject-complement structure builds upon Tversky’s and Gleitman’s work, discussing how such directional statements can affect children’s perceptions of the abilities, values and traits of the subjects in the sentence. In the statement “A zebra is like a horse,” the zebra is the subject or variant and the horse is the complement or reference point (Markman & Chestnut, 2016). This type of structure is known as a forward statement. Markman and Chestnut found that both children and adults displayed preference for forward statements such as this one ― because people perceive horses to be more common and typical, it seems more natural that they serve as the baseline, or complement, in the sentence. Thus, Markman and Chestnut suggest that the complement in a directional statement is the more established, typical, or normal entity, consistent with Gleitman et al.’s findings. In this same study, they examined the implications of the comparative phrase “as well as” in a directional statement. They presented children with novel characters and tasks and used a structure where the subject could perform a task “just as well”as the complement, finding that the “as well as” condition strengthened older children’s framing preferences (Markman & Chestnut, 2016).

Markman and Chestnut built upon these comparative observations in their later work on the impact of asymmetric direct comparisons, discussing how adults may be unintentionally communicating biased information in attempts to do the opposite. Girl-to-boy comparisons, such as the sentence “Girls are just as smart as boys,” involve a subject-complement structure. In this particular statement, “girls” is the subject, and “boys” is the complement. Asymmetrical, directional comparisons in which boys are the complement and girls are the subject may imply that boys are more established, typical or normal in the context of a specific trait or task (Markman & Chestnut, 2018).

In the Storybook Project, one of the books includes the directional statement, “Girls could … read and write just as well as the boys”. Based on Markman and Chestnut’s work, we will examine if comparative, directional statements will actually demotivate girls by insinuating that boys are superior or inherently better at respective tasks or occupations.

**Girl-to-Girl Comparisons**

Girl-to-girl comparisons draw a distinction between a successful girl and “other girls,” where the successful girl often deviates from traditional feminine stereotypes and displays more traditionally-masculine habits. The comparison, and its juxtaposition with the storied success of the deviant girl, can imply that masculinity and more masculine features lead to success. It suggests that only when a girl deviates from traditional feminine stereotypes can she be successful or accomplished.

Girl-to-girl comparisons are found in the Storybook Project in a book about Joan Proctor, who grew up to become a famous scientist who studied lizards. Joan Proctor carried around a “favorite lizard” as a child, while other girls carried around “favorite dolls”. Other girls liked dragons and princesses, while Joan liked lizards and crocodiles. The comparisons in the story indicate that while the other girls didn’t become scientists who studied lizards, the more traditionally masculine interests Joan expressed as a child allowed her to “get ahead” of the other girls and become a scientist. Girl-to-girl comparisons may lead young girls to believe that masculinity is a required tenet of success, and to lose motivation if they are interested in more traditionally-feminine activities or items.

**Exceptionalism**

Exceptionalism highlights the unique accomplishments of successful people and portrays them as exceptional, often augmenting the idea that people need exceptional talent to succeed. When applied to girls, it may discourage girls from pursuing a certain field because they think that only someone with innate, exceptional talent or intelligence can achieve in that field. Female exceptionalism can take the form of identifying women as “the first” or “the only” woman to do something. While stories about record-breaking women may seem inspiring from the outside, they might actually demotivate young children ― specifically young girls. Bian, Leslie and Cimpian’s workon the perceptions of innate talent and hard work suggests that girls are more likely to attempt a task if it is emphasized more as a “try-hard” game rather than a “smart” game ― girls perceived themselves as more likely to succeed at a game if it required a lot of effort than if it required innate intelligence (Bian et al., 2017). According to Bian, Leslie and Cimpian, girls may be demotivated from pursuing a task or career if it appears that it requires a lot of natural talent.

Furthermore, a study conducted by Leslie, Cimpian, Meyer and Freeland indicates that male-dominated fields show a distinct increase in self-perceived natural talent, building upon the idea that women perceive themselves as more hardworking rather than naturally talented (Leslie et al., 2015). Therefore, exceptionalism can be damaging to girls, because it implies success in certain fields requires exceptional natural talent. Thus, exceptionalism in picture books can dissuade girls from pursuing certain fields or activities at a young age, which carries into adulthood.

The Storybook Project contains a book about Amelia Earhart, detailing her accomplishments and how many records she broke. Because she is so impressive, so exceptional, it may seem to young girls like she had the talent innately. The Storybook Project will examine the effects of female exceptionalism on girls’ motivation to pursue that professional field.

**Conclusion**

Through the Storybook Project, we present subjects with girl-to-boy comparisons, girl-to-girl comparisons, and female exceptionalism found in existing picture books. We are curious if the directional nature of girl-to-boy comparisons will decrease girls’ perceptions of their own innate intelligence. Furthermore, we want to see if girl-to-girl comparisons will discourage girls with more feminine and fewer masculine preferences from pursuing fields they are less represented in. Finally, we examine if statements of exceptionalism related to women will demotivate girls by portraying success in a specific field as something unusual and requiring lots of innate talent. We aim to discover whether these picture books are truly succeeding in motivating young girls, or if they have the opposite effect. If the picture books are indeed demotivating young girls, it will be important to alter them so as to avoid dissuading young girls from pursuing certain careers in the future.

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