Parent’s Talk with Children About Success and Failure in Math

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Introduction

- Parents play a crucial role in children’s learning (for a review, see Pomerantz et al., 2012).
- There is substantial evidence that how parents talk with children about success and failure is of importance (e.g., Gunderson et al., 2013; Pomerantz & Kemper, 2013):
  - The more parents use process language, which focuses on such elements of the learning process as effort and enjoyment, the more children hold a growth mindset (i.e., ability is seen as malleable) and the more they approach challenge.
  - When parents use person language, which focuses on stable elements of the individual (e.g., innate intelligence), children hold a fixed mindset (i.e., ability is seen as static) and avoid challenge.
  - Unfortunately, it is unclear what leads parents to use process and person language in talking about performance.

Research Questions

Study 1

Is parents’ process versus person language about performance shaped by their growth versus fixed mindsets?

- We examined this in regards to parents’ language about the performance of a storybook character.
- It may be difficult for parents to implement their mindsets when they are distressed or elated about their own children’s performance.

Study 2

Does parents’ process versus person language about another child’s performance influence children themselves?

We focused on math because it is a subject where children’s mindsets are particularly important for their learning (e.g. Blackwell et al., 2007).

Study 1 Method

Participants
- 128 mothers and their children (mean age = 7.33 years, SD = .74)

Mindset Manipulation Brochures:
- Growth Mindset: math ability was characterized as malleable by the environment (e.g., parents) (see excerpt from brochure below).
- Fixed Mindset: math ability was characterized as a stable entity that shows little change.

Study 1 Results

Manipulation Check
Mothers in the growth mindset condition endorsed growth mindsets more than mothers in the fixed mindset condition after, but not before, reading the mindset brochures, p < .001.

Storybook Task
- Mothers and children read a storybook in which the two central characters succeeded or failed at math.
- Discussion questions were embedded throughout the story book (e.g., “Why do you think Annie did well on her math test?”)
- Mothers’ process (e.g., “She practiced and tried hard”) versus person (e.g., “She’s just smart at math”) language in response to the discussion questions about the characters’ success and failure was coded (ICCs > .7).

Do Mothers’ Mindsets Matter?
Mothers induced to hold a growth mindset used more process language and less person language than mothers induced to hold a fixed mindset, p < .001.

Table: Average across their responses to success and failure (SD = .61)

Mother Mindset Survey
- Mothers’ mindsets about math ability were measured before coming into the lab and at the end of their visit (scale adapted from Dweck, 2003, e.g., “Children can always change their math ability quite a bit”; 0-100 agreement scale).

Study 2 Method and Results

Participants
- 20 children (mean age = 7.86 years, SD = .61)

Language Manipulation
- Process Language: Children were read the storybook from Study 1 by a research assistant. Embedded in the storybook was process language about why each character succeed or failed (e.g., “Everyone needs to work really hard at math, and Daisy does that—she really pays attention in class!”).
- Person Language: Children hear person language about each character’s performance (e.g., “She’s really good at other things. Her brain is not too good at math. That’s just how it works.”).

Results
Children’s mindsets, motivation, and achievement—assessed with behavioral and interview measures—did not vary with the type of language to which they were exposed.

Conclusions

- Giving parents information that math ability is malleable can lead them to use more process versus person language in talking about story characters’ performance (Study 1).
- However, language about a story character does not appear to contribute to children’s mindsets, motivation, or achievement in math (Study 2).
- The manipulation in Study 2 may not have influenced children’s mindsets due to the short amount of exposure, or because children’s mindsets were already strongly growth-oriented, leaving little room for change.