

Background

Mindsets, or individual beliefs about growth, ability and improvement are well-explored psychological constructs.^{1,2}

- **Fixed mindsets** arise from the belief that intelligence is static, and are driven by the need to demonstrate competence. This mindset often leads to disengagement from difficult or failure-prone tasks.²
- **Growth mindsets** involve endorsement of a flexible view of intelligence. Motivation arises from the possibility of learning and skill acquisition. These individuals are typically willing to engage in difficult tasks.²
- Mindset is characterized as a stable attribute that can only be altered through extensive intervention or training.^{1,2}

Differences in task performance and success have been tied to variations in perceived control of and commitment to task goals.^{3,4,5,6}

- **Assigned goals**, rather than **self-set goals**, are related to greater commitment and lead to better performance.^{3,4}
- First-person **self-talk** can result in performance decrements due to heightened awareness of responsibility for task outcomes.^{5,6}

Existing literature does not address the potential interaction between mindset and nuances in goal setting.

- The fixed mindset motivation to demonstrate competence may be enhanced when the presence of an observer is suggested (i.e. assigned goals; "You"-framed goals).^{3,4,6}
- Growth mindsets may decrease susceptibility to influence by goal-related factors, as growth orientations are characterized as self-motivated approaches to skill acquisition.^{1,2}

The Strategic Mindset Model proposes an alternative to canonical theories surrounding mindset. This model:

- suggests that mindset is malleable, particularly in response to task performance and goal framing.
- accounts for the interaction between mindset and task-specific factors to predict performance outcomes.
- argues that mindset is more appropriately characterized as a dynamic strategy rather than a static trait.

Questions & Predictions

Does naïve mindset influence the effect of self-set goals on task performance?

Assigned goals will result in improved performance for fixed-oriented learners when compared to self-set goals. For growth-oriented learners, self-set goals will motivate more ambitious targets, and thus better performance.

Does naïve mindset influence the effect of self-focused talk on task performance?

First-person goals that suggest agency of the the learner will lead to improved performance. Second-person goals will undermine performance, particularly for fixed-oriented individuals due to the implied presence of an observer.

Does mindset change in response to task demands?

An individual's self-reported mindset will shift away from a growth orientation after exposure to a challenging, error-prone task. Endorsements of fixed mindsets will be more likely after exposure to challenge or failure.

References

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Method

1. Pre-Task Survey

Goal Orientation

Learning vs. Performance

Mindset

Fixed vs. Growth

Motivation for Learning

Locus of Control
Effort
Intrinsic Motivation
Extrinsic Motivation

2. Task Instructions



Land each plane on the corresponding runway.
Try to land each plane as quickly and accurately as possible.

3. Practice x 3

20 trials per block
Performance feedback following each block

4. Goal Manipulation

Experiment 1
Self-Set vs. Assigned Goals
Experiment 2
"I" vs. "You" Self-Talk

5. Test Blocks x 20



Goal introduced prior to each block
Performance feedback following each block

6. Post-Task Survey

Goal Orientation
Learning vs. Performance

Mindset
Fixed vs. Growth

Perceived Performance

Task Enjoyment

E1: Self-Set vs. Assigned Goals

Goal Manipulation (2 x 2)

Goal Origin

Self-Set

Participant selects and enters target average response time.

Assigned

Participant is provided with target average response time; enters assigned goal values.

Goal Framing

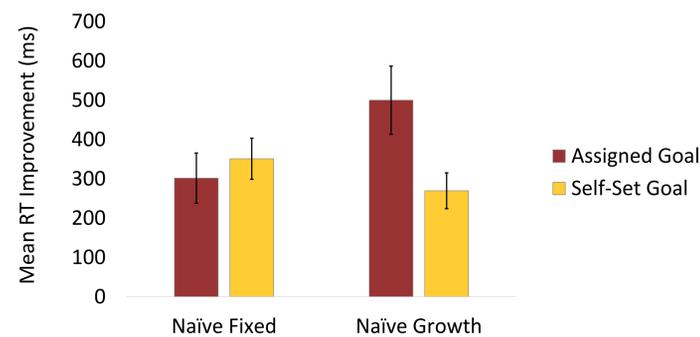
Performance

"Try to perform better than other participants."

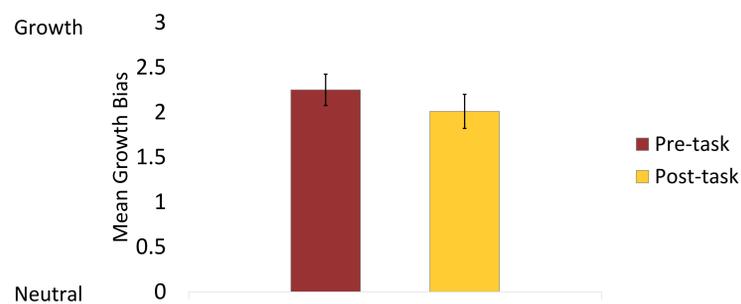
Learning

"Try to perform better than you did before."

Beliefs about mindset interacted with goal origin to influence performance, $F(1,118) = 4.76, p = .03$. Growth mindsets led to greater RT improvement in the face of assigned goals than self-set goals.



Participants' self-reported endorsements in favor of growth mindsets diminished from pre-task to post-task, $F(1,120) = 6.87, p = .01$.



E2: "I" vs. "You" Self-Talk

Goal Manipulation (2 x 3)

Goal Self-Talk

First-Person: "I will ..."
Emphasizes participant's involvement

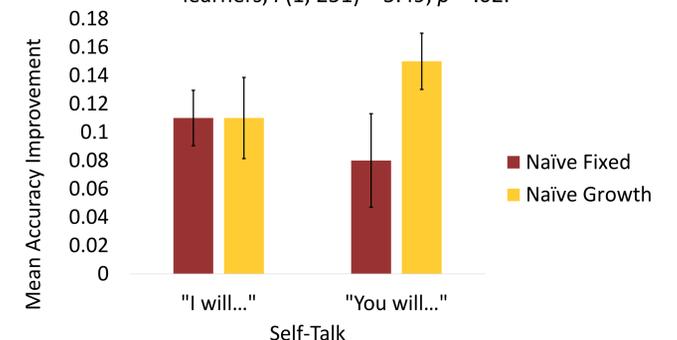
Second-Person: "You will..."
Implies the presence of an audience

Goal Framing

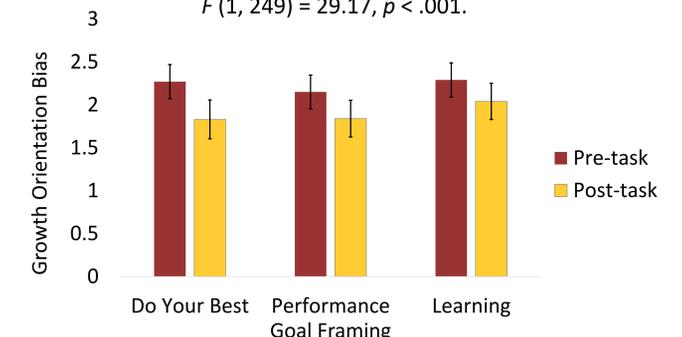
Do Your Best
"...try to do your best."
Performance
"...try to perform better than other participants."

Learning
"...try to perform better than you/I did before."

Second-person self-talk interferes with skill acquisition in individuals with fixed mindsets, whereas performance is facilitated for growth-oriented learners, $F(1, 251) = 5.49, p = .02$.



Participants' tendencies to report endorsements of growth mindset-oriented beliefs diminishes over time during exposure to a challenging task, $F(1, 249) = 29.17, p < .001$.



Conclusions

Does naïve mindset influence the effect of goal origin on task performance?

Yes. Assigned goals lead to a performance improvement for growth-oriented learners. Self-set goal effects did not vary across mindsets.

Does naïve mindset influence the effect of self-focused talk on task performance?

Yes. Fixed mindset orientations impair skill acquisition when combined with wording that suggests the presence of an observer.

Does mindset change in response to task demands?

Yes! Participants reported significantly attenuated endorsements of growth mindsets after exposure to the novel, challenging task.

In summary...

Taken together, these findings suggest that:

- Mindset interacts with task factors, particularly goal-based influences, to yield differential task performance.
- Mindset can be shifted away from growth orientations as a result of repeated exposure to a difficult or challenging task.
- Mindset may be less stable than originally suggested, and instead may be maintained as a dynamic strategy that shifts in response to task demands and preliminary performance.