The relationship between mental strategies and runners’ sex, speed, and GRIT
Motivational self-talk found to reduce RPE and enhance endurance performance

Supports psychobiological model, Hill’s theory cannot explain performance and suggests critical role of brain
Mentally fatigued subjects rated exercise as more difficult, disengaged earlier.

British Journal of Sports Medicine suggests teaching athlete to select pacing strategies by associated emotion.
What strategies do people use to deal with adversities while running? Do different strategies yield better results (faster speed)? Do these results differ between men and women?

What goals do people have while running? Do different goals yield better results (faster speed)? Do these results differ between men and women?

Is GRIT related to mental strategies? Does it also correlate with speed? Does this differ between men and women?
Race: February 22\textsuperscript{nd} 8K and 15K

40 transcripts

12 women and 28 men of varying ages
We had various methods ... 

Interviewed at least 5 people each

Transcribed data and coded GRIT scores

Had peers do pilesorts

Performed reliability analysis

Created comparison charts and graphs of mental strategies, goals, and GRIT vs. speed
Female 53%
Male 47%

Runners' Demographics Day of Race
Male 47%
Female 53%

Sample Runners' Demographics
Female 30%
Male 70%

Sample Runners
3.87%
Non-sample runners 96%
Non-sample runners 96%
<table>
<thead>
<tr>
<th>Females</th>
<th>Average Speed</th>
<th>Average Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>2.51</td>
<td>38.1</td>
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<tr>
<td>Sample Size</td>
<td>2.83</td>
<td>34.1</td>
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</table>

<table>
<thead>
<tr>
<th>Males</th>
<th>Average Speed</th>
<th>Average Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>3.02</td>
<td>41.9</td>
</tr>
<tr>
<td>Sample Size</td>
<td>3.41</td>
<td>36.8</td>
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</table>
Reliability analysis (with randomly generated cards)

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<tr>
<th>Card</th>
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<th>Associative</th>
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<tbody>
<tr>
<td>Card #2</td>
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</table>
What strategies do people use to deal with adversities while running? Do different strategies yield better results (faster speed)? Do these results differ between men and women?
My mental strategy is...

**Associative**

“Telling myself I can make it through, and nothing’s over.”

“I use landmarks as I go.”

**Dissociative**

“I run I’m just zoned in, I just ignore my surroundings. I listen to music too.

“Don’t think about the pain.”
Men run faster than women using any of the three strategies.

**Mental Strategies vs. Average Speed**

- **Associative**
- **Both**
- **Dissociative**

Average Speed (m/s)

- Females
- Males
Pacing and breathing

Immediate goals

Other strategies

Pacing and breathing

Pain/reinforcement/finish

Music and zone out

Positive thinking

Competition
My mental strategy is...

**Competition**

“I try not to let other women pass me.”

“I’m usually focused on the person in front of me, and either catching up with them or not losing any more distance”

**Immediate Goals**

“I basically just get started, pace myself, and finish.”

“I set a goal for each mile.”
My mental strategy is...

Music/zone out

“I listen to a lot of hip hop music when I run. R&B, gospel, it doesn’t matter.”

“I have an awesome playlist. So I kind of zone out everybody else.”

Positive Thinking

“I picture my children at the finish line.”

“The fact that the two of us are together, that really helps, and just thinking positively.”
My mental strategy is...

Pacing and breathing

“I concentrate on trying to do an even pace, not go out too fast.”

“Slow down my breathing, and keep pace with my foot strike.”

Pain/Reinforcement/Finish

“Don’t think about the pain.”
“Mind over matter.”
“Just to stay focused on finishing.”
Overall, running faster correlates with thinking about finishing/pain/reinforcement, competition, or immediate goals.

**Mental Strategies vs. Average Speed**

- **Average Speed (m/s)**
  - Competition
  - Other
  - Immediate Goals
  - Music and Zoning Out
  - Positive Thinking
  - Pacing and Breathing
  - Pain/Reinforcement/Finish

The bar chart shows the average speed for different mental strategies, with Pain/Reinforcement/Finish having the highest average speed.
Faster women tend to think about competition
Faster men tend to think about pain/reinforcement/finishing

Mental Strategies vs. Average Standardized Speed

<table>
<thead>
<tr>
<th>Mental Strategies</th>
<th>Females</th>
<th>Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate Goals</td>
<td>-1.1</td>
<td>-0.85</td>
</tr>
<tr>
<td>Music and Zoning Out</td>
<td>-0.6</td>
<td>-0.35</td>
</tr>
<tr>
<td>Positive Thinking</td>
<td>-0.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Pacing and Breathing</td>
<td>0.15</td>
<td>0.4</td>
</tr>
<tr>
<td>Pain/Reinforcement/Finish</td>
<td>0.65</td>
<td>0.9</td>
</tr>
<tr>
<td>Competition</td>
<td>0.9</td>
<td></td>
</tr>
</tbody>
</table>

Average Standardized Speed (m/s)
What goals do people have while running? Do different goals yield better results (faster speed)? Do these results differ between men and women?
My goal is...

Just finish

“To finish... I never ran an 8k before.”

Feel good

“My goal was to go out there and run relatively even and feel good.”

Pace

“Somewhere around 8 minute miles.”
My goal is...

Time
“37 minutes.”

Combination
“To finish well and to get a better time for the Peachtree Road Race.”

Other
“I’m preparing for a marathon, so I wanted to be around another group of people.”
On average, runners who run faster have goals related to specific times or “feeling good”
Females who run faster tend to have goals related to “feeling good”
Males who run faster tend to have a combination of more than one goal.
Is GRIT related to mental strategies?
Does it also correlate with speed? Does this differ between men and women?
1. New ideas and projects sometimes distract me from previous ones
   - Very much like me
   - Mostly like me
   - Somewhat like me
   - Not much like me
   - Not like me at all

2. Setbacks don't discourage me
   - Very much like me
   - Mostly like me
   - Somewhat like me
   - Not much like me
   - Not like me at all

3. I have been obsessed with a certain idea or project for a short time but later lost interest
   - Very much like me
   - Mostly like me
   - Somewhat like me
   - Not much like me
   - Not like me at all

4. I am a hard worker
   - Very much like me
   - Mostly like me
   - Somewhat like me
   - Not much like me
   - Not like me at all

5. I often set a goal but later choose to pursue a different one
   - Very much like me
   - Mostly like me
   - Somewhat like me
   - Not much like me
   - Not like me at all

6. I have difficulty maintaining my focus on projects that take more than a few months to complete
   - Very much like me
   - Mostly like me
   - Somewhat like me
   - Not much like me
   - Not like me at all

7. I finish whatever I begin
   - Very much like me
   - Mostly like me
   - Somewhat like me
   - Not much like me
   - Not like me at all

8. I am diligent
   - Very much like me
   - Mostly like me
   - Somewhat like me
   - Not much like me
   - Not like me at all
People who use associative mental strategies correlate with having higher average GRIT.
People with the highest average GRIT also use “other” mental strategies while running.
Men with higher average GRIT tend to use dissociative mental strategies while women tend to use associative strategies.
Higher average GRIT associates with pain/reinforcement/finishing in women and with “other” mental strategies in men.

Mental Strategies vs. Average GRIT

- Males
- Females
GRIT and speed are inversely related

GRIT vs. Speed (overall)

\[ y = -0.027x + 3.9865 \]

\[ R^2 = 0.03618 \]
Why does this matter?

