

“Grit, Preferences, and Investor Behavior”

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Discussion by:

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What does this paper do?

Posit, and examine whether Grit affects the preferences and trading decisions of individuals using controlled experiments.

- ▶ **Grit** (i.e., tenacity or perseverance): a novel personality trait that captures the tendency to sustain effort, despite challenges in achieving short- and long-term goals (Duckworth et al. 2007); “exertion of effort or will necessary to achieve goals” (Shechtman et al. 2013, 12)
- ▶ **Preferences**: loss aversion, subjective probability weighting, risk aversion
- ▶ **Trading decisions**: the Disposition effect, trading frequency, portfolio diversification, performance

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3. **Unclear directional effects**: gritty investors may have “higher willingness to realize losses”, hence lower loss aversion; they may also be “less willing to give up when facing financial losses”, hence higher loss aversion.

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► Elicitation and Measurement:

1. **A 2-min “writing task”**: Hillygus, Holbein, and Snell (2016)
“We would like you to think about an experience where you, or someone in your family, worked hard to achieve a goal. This experience could be something that happened recently or something that happened a while ago. What did you or your family member do to keep going even when things got difficult?”
2. **Measurement**: Duckworth and Quinn (2009)

Duckworth and Quinn (2009)'s Grit Scale [0=not like me at all; 4=very much like me]:

1. New ideas and projects sometimes distract me from previous ones.
2. Setbacks don't discourage me. I don't give up easily.
3. I often set a goal but later choose to pursue a different one.
4. I am a hard worker.
5. I have difficulty maintaining my focus on projects that take more than a few months to complete.
6. I finish whatever I begin.
7. My interests change from year to year.
8. I am diligent. I never give up.
9. I have been obsessed with a certain idea or project for a short time but later lost interest.
10. I have overcome setbacks to conquer an important challenge.

<https://angeladuckworth.com/grit-scale/>

Experiment and main findings

► Run of show:

- ⇒ Manipulation (treatment=grit experience writing task; control=no action)
- ⇒ Experiment 1 (N=336): consecutive paired lotteries to capture λ (LA), σ (RA), α (subjective probability) **Tanka, Camere and Nguyen (2010)**
- ⇒ Experiment 2 (N=356): portfolio choice experiment to capture trading decisions (i.e., Disposition effect) **Frydman et al (2014), Bazley et al. (2019)**
- ⇒ Controls collected: demographics, emotions, ex-ante risk tolerance, financial literacy, numeracy, financial knowledge.

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► Main findings: $y_j = \alpha + \beta I_{grit,j} + \theta X_j + \epsilon_j$

1. **y=loss aversion:** $\beta < 0$
Loss aversion in the treatment group is lower.
2. **y=disposition effect:** $\beta < 0$
Disposition effect in the treatment group is weaker.

Super nice paper!

- ▶ Clear and polished writing; strong evidence; novel idea
- ▶ Provides a novel plausible determinant of loss aversion and disposition effect (among other determinants that have been studied in both Psychology and Behavioral Finance), that has policy implications (such as “grit” training through sports and deadlines etc).

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- ▶ *Next:* **Two extending thoughts**
 1. Mediation evidence
 2. Micro foundations

Mediation evidence

- ▶ All evidence currently follows: $y_j = \alpha + \beta_1 I_{grit,j} + \theta X_j + \epsilon_j$, where $I_{grit,j}$ is an indicator, while the story is that **Grit is a mediator**.

Mediation evidence

- ▶ All evidence currently follows: $y_j = \alpha + \beta_1 I_{grit,j} + \theta \mathbf{X}_j + \epsilon_j$, where $I_{grit,j}$ is an indicator, while the story is that **Grit is a mediator**.
- ▶ The experiments have been carefully designed and conducted, so I am proposing running a few more mediation test regressions (Baron and Kenny, 1986; Cohn et al, 2015; Huang and Xu, 2022):

$$GritScale_j = \alpha_0 + \beta_0 I_{grit,j} + \epsilon_j,$$

$$y_j = \alpha_1 + \beta_1 I_{grit,j} + \beta_2 GritScale_j + \theta \mathbf{X}_j + \epsilon_j,$$

where $I_{grit,j}$ (as before) is the indicator, and $GritScale_j$ (which I believe you already have constructed, according to the Grit Scale, as in Section 3.1.1) is each participant's *state of Grit* while he/she enters the financial decision questionnaire/game.

- ▶ If Grit is indeed a successful mediator, you should see that (1) β_0 is significant and positive; (2) β_1 significantly decreases once $GritScale_j$ is included.

Micro foundations

(comments for a potential future research direction)

- ▶ Grit is a relatively new concept to the Finance literature; if so, we want to understand micro-founded links, as the neural science has helped a lot in explaining the link between emotions and risk aversion (level [Lowenstein; Kuhnen-Knutson], cyclicalities [Cohn et al.], spillover [Huang-Xu]).

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- ▶ De Martino, Camerer, Adolphs (2010; PNAS) have novelly established that Amygdala damage eliminates monetary loss aversion. How does the brain process a loss? Can Grit relate to these regions?
- ▶ Sokol-Hessner, Camerer and Phelps (2013; SCAN): emotion regulation could reduce loss aversion through decreasing amygdala responses to losses.
[Link back to the identification:](#) Perhaps “state of emotions” is not the best competing mechanism, rather “stability of emotions” in the regressions; and it is conceivable that by **writing** it out and reflecting on past experiences (recall, control=no writing), it calms down the participant.

Minor / clarification comments

1. What are the “**topics**” or nature of the stories that participants wrote down? Imagine, given that investors are aware that this is a survey about financial decisions upon entry, this may influence their experience choices and some may write trading or wealth-making related experiences. If so, the channel might be explained through “**experience**”, and we know experiences influences preferences.
2. One can imagine manipulating the treatment group by showing them the same video or picture that demonstrates “grit” – as the authors mentioned say that marathons/sports show grit – and then let participants spend several minutes reflecting what they saw and whether they can relate to. This way, the “shock” can be precisely defined.
3. Is no writing or blank task the most choice for set up control groups?
4. Clarify timing and how exactly **ex-ante risk tolerance** was measures.
5. Might be worth asking what they think the goal of the experiment(s) is.
6. It would be useful to know how many subjects had to be excluded for each type of exclusion criterion.

Conclusion

- ▶ **The paper is insightful, empirically convincing, and easy to follow. Highly recommend!**
- ▶ **My comments:**
 1. Mediation evidence
 2. Micro foundations
 3. Other comments to think about (perhaps for future research)

Thank You!

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