

When Slowing Down Gets You Down: The Effect of Velocity on Frustration Over and Above Expectancy

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Introduction

- Psychological control theories emphasize the role of goal discrepancies in motivating goal-related behaviors (e.g., Carver & Scheier, 1998; Lord & Levy, 1994)
- However, Carver and Scheier (1990, 1998) also argued that individuals regulate **velocity**, or their **rate of progress toward the goal**; this velocity was theorized to be a primary determinant of one's affect during goal pursuit
- Some research has shown initial support for the influence of velocity on affective reactions (Hsee & Abelson, 1991; Hsee, Abelson, & Salovey, 1991; Lawrence, Carver, & Scheier, 2002)
- However, these studies have often confounded velocity with the projected likelihood of future success; in addition, little research has examined this process as it unfolds over time
- We argue that when velocity is slower than one expects, this should have an influence on negative affect (particularly frustration), independent of one's actual probability of success

Hypotheses

- We predict that individuals pursuing a goal at a “below-expected” velocity will experience greater frustration than individuals pursuing a goal at their expected velocity
- This frustration will occur independent of participants' expectancy of completing the task

Participants

- 72 participants from University of Waterloo (82% women)
- Age: $M = 19.88$, $SD = 1.77$
- Race: 41% Asian, 39% White, 20% Other

Figure 1. Example of sorted and unsorted database

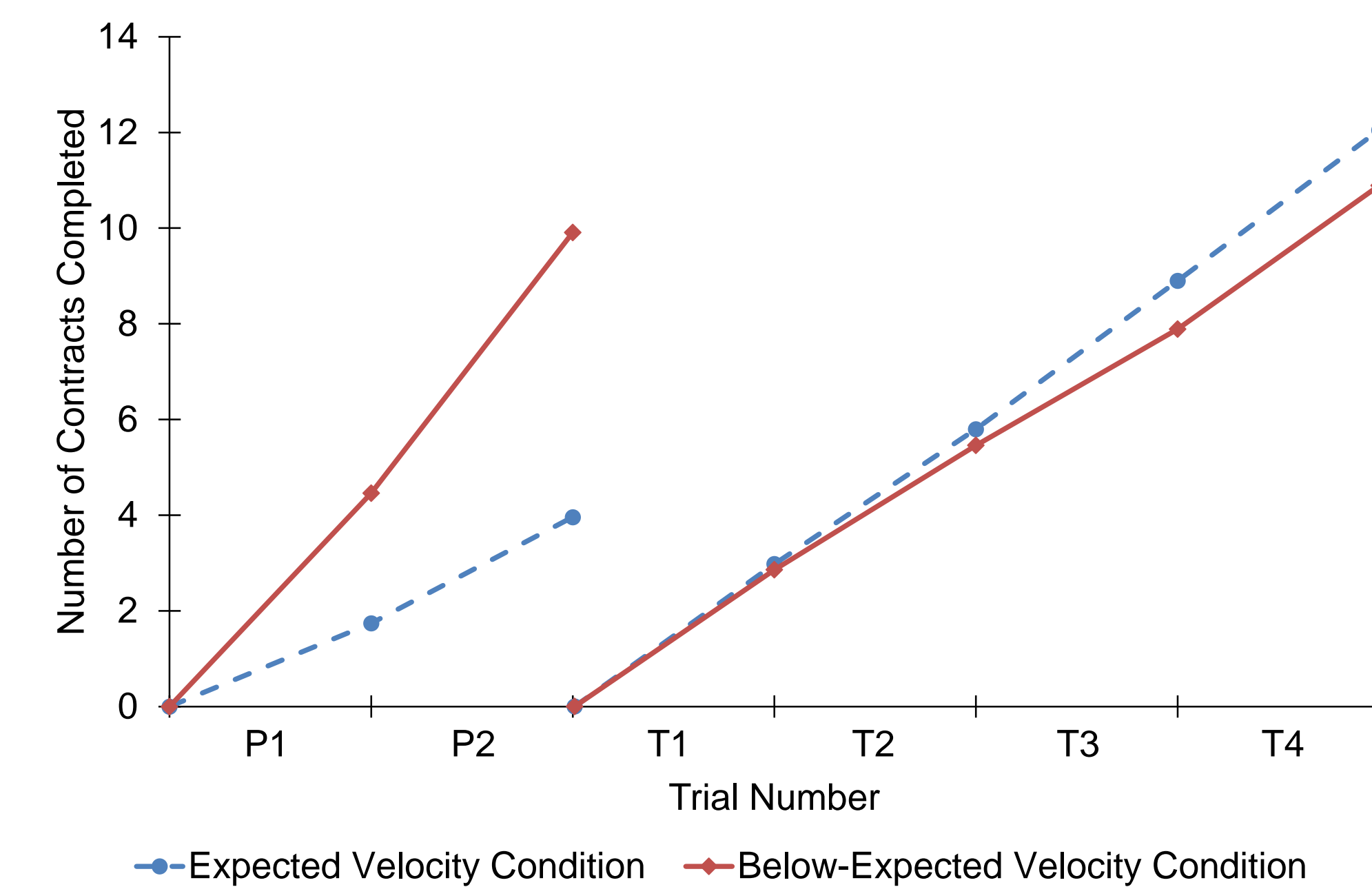
a) Portion of sorted database

x020501-81398	Abdulov	57,466	\$40,000	1
x010107-85672	Abdulov	40,547	\$39,000	0
x010102-42194	Adamski	95,342	\$39,000	0
x021002-24429	Adamski	83,471	\$36,000	0
x020702-36446	Anderson	70,346	\$37,000	1
x021001-82988	Anderson	70,583	\$40,000	0
x021002-32157	Biswas	48,463	\$37,000	0
x020901-71379	Biswas	77,516	\$39,000	0
x021001-33594	Biswas	59,189	\$37,000	0
x021002-92448	Biswas	80,548	\$40,000	0

b) Portion of unsorted database

x020601-44897	Miller	58,246	\$37,000	0
x020501-13648	Liu	62,549	\$36,000	0
x010104-51257	Rodriguez	50,430	\$38,000	1
x020301-82512	Lavoie	50,407	\$40,000	0
x010101-42487	Gauthier	86,734	\$38,000	1
x020401-31412	Wilson	78,783	\$38,000	0
x020701-16453	Taylor	88,465	\$39,000	1
x020701-98764	Hernandez	42,507	\$40,000	0
x020802-73136	Yang	58,670	\$36,000	1
x021002-32157	Biswas	48,463	\$37,000	0

Figure 2. Contracts completed for practice trials (P) and experimental trials (T)



Procedure

- Participants were given a “managerial task” for a large commercial trucking company
- Given a set of rules to decide how employment contracts for various drivers should be handled for the upcoming year; in particular, decided whether to renew (vs. terminate) contract, and if so, what salary to offer
- Participants were also given a goal to complete 16 contracts; if successful, they would receive \$5
- Participants had to retrieve information about each driver from a database and then apply the appropriate rules
- Task was divided into six trials lasting two minutes, with 10 contracts per trial
- Participants first completed two practice trials, which did not count toward their overall goal, and four experimental trials
- Velocity was manipulated as follows:

Expected velocity	Participants used an <i>unsorted</i> database throughout both the practice and experimental trials (slow velocity)
Below-expected velocity	Participants used a <i>sorted</i> database (fast velocity) for practice trials, and <i>unsorted</i> database (slow velocity) for experimental trials (see Figure 1)

- Thus, all participants used the same database for the experimental trials, and had the same goal to complete 16 contracts – in other words, same likelihood of success (see Figure 2)
- Expectancy* of reaching goal and *frustration* were measured once before the practice trials, and then again after each experimental trial, along with filler items

Results

Expectancy:

- We used multi-level modelling to regress expectancy on trial number, the manipulation, and their interaction
- There was a significant effect of trial on expectancy, $F(3,176) = 4.17$, $p = .01$; however, neither the manipulation nor the interaction had a significant effect on expectancy, $F_s < 1.00$

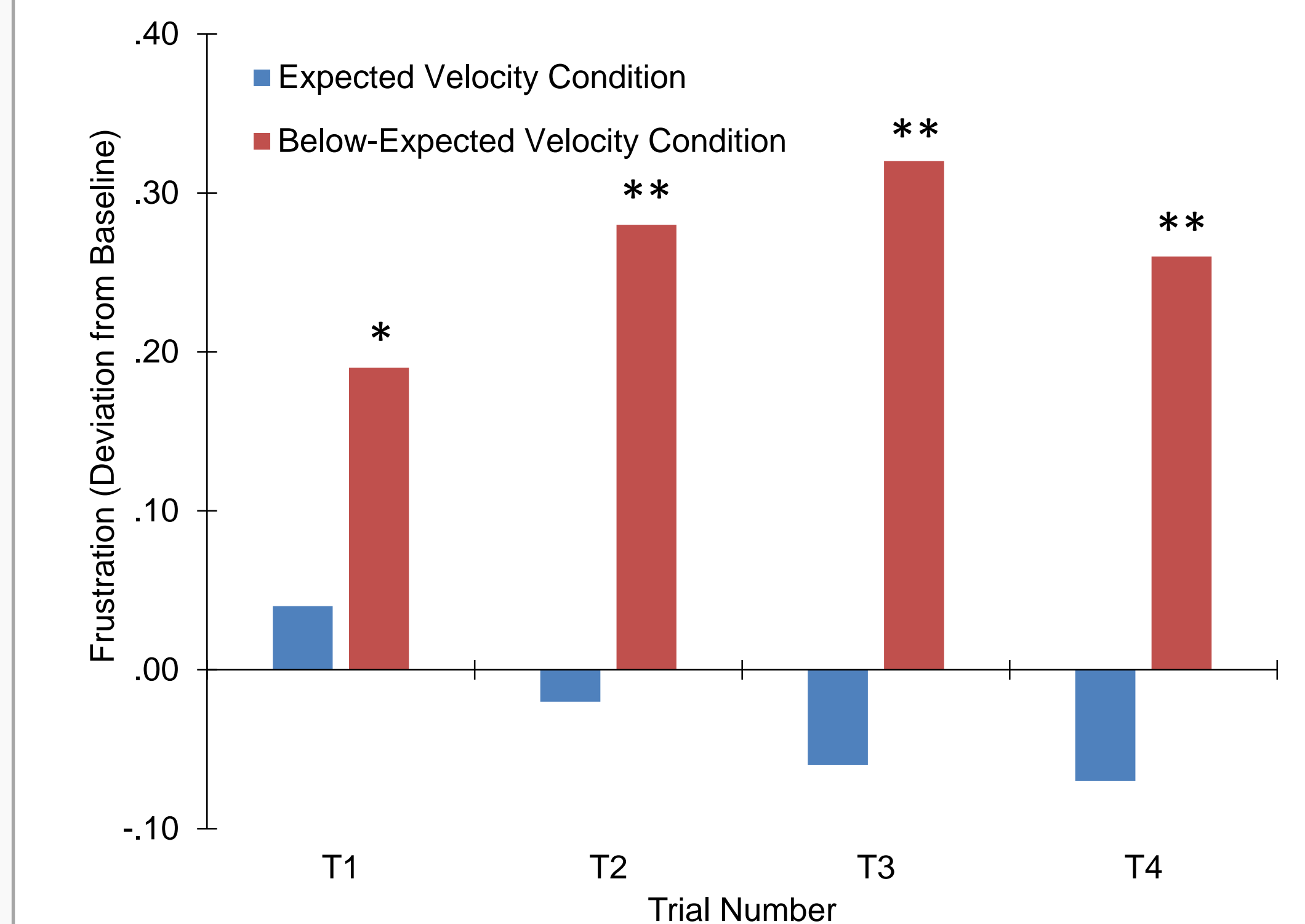
Frustration:

- We regressed frustration on trial number, the velocity manipulation, and their interaction
- There was no significant main effect of trial on frustration, $F(3,176) = .28$, $p = .84$
- Yet, as expected, there was a significant main effect of the velocity manipulation on frustration, $F(1,70) = 4.61$, $p = .03$ (see Figure 3)
- There was also a significant trial \times manipulation interaction, $F(3,176) = 2.77$, $p = .04$
- Frustration was not significantly different from baseline for participants in the expected velocity condition during any of the experimental trials
- However, participants in the below-expected velocity condition reported significantly higher frustration (relative to baseline) during all four experimental trials
- When controlling for expectancy, the main effect of the velocity manipulation on frustration remained significant, $F(1,70) = 4.96$, $p = .03$; it also remained significant when controlling for participants' actual performance on the task, $F(1,70) = 4.65$, $p = .03$

Conclusions

- Experiencing a negative change in velocity led to a significant increase in frustration
- This increase in frustration was sustained over time, across multiple trials
- This effect on frustration also occurred independent of participants' expected success: controlled both by experimental design (participants in both conditions experienced same velocity during experimental trials) and also controlled statistically (measured expectancy)
- Thus, velocity has important influences on affect, over and above any effects velocity has on performance and expected probability of success

Figure 3. Trial \times manipulation interaction on frustration



Implications

- This research speaks to the importance of considering velocity when examining goal regulation, especially how the rate of goal progress can influence affective responses over time
- This also may help to explain whether individuals persist or give up on goals after a velocity setback (negative change in rate of progress); even on tasks where success can still be reached, negative affect may lead to goal disengagement
- It will be important in future studies to examine how and when individuals *adapt* to changes in velocity

References

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