THE NEW SCHOOL FOR SOCIAL RESEARCH

You're Not Bored if Time Flies: Time Perception Affects Boring Task Appraisals

Department of Psychology

Emily R Weiss, MA* McWelling Todman, PhD Özge Pazar Sophia Mullens Kristin Maurer, MS Jonathan Sabbagh Andrea Singer, MA

Background

- **Boredom** is usually associated with the **feeling that time has slowed down**.[1]
- In the presence of **low levels of non-temporal information**, (e.g. in an uninteresting environment), more attentional resources may be available for temporal information. The more attentional resources devoted to attending to time, **the slower it seems to pass.**[2]
- **Boredom-proneness** (BP), the proclivity to become bored, is distinct from the affective experience of boredom (**state boredom** [SB]).[3]
- Both are associated with **slowed time perception**.
- **Individuals who are more prone to experiencing boredom** tend to **overestimate the passage of time**[4] and are less accurate in their estimates of duration in general.[4,5]
- Previous **time manipulation studies** have found:
  - The **passage of time** is **perceived** to be **slower** when a task is anticipated to be boring.[6]
  - When perceived **clock time is manipulated to pass slower** than anticipated,[6,7] the tasks at hand are rated **as more boring**.
  - **Conversely**, when perceived **clock time** is manipulated to pass **faster**, tasks are **rated more favorably**.[8]
- However, the aforementioned studies did not take into account **individual differences in experiences of boredom.**
- It is possible that the effect of a time manipulation on feelings of boredom occurs regardless of individual differences in boredom-proneness and recent levels of boredom, however, individual differences may cancel out these effects.

Purpose & Hypotheses

- This study aimed to extend previous time manipulation studies through the inclusion of validated boredom measures.
- We hypothesized that accelerated time progression would result in more positive ratings of a boredom induction tasks.
- We aimed to determine whether these effects are independent of individual differences in boredom proclivity and frequent boredom experiences.

Methods

Participants

- *N* = 68
- Recruited from Undergraduate and Graduate populations at a North-eastern university

Table 1. Demographics Means, Standard Deviation and Frequencies

	N(%)	*M(SD)*
Age		22.97(5.789)
Gender		
Female	55 (80.9%)	
Male	12 (17.6%)	
Missing	1 (1.5%)	
Race		
Asian	13 (19.1%)	
African American	1 (1.5%)	
Bi Racial	7 (10.3%)	
Caucasian	35 (51.5%)	
Latino Hispanic	8 (11.8%)	
Missing	3 (3.4%)	

Measures

- The Boredom Proneness Scale (BPS)[9]
- The State Boredom Measure (SBM)[10]
- The Boredom Attribution Scale (BAS)
- 7 point Likert scale measuring time perception (1 [*Time dragged*] - 7 [*Time flew*])[8]

Procedure

- Participants completed a boredom inducing vowel counting task for 10 minutes and were randomly assigned to 1 of 3 conditions:

  - Condition 1: Time Flies - Participants told they would count vowels for 15 minutes

  - Condition 2: Real Time - Participants told they would count vowels for 10 minutes

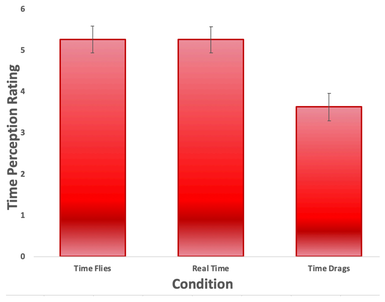
  - Condition 3: Time Drags - Participants told they would count vowels for 5 minutes
- Immediately following task, participants were asked to rate time perception via the Likert scale and appraisals of the task via the BAS

Results

	Condition	Time Rating	BAS	SBM	BPS	Age
Condition	—					
Time Rating	−0.39 **	—				
BAS	0.33 **	−0.33 **	—			
SBM	0.10	−0.09	0.30 *	—		
BPS	0.09	−0.04	0.34 **	0.62 ***	—	
Age	−0.09	−0.05	−0.29 *	−0.10	−0.20	—

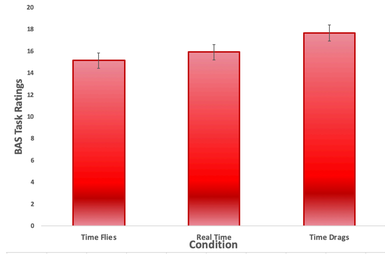
Note. * p < .05, ** p < .01, *** p < .001

- BAS ratings were positively correlated with SBM and BPS scores, and negatively correlated with age



The effect of condition on perceived time progression was significant, $F(2, 65) = 8.32$, $p = .001$, $\eta_p^2 = .20$. Error bars represent SE.

- Participants in the Time Drags condition ($M = 3.62$, $SE = .33$) perceived time as progressing significantly slower than participants in the Time Flies ($M = 5.26$, $SE = .32$; $M_{diff} = -1.64$, $p = .002$, 95% CI [-2.78, -.51]) and Real Time conditions ($M = 5.25$, $SE = .31$; $M_{diff} = -1.63$, $p = .002$, 95% CI [-2.75, -.51]).
- Real Time and Time Flies conditions did not differ significantly from each other ($M_{diff} = .011$, p = ns, 95% CI [-1.01, 1.11]).



The effect of condition on BAS ratings was significant, even when controlling for BPS, SBM, & age, $F(2, 65) = 3.23$, $p = .047$, $\eta_p^2 = .10$. Error bars represent SE.

- Participants in the Time Drags provided significantly more negative task ratings ($M = 17.64$, $SE = .73$) compared to participants in the Time Flies condition ($M = 15.13$, $SE = .69$; $M_{diff} = 2.51$, p = .046, 95% CI [.31, 4.99]).
- None of the other conditions differed significantly from one another.

Discussion

- This study replicated previous findings that perceived time progression affects hedonic appraisal of a task.[8]
- This study extends previous research through taking into consideration participants' individual differences in demographics, propensity to experience boredom, as well as recent experiences of state boredom.
- Both boredom-proneness and recent state boredom were positively correlated with negative ratings of the boredom induction task, while age was negatively correlated with the task's perceived aversiveness.
- However, even when controlling for these variables, the time manipulation remained effective, and task ratings differed significantly as a function of perceived time progression.
- This suggests that, above and beyond individual differences in the experience of boredom, the perceived acceleration of time can indeed make a boring task seem less adverse.

References

1. Raffaelli, Q., Mills, C., & Christoff, K. (2017). The knowns and unknowns of boredom: a review of the literature. Experimental brain research, 1-12.
2. Zakay, D. (2014). Psychological time as information: the case of boredom. *Frontiers in Psychology, 5*, 917. doi: 10.3389/fpsyg.2014.00917
3. Todman, M. (2003). Boredom and psychotic disorders: Cognitive and motivational issues. *Psychiatry, 66,* 146-167.
4. Danckert, J. A., & Allman, A. A. A. (2005). Time flies when you're having fun: Temporal estimation and the experience of boredom. Brain and Cognition, 59(3), 236-245. doi:10.1016/j.bandc.2005.07.002
5. Watt, J. D. (1991). Effect of boredom proneness on time perception. *Psychological Reports, 69*(1), 323-327.
6. Sucala, M., Stefan, S., Szentagotai-Tatar, A., & David, D. (2010). Time flies when you expect to have fun. An experimental investigation of the relationship between expectancies and the perception of time progression. *Cognition, Brain, Behavior. An Interdisciplinary Journal, 14*(3), 231-241.
7. London, H., & Monello, L. (1974). Cognitive manipulation of boredom (pp. 239-239). Aldine: Oxford, UK.
8. Sackett, A. M., Meyvis, T., Nelson, L. D., Converse, B. A., & Sackett, A. L. (2010). You're having fun when time flies: The hedonic consequences of subjective time progression. *Psychological Science, 21*(1), 111-117. doi: 10.1177/0956797609354832
9. Farmer, R., & Sundberg, N. D. (1986). Boredom proneness--the development and correlates of a new scale. *Journal of personality assessment, 50*(1), 4-17.
10. Todman, M. (2013). The dimensions of state boredom: Frequency, duration, unpleasantness, consequences and causal attributions. *Education Research International, 1*(1), 32-40.

Correspondence regarding this poster should be addressed to: EmilyRWeiss@newschool.edu