

Using the Stroop as a Measure of Social Media Bias and Its Relationship to Gratitude, Contentment, and FOMO

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Introduction

- Social media use has been **on the rise**, particularly amongst adolescents (Maheux et al., 2021).
- FOMO seems to be influential in attentional bias to social media (Wang et al., 2024).
- Addictive behaviors like social media addiction are **negatively correlated** with protective factors such as gratitude and life satisfaction, according to one study (Shoshani et al., 2024).
- The broaden-and-build model of positive emotions suggests that positive emotions, including gratitude and contentment, expand one's attentional and cognitive repertoire (Fredrickson & Joiner, 2002).
- Stroop task has been used as a **measure of attentional bias** (Cane et al., 2008). The present study uses a modified version of the Stroop Task to measure attentional biases toward social media.

Purpose & Hypothesis

- The purpose of the present study was to determine if there is a **relationship** between social media bias, gratitude, FOMO, and contentment, using the Stroop task as a measure of social media bias.
- H1:** It was predicted that **higher gratitude** would be associated with less attentional bias toward social media stimuli.
- H2:** It was predicted that **higher contentment** (PEACE) would be associated with less attentional bias toward social media stimuli.
- H3:** It was predicted that **higher FOMO** would be associated with greater attentional bias toward social media stimuli.

Method

Participants

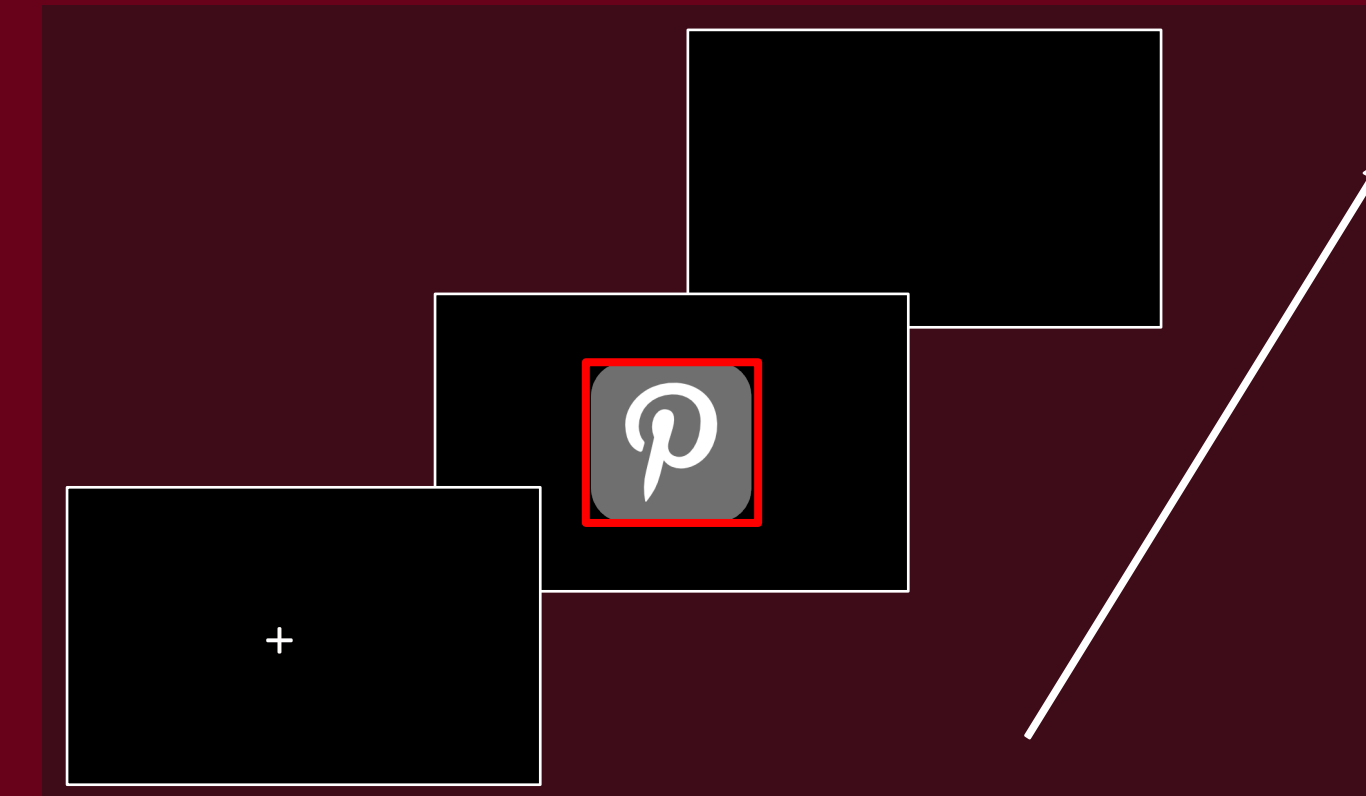
- $N = 68$ undergraduate students at Biola University
- Mean Age: 20.07, $SD = 1.68$; 17 Males; 51 Females
- Demographics: 38.2% Caucasian, 26.5% Latino, 16.2% Asian/Asian American, 16.2% multi-ethnic, 1.5% Black/African American, and 1.5% Middle Eastern

Procedure

- Participants completed the gratitude questionnaire using Qualtrics (Gratitude Questionnaire–6).
- Afterwards, participants completed a randomized, computer-based modified Stroop task.
- Lastly, participants completed the 10-item FOMO scale and PEACE Scale using Qualtrics.

Materials

- The modified Stroop used social media and non-social media images, requiring participants to identify the color of a surrounding frame.
- Gratitude was assessed using the Gratitude Questionnaire–6 (GQ-6; McCullough et al., 2002), a 6-item measure designed to evaluate gratitude.
- Contentment was measured using the PEACE Scale (Cordaro et al., 2021). Participants rated their agreement with statements reflecting a sense of peace, acceptance, and satisfaction with life, using a Likert-type scale.
- Fear of missing out (FOMO) was assessed using the 10-item FOMO Scale (Przybylski et al., 2013). Using 5 response anchors, this questionnaire measured how one feels when absent from different experiences.



Example of Stroop task

Results

Table 1: Stroop and Measures Correlations

Variable	S-NS Diff	Total Gratitude-6	PEACE Total	FOMO Total
1. S-NS Diff	—			
2. Total Gratitude-6	-0.278*	—		
3. PEACE Total	0.176	0.512***	—	
4. FOMO Total	-0.169	-0.243	-0.217	—

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

Note. S-NS Diff is the difference in reaction time between social media and non-social media stimuli on the Stroop task.

- Negative correlation** between **gratitude** and the difference between **social media RT** and **non-social media RT**.
- Positive correlation** between **gratitude** and **PEACE**
- We found no significant correlation between PEACE and the difference between social media RT and non-social media RT.
- We found no significant correlation between FOMO and the difference between social media RT and non-social media RT.

A paired samples t-test revealed **no significant difference** between social media reaction time ($M = 717.96$ ms, $SD = 99.61$) and non-social media reaction time ($M = 714.78$ ms, $SD = 102.91$), $t(66) = 0.652$, $p = 0.517$.

Discussion

- There was **no significant difference** between reaction times to social media and non-social media icons, suggesting no detectable attentional bias toward social media stimuli.
- A negative correlation between gratitude and reaction time difference indicates that higher gratitude was associated with reduced attentional bias, **supporting H1** and **aligning with the broaden-and-build model of positive emotions**.
- No significant correlations were found for PEACE or FOMO with reaction time difference, **leaving H2 and H3 were not supported**.
- A positive correlation was observed between gratitude and PEACE, suggesting that **greater gratitude is linked to higher contentment**.
- Future research should further investigate the potential for attentional biases toward social media, potentially using more salient or colorized stimuli.

Implications

- Gratitude may serve as a **protective factor** by reducing attentional bias toward social media, suggesting potential applications for promoting healthier media habits.
- Interventions focused on **enhancing** gratitude could be explored as strategies for **reducing problematic** social media use.
- Further research is required to understand what factors contribute to the absence of attentional bias toward social media stimuli.
- Potentially, future research could consider **alternative forms** of engaging stimuli to capture possible attentional biases in experimental settings.

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