Agreeableness predicts good interpersonal self-regulation (Zuck & Moskowitz, 2014) and self-control (Jensen-Campbell et al., 2002).

Highly agreeable individuals experience stronger negative emotions and expend more effort trying to control their negative emotions (Tobin, Graziano, Vanman, & Tassinary, 2000).

Highly agreeable persons appear to use ineffective emotion regulation strategies. How do their emotions change if their capacity to regulate emotion is reduced?

Using self-control impedes later attempts at self-control (i.e., ego depletion; see Baumeister, Vohs, & Tice 2007).

We measured emotional responding under ego depletion using the startle eye-blink response - a measure of emotional reactivity to negative (larger blinks) and positive (smaller blinks) stimuli (Lang, Bradley, & Cuthbert, 1998).

Hypothesis 1: Higher agreeableness will predict a more extreme version of the emotion-modulated startle pattern.

Hypothesis 2: Ego depletion will attenuate the more extreme emotion-modulated startle pattern among highly agreeable individuals.

Method

71 undergraduates (36 females) participated for course credit.

Self Control Manipulation

Participants spent 5 minutes writing a short story about a recent trip they had taken. Participants in the free writing condition simply wrote a story. Participants in the controlled writing condition received additional instructions to not use the letters A or N in the story (see Schmeichel, 2007).

Startle Paradigm

Participants then donned headphones and viewed 60 IAPS images (Lang, Bradley, & Cuthbert, 2008) while facial electromyography (EMG) was recorded. See Figure 1.

Startle probes: 50 ms, 102 dB bursts of white noise presented through headphones during 10 negative, 9 positive and 10 neutral images either 3.5 or 4.5 seconds after picture onset.

Startle eye-blink responses were recorded using two 9-mm tin electrodes (Electro-Cap International, Eaton, OH) placed over the left inferior orbicularis oculi below the inner and outer canthi (Blumenthal et al., 2005)

Startle eye-blink magnitudes were standardized within participants and averaged by picture type (negative, positive, or neutral) and transformed into t-scores.

Results

A 2 (writing condition) × 3 (picture type) repeated-measures ANOVA on startle eye-blink magnitudes found only a significant within-subjects effect of picture type, $F(2,138) = 10.71, p < .001, \eta_p^2 = .13$, which replicated the standard emotion-modulated startle pattern ($M_{\text{neg}} = 51.70, M_{\text{neut}} = 50.36, M_{\text{pos}} = 49.41$).

Negative Startle Analyses

A regression predicting startle magnitudes during negative pictures from startles during neutral pictures (centered), writing condition (coded 0 = free writing, 1 = controlled writing), agreeableness score (centered), and the Writing Condition × Agreeableness interaction revealed the predicted interaction effect, $t(66) = 2.00, p = .049$.

The simple slopes for individuals low in agreeableness (1 SD below the mean) and individuals high in agreeableness (1 SD above the mean) were examined. The slope for individuals high in agreeableness was significant, $t(65) = 2.29, p = .032$, whereas the slope for individuals low in agreeableness was not significant, $t(65) = 0.49, p = .495$. See Figure 2.

Positive Startle Analyses

The multiple regression analysis above was repeated using positive picture startle magnitudes as the criterion variable. Here again the Writing Condition × Agreeableness interaction was significant, $t(66) = 2.34, p = .022$.

The simple slopes analysis indicated that a significant pattern among individuals high in agreeableness, $t(65) = 2.18, p = .032$, but not among individuals low in agreeableness, $t(65) = 1.18, p = .241$. See Figure 3.

Summary & Discussion

Hypothesis 1 was confirmed. Highly agreeable individuals showed an extreme emotion-modulated startle eye-blink pattern in the free writing condition.

Hypothesis 2 was confirmed. Exercising self-control on a previous task attenuated the more extreme version of the emotion-modulated startle eye-blink pattern among highly agreeable individuals.

Startle responses during negative pictures suggested that agreeable individuals ineffectively attempt to control their negative emotions.

Startle responses during positive pictures suggested that highly agreeable individuals effectively control their positive emotions.

Additional research is needed to determine how highly agreeable individuals regulate their emotions differently than individuals lower in agreeableness.

Individual Difference Measure

Last, participants completed a series of questionnaires including the 50-item big-five factor questionnaire (Goldberg, 1990). This questionnaire included a 10-item measure of trait agreeableness ($M = 38.94, SD = 6.25, \alpha = .80$).

References


