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Coping with sadness - How personality and emotion regulation strategies differentially predict the experience of induced emotions

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ABSTRACT

Dealing with negative emotions is a challenge of everyday life. Personality, specifically neuroticism, predicts how susceptible we are to experiencing negative emotions, whereas negative emotions can, in turn, bias self-rated personality. Emotion regulation research has shown how people effectively regulate when experiencing negative emotions. In this experiment, we examined if personality and emotion regulation strategies predict redundant or different aspects of dealing with sadness, and how sadness affects self-rated personality.

Toward this aim, 82 participants were measured twice with a lag of one month. Self-rated personality and emotion regulation strategies were assessed in the neutral and sad emotional state. Results showed a bi-directional relationship: Sadness led to decreased extraversion and elevated neuroticism scores, whereas neuroticism predicted the susceptibility to sadness. Conversely, emotion regulation strategies did not correlate with susceptibility to sadness, but expressive emotional suppression was linked to a slower remission.

In line with a more dynamic view of personality, a bi-directional relationship between sadness and neuroticism could be validated, whereas remission of sadness was linked to emotion regulation strategies. Effective emotion regulation strategies, which are alterable by psychotherapeutic approaches, might be of special interest for people with high neuroticism scores who often experience negative emotions.

1. Introduction

Dealing with negative emotions is a challenge for all individuals, beginning in early childhood (Kopp, 1989) and proceeding throughout life (Jopp & Schmitt, 2010). Indeed, a critical, negative life event can have long-lasting consequences, including the experience of ongoing negative emotions (Diener, Lucas, & Scollon, 2006). Overcoming negative emotions is important for individuals' overall health and performance (Brunyé et al., 2013). However, there are differences in the way individuals deal with negative emotions: Some people seem to suffer longer and more often from negative emotions than do others. Many studies have focused on the interindividual differences in responsiveness to negative emotions, of which personality and emotion regulation strategies are thought to be imperative (e.g. Ehring, Tuschen-Caffier, Schnülle, Fischer, & Gross, 2010; Komulainen et al., 2014; Rusting & Larsen, 1997; Webb, Miles, & Sheeran, 2012).

Personality research has identified stable traits that are able to predict how people behave throughout their lifespan (Hampson & Goldberg, 2006; Lucas & Donnellan, 2011), and which also have been revealed to exhibit a genetic basis (Tellegen et al., 1988). Personality traits, in contrast to affect ratings or life satisfactory ratings, were found to be highly stable when repetitively assessed during a period of two months (Anusic, Lucas, & Donnellan, 2012). For personality traits, a model assuming that differences between individuals are fully stable or specific to each measurement could explain the data similarly good compared to a model allowing transient changes, i.e. accumulation of changes from one measurement to the next (Anusic et al., 2012). However, retest reliability of the Big Five traits has shown that up to 42–52% of the variance is unexplained, pointing to a more dynamic view of personality (Viswesvaran & Ones, 2000). A proportion of this measurement variance can be related to methods of measurement, including, for example, self- vs. observer ratings (Allik et al., 2010), or self-ratings vs. interviews (Lang, John, Lüdtke, Schupp, & Wagner, 2011). Still, systematic contextual influences also have been found, altering self-reported personality: for example, when participants are asked to imagine different social roles, self-rated scores change in reference to these roles (Donahue & Harary, 1998). Similarly, emotional states influence self-reported Big Five traits, such that happiness is related to higher extraversion values and sadness to elevated neuroticism scores (Querengässer & Schindler, 2014).

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However, emotions not only seem to affect self-reported personality, but personality itself also seems to explain how people differ in their experiences of emotions. Of particular interest in this regard is neuroticism. By definition, individuals with high levels of neuroticism are described as emotionally unstable and easy to irritate. Recent research has shown that there is a bi-directional relationship between neuroticism and negative emotions (Querengässer & Schindler, 2014). Specifically, the induction of sadness has led to elevated neuroticism levels, but conversely, higher levels of neuroticism at baseline have predicted the responsiveness toward sadness induction (Querengässer & Schindler, 2014). Studies have shown correlations of neuroticism with habitual anxiety and negative affect (Clark & Watson, 1999; Watson & Clark, 1992), and also co-occurrence with measures of depression and anxiety (Jylhä & Isometsä, 2006). In a sample of 441 participants, Jylhä and Isometsä (2006) found that neuroticism and Beck's Depression Inventory (BDI) and Anxiety Inventory (BAI) values correlated highly. However, as no longitudinal data is available, no causal relationship can be hypothesized. Experimental work has shown that neuroticism is a good predictor one's susceptibility to experience negative emotional states. Neuroticism predicted self-rated negative affect on the Positive And Negative Affect Scale (PANAS) after negative emotion induction through written imaginary scenarios (Larsen & Ketelaar, 1991; Rusting & Larsen, 1997). Further, in an experience sampling study, participants had to list their daily events and rate their current emotional state on a number of adjectives. Here, the number of positive daily events correlated negatively with neuroticism, whereas neuroticism was positively related to negative emotional self-ratings and with a larger variability of self-rated emotional states. Remarkably, neuroticism predicted more negative ratings of emotional state in response to negative daily events (Komulainen et al., 2014). This is interesting insofar as a recent meta-analysis related within-subject variability of emotional self-ratings with various measures of well-being: Here, a higher degree of variability in emotional states, especially for different negative emotional states, was associated with negative well-being (Houben, Van Den Noortgate, & Kuppens, 2015). Finally, neuroticism also seems to affect retrospective estimations of negative emotions (Mill, Realo, & Allik, 2015). In an experience sampling study, participants indicated their subjective emotional state over a period of two weeks. Each evening, and at the end of testing, they were asked to judge their average emotional state. Interestingly, variables such as tiredness predicted the daily estimates, whereas neuroticism correlated with the retrospectively rated negative emotional states for the entire testing phase (Mill et al., 2015). Summing up the research, higher levels of neuroticism have been linked to both a higher variability of negative emotional states and stronger responsiveness toward negative emotional states, resulting in more frequent experiences of negative emotions.

From another angle, extensive research has focused on emotion regulation, answering how people deal with emotions. In adulthood, emotion regulation is often accessed as a trait (John & Gross, 2004). Indeed, there are individual differences in the habitual, but spontaneous, use of emotion regulation strategies. For example, people with a history of depression seem to rely more on expressive emotional suppression, which unfortunately has been found to be rather ineffective for reducing the experience of sadness (Ehring et al., 2010). Further, in contrast to controls, depressed individuals seem to choose exposure to stimuli that maintain sadness (Millgram, Joormann, Huppert, & Tamir, 2015). Although fine-grained definitions exist (Webb et al., 2012), research on emotion regulation often has differentiated between reappraisal and expressive suppression of the emotional experience (Gross, 1999). Participants using reappraisal seem to experience more positive emotions, whereas those using expressive suppression seem to experience more negative emotions (Gross & John, 2003) and stronger physiological responses (Gross, 1998). A recent meta-analysis showed that emotion regulation strategies are not equally successful for all types of emotion (Webb et al., 2012). Emotion regulation strategies seem to be especially effective regarding both amusement and sadness. However, expressive suppression seems to affect mostly observable emotional responses, though not reducing the experience of the emotion itself. Alternatively, reappraisal also successfully regulates the experience of a given emotion, mostly obtained by means of self-reports (Webb et al., 2012).

So far, not much research has focused on the interplay between emotion regulation strategies, personality, and emotional states. In an online survey, measured neuroticism levels correlated negatively with cognitive reappraisal, whereas both were related to negative affect (Wang, Shi, & Li, 2009). Although showing a connection of both emotion regulation strategies and neuroticism to negative affect, due to the cross-sectional correlational approach, it is unclear how both predict similar aspects of dealing with negative emotions, especially if emotional responsiveness and remission can be similarly predicted by both variables.

In the current study, we expected to replicate our prior findings of a bi-directional relationship of neuroticism and sadness. We experimentally induced sadness, which should lead to decreased self-reported extraversion and elevated neuroticism scores. Alternatively, neuroticism measured in a neutral state should, in turn, predict the susceptibility to experience sadness. Additionally, we explored the influence of emotion regulation strategies toward susceptibility and remission of self-rated sadness. To this end, in multivariate linear regression models, the immediate emotional reaction and its remission over time will be predicted by neuroticism and emotion regulation strategies.

2. Methods

2.1. Participants

A total of 82 participants were recruited at the Bielefeld University. Participants gave written informed consent and received course credit for participation. One participant had to be excluded due to drop-out between the first and second measurement. The resulting 81 participants were, on average, 24.19 years of age (SD = 7.24), and 68 of them were female. For one participant, emotion regulation information was missing. A priori power analyses showed that sampling 76 participants resulted in a power of > 90% for replicating neuroticism value differences between the sad and neutral emotional state (d = 0.34), as well as replicating the correlation of neuroticism and susceptibility to sadness (r = 0.37; Querengässer & Schindler, 2014). The study protocol was approved by the local ethics committee of the Bielefeld University.

2.2. Procedure

The experiment largely matched the study design of Querengässer and Schindler (2014). All participants attended the experiment twice, with a time lag of one month (M = 31.95 days, SD = 16.61, min = 12; max = 112), and with counterbalancing of the order of conditions. Subsequently, all further instructions were given via a PowerPoint presentation to avoid instructor effects. Fig. 1 provides an overview of the experimental course in both conditions. Questionnaires were filled out using pen and paper.

In each condition, before starting with the questionnaires, participants responded to the item “Right now I feel a strong sadness,” ranging from 0 (*strongly disagree*) to 6 (*strongly agree*). This was used both as a manipulation check and—after sadness induction—as an indicator of the susceptibility to sadness (S1). This rating was repeated at the end of testing (S2/N2, on average, 15 min after S1/N2). The difference between S1 and S2 was used to calculate the remission of experiencing sadness. Afterwards, participants were asked to answer the NEO-FFI and the Emotion Regulation Questionnaire (ERQ) by Gross and John (2003). Importantly, before responding to the NEO-FFI at each condition, participants were asked to describe their personality, *in general*, as accurately as possible.