High ANGER and low agreeableness predict vengefulness in German and Chinese participants

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Previous studies have found that high neuroticism, low agreeableness, as well as high anger are associated with vengefulness. The aim of the present study was to investigate these associations in more detail. For example, we have included the extent to which trait ANGER may be associated with vengefulness by using the Affective Neuroscience Personality Scales (ANPS), which identify biological correlates of ANGER; hence, possibly also vengefulness. Additionally, the data were assessed in two culturally distinct nations to find generalizable associations. Parallelized samples recruited from Germany (n = 252) and China (n = 252) completed the Transgression-Related Interpersonal Motivations Inventory (TRIM-12), the Vengeance Scale, the 42-item Big Five short-scale, which assesses several sub-facets of the Big Five personality factors, and the ANPS. Amongst others, results indicate similar patterns in both nations to explain vengefulness; namely (high) ANGER and (low) agreeableness as significant predictors for both vengefulness scales across cultures/nations. Possible mechanisms associated with vengefulness across cultures are discussed. Additionally we share our German and Chinese versions of the TRIM-12 and the Vengeance Scale and our Chinese version of the ANPS.

\section{1. Introduction}  

The study of individual differences in vengefulness is of importance, especially as news reports are full of stories of diverse transgressions and interpersonal offenses. Commonly it is reported that one key motive for deviant behavior and committing crimes is revenge seeking (e.g. examples mentioned by Frijda, 2007; Kivivuori, Savolainen, & Aaltonen, 2016; Lubree, Nijman, Van Marle, & Rassin, 2010). Our aim was to investigate revenge seeking more deeply and systematically from a personality psychology perspective and to compare the results between different cultures/nations. Although past research suggests that vengeful acts are common across cultures (e.g. Heinrich et al., 2006), it is not yet clear which traits are robustly related to vengefulness and which relationships are different between cultures/nations.

1.1. Vengefulness  

Govier defined revenge seeking as follows: “When we seek revenge, we seek satisfaction by attempting to harm the other (or associated persons) as a retaliatory measure.” (Govier, 2002, p. 2). Additionally, the motive to see the transgressor suffer seems to be important for revenge taking (Schumann & Ross, 2010). In addition to situational factors, studies highlighting cross-situational consistency in motivations to seek revenge indicate that the desire to do so can be understood as a personality trait (McCullough, Bellah, Kilpatrick, & Johnson, 2001; McCullough & Hoyt, 2002; Stuckless & Goranson, 1992). Accordingly, in this project the term vengefulness will be used to describe dispositional differences in the attitude and motivation to seek revenge between individuals.

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1.2. Individual differences in the Big Five and vengefulness

The personality factors neuroticism and agreeableness of the Big Five are of particular importance in relation to vengefulness. Several studies using different questionnaires have already reported positive correlations between vengefulness and neuroticism. In contrast, agreeableness was found to be negatively associated with vengefulness (Bellah, Bellah, & Johnson, 2003; McCullough et al., 2001). One study also found that conscientiousness was negatively associated with vengefulness (McCullough et al., 2001).

1.3. Individual differences in primary emotional traits and vengefulness

Based on abundant neuroscientific research, Jaak Panksepp’s group has attempted to model the emotional foundations of human personality and constructed the Affective Neuroscience Personality Scales (ANPS) assessing six primary emotional traits (PETs) (Davis & Panksepp, 2011; Davis, Panksepp, & Normansell, 2003; Panksepp, 1998, 2006, 2011).

Particularly the PET ANGER should be strongly positively correlated with vengefulness, because in previous empirical studies, state anger has been associated with revenge seeking (e.g. Seip, Van Dijk, & Rotteveel, 2014) and also dispositional anger (as measured with questionnaires other than the ANPS) has been associated with dispositional vengefulness (Denson, Pedersen, & Miller, 2006; Eisenberger, Lynch, Aselage, & Rohdieck, 2004; Stuckless & Goranson, 1992). Moreover, individual differences in PETs were found to be closely linked to differences in the Five Factor Model (FFM) / Big Five, such as high scores in FEAR, ANGER and SADNESS being positively related to neuroticism (Davis & Panksepp, 2011; Montag & Panksepp, 2017). In addition, the CARE scale was reported to be positively and ANGER negatively associated with agreeableness (Davis & Panksepp, 2011; Montag & Panksepp, 2017). Given the above reported links between neuroticism, agreeableness and vengefulness, positive correlations between the negative PETs and vengefulness and negative correlations between CARE and vengefulness should be expected.

1.4. Data collection in two nations with different cultural backgrounds

Different cultural influences could be of importance in the context of vengefulness for several reasons. For example, different social/cultural norms as well as cultural and religious values internalized through upbringing could influence how individuals interpret and judge initial transgressions and (thereon) also their personal seeking for revenge

and vengefulness (Davis & Panksepp, 2011; Montag & Panksepp, 2017). In the introduction, the CARE scale was reported to be positively and ANGER negatively associated with agreeableness (Davis & Panksepp, 2011; Montag & Panksepp, 2017). Given the above reported links between neuroticism, agreeableness and vengefulness, positive correlations between the negative PETs and vengefulness and negative correlations between CARE and vengefulness should be expected.

In conclusion, we sought to identify and compare the (primary emotional) personality underpinnings/correlates of vengefulness across diverse cultures. We expected low agreeableness, high neuroticism and high ANGER to be most robustly linked to higher vengefulness.

1.4. Data collection in two nations with different cultural backgrounds

Different cultural influences could be of importance in the context of vengefulness for several reasons. For example, different social/cultural norms as well as cultural and religious values internalized through upbringing could influence how individuals interpret and judge initial transgressions and (thereon) also their personal seeking for revenge and vengefulness (e.g. Cota-McKinley, Douglas Woody, & Bell, 2001; Schumann & Ross, 2010; Shteynberg, Gelfand, & Kim, 2009). Additionally, attitudes toward revenge acts themselves can differ between cultures and influence the personal desire for revenge seeking and vengefulness on a dispositional level. As an example: in some cultures blood feud/revenges (Sadiku, 2014) and/or “honor” crimes still seem to be acceptable (Eisner & Ghuneim, 2013). Furthermore, different cultures/nations vary in terms of their external justice systems, which may or may not punish transgressors/revenge acts. This in turn could influence personal revenge seeking (e.g. observations by Aquino, Tripp, & Bies (2006) in a work context) and vengefulness on a dispositional level. However, for the present study comparing German and Chinese subjects, the individualism/collectivism dimension of Hofstede’s theory might be of particular importance. One could assume that agreeableness would be i) higher as a personality trait in a Chinese sample (“Eastern”, collectivistic) vs. in a German sample (“Western”, individualistic) and ii) a stronger (negative) predictor for vengefulness in a Chinese sample compared to a German sample. (https://geert-hofstede.com/china.html; https://geert-hofstede.com/germany.html).

Agreeable people possibly renounce personally motivated revenge seeking to maintain harmony in the society, which is in line with collectivist cultural thinking. On the other hand given findings showing that Chinese participants actually show smaller agreeableness scores compared to German and American participants (Melchers et al., 2016; Sindermann et al., 2016), one has to be cautious to make assumptions about differences in personality (associations) based on putative differences on a cultural level. Next to differences, also similarities between cultures/nations are of great interest. If in samples from different cultures, the same associations between vengefulness and Big Five personality factors and PETs can be found, then this could argue for culturally-independent underpinnings.

In conclusion, we sought to identify and compare the (primary emotional) personality underpinnings/correlates of vengefulness across diverse cultures. We expected low agreeableness, high neuroticism and high ANGER to be most robustly linked to higher vengefulness. Given our discussion concerning the necessity for caution in predicting personality differences based on cultural differences, we refrained from making a directed hypothesis regarding specific cultural effects.

2. Materials and methods

2.1. Sample

In Germany as well as in China participants were recruited at universities. Interested people were invited to take part in an online survey that included inter alia the questionnaires presented here. In total \(N = 372\) participants were recruited in Germany and \(N = 615\) in China. The participants from Germany and China were matched regarding sex and age. Each participant for whom no sex and age matched participant from the other culture/nation could be found, was excluded. In the end a sample of \(N = 504\) participants (\(n = 93\) males and \(n = 159\) females per nation (in total \(N = 252\) participants per nation)) remained. Mean age (in both samples) was 21.67, \(SD = 2.49\). Age did differ significantly between sexes in both the German and the Chinese sample (\(t(250) = 3.24, p = 0.001\); males being older than females).

The local ethics committees at Ulm University, Ulm, Germany and the University of Electronic Science and Technology of China, Chengdu, China both approved the study. All participants gave informed electronic consent to participate in the study before filling in the questionnaires online.

2.2. Questionnaires

The reliabilities of all questionnaires/scales are presented in Table 1. Our research team translated the TRIM-12 and the Vengeance Scale in German and Chinese and the Chinese versions of the 42-item BigFive short-scale and the ANPS. For future research purposes, the German/Chinese version(s) of the TRIM-12, the Vengeance Scale and the ANPS as well as information about the translation processes and factor analyses are presented in the Appendix A. The Chinese version of the 42-item BigFive short-scale will not be published.

2.2.1. Transgression-Related Interpersonal Motivations Inventory (TRIM-12)

One measure for vengefulness was the TRIM-12 (McCullough & van Oven Witvliet, 2002). This consists of 12 items and 2 scales named Avoidance Motivation (7 items) and Revenge Motivation (5 items). The response format is a 5-point Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree”.

3 This topic is also discussed in more detail in the discussion part of this paper.

4 We expected low agreeableness, high neuroticism and high ANGER to be most robustly linked to higher vengefulness. However, due to problems assessing these sub-facets, we present preliminary results in the Supplementary Material.
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