



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



Cornelia Sindermann<sup>a,\*</sup>, Ruixue Luo<sup>b</sup>, Zhiying Zhao<sup>b</sup>, Qin Li<sup>b</sup>, Mei Li<sup>c</sup>, Keith M. Kendrick<sup>b</sup>, Jaak Panksepp<sup>d,1</sup>, Christian Montag<sup>a,b,\*,\*,1</sup>

<sup>a</sup> Department of Molecular Psychology, Institute of Psychology and Education, Ulm University, Helmholtzstr. 8/1, 89081 Ulm, Germany

<sup>b</sup> Key Laboratory for NeuroInformation/School of Life Science and Technology, Center for Information in Medicine, University of Electronic Science and Technology of China, No 2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu 611731, China

<sup>c</sup> Beijing University of Civil Engineering and Architecture, Exhibition Museum Road No. 1, Xicheng District, 100044, Beijing, China

<sup>d</sup> Department of Integrative Physiology and Neuroscience, College of Veterinary Medicine, Washington State University, 1815 Ferdinand's Lane, Veterinary and Biomedical Research Building, Pullman, WA 99164-7620, USA

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## ABSTRACT

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, 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 BigFive 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.

## 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; Labree, 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.

\* Correspondence to: C. Sindermann, Department of Molecular Psychology, Institute of Psychology and Education, Ulm University, Helmholtzstr. 8/1, 89081 Ulm, Germany.

\*\* Correspondence to: C. Montag, Department of Molecular Psychology, Institute of Psychology and Education, Ulm University, Helmholtzstr. 8/1, Ulm, Germany; Key Laboratory for NeuroInformation/School of Life Science and Technology, Center for Information in Medicine, University of Electronic Science and Technology of China, No 2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu 611731, China.

E-mail addresses: [cornelia.sindermann@uni-ulm.de](mailto:cornelia.sindermann@uni-ulm.de) (C. Sindermann), [bettyruixue.uestc@outlook.com](mailto:bettyruixue.uestc@outlook.com) (R. Luo), [algost.zhao@gmail.com](mailto:algost.zhao@gmail.com) (Z. Zhao), [helenlee@uestc.edu.cn](mailto:helenlee@uestc.edu.cn) (Q. Li), [limei@bucea.edu.cn](mailto:limei@bucea.edu.cn) (M. Li), [k.kendrick.uestc@gmail.com](mailto:k.kendrick.uestc@gmail.com) (K.M. Kendrick), [christian.montag@uni-ulm.de](mailto:christian.montag@uni-ulm.de) (C. Montag).

<sup>1</sup> These authors share the senior position on this work.

### 1.2. Individual differences in the Big Five and vengeance

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

### 1.3. Individual differences in primary emotional traits and vengeance

Based on abundant neuroscientific research, Jaak Panksepp's group has attempted to monitor 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<sup>2</sup> should be strongly positively correlated with vengeance, 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 vengeance (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 vengeance, positive correlations between the negative PETs and vengeance and negative correlations between CARE and vengeance 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 vengeance 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 vengeance (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 vengeance on a dispositional level. As an example: in some cultures blood feud/revenge (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 vengeance 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 vengeance in a Chinese sample compared to a German sample (<https://geert-hofstede.com/china.html>; <https://geert-hofstede.com/germany.html>).

<sup>2</sup> All PETs are written in capital letters to not confound them with other concepts used in (personality) psychology.

Agreeable people possibly renounce personally motivated revenge seeking to maintain harmony in the society, which is in line with collectivistic 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.<sup>3</sup> Next to differences, also similarities between cultures/nations are of great interest. If in samples from different cultures, the same associations between vengeance 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 vengeance across diverse cultures.<sup>4</sup> We expected low agreeableness, high neuroticism and high ANGER to be most robustly linked to higher vengeance. 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 vengeance was the TRIM-12 (McCullough & van Oyen 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

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

<sup>4</sup> To go beyond what is already known regarding the Big Five – vengeance associations, we originally aimed to investigate these associations using narrower sub-facets of the Big Five to clarify which sub-facets (of neuroticism and agreeableness) are most strongly related to vengeance. However, due to problems assessing these sub-facets, we only present preliminary results in the Supplementary Material.

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