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The role of character traits in economic games

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ABSTRACT

Notwithstanding the fact that valuing personality descriptors from the realm of character were deliberately excluded from the Big Five model of personality, in the study of economic games (EGs; e.g., the *prisoner's dilemma*) the Big Five were used when predicting outcomes in the field of behaviors that are socially valued in terms of fairness and altruism (i.e., the moral domain). Eventually *evaluative* traits were introduced and found useful in the study of EGs, namely the HEXACO dimension honesty/humility (H/H). As an extensive list of evaluative traits, the Values In Action classification of character strengths may complement H/H when assessing character and predicting individuals' decisions in EGs. For this study, $N = 155$ participants completed the Values in Action Inventory of Strengths, a measure of the HEXACO traits, and four different EGs that involved decisions relevant to fairness and altruism. Along with H/H, individuals' positions on a dimension abstracting heart-related vs. mind-related character strengths predicted outcomes in the EGs. These results support earlier findings that evaluative traits predict decisions relevant to fairness and altruism. Furthermore, character strengths can be seen as complementing H/H when predicting behavior in the moral domain by character.

1. Introduction

Players tend to make fair and altruistic decisions in economic games like the *prisoner's dilemma* or the *dictator game*. This contradicts the notion of the *homo oeconomicus*, which posits that individuals' dominant interest is to rationally maximize their own economic benefit. It was demonstrated that deviations from strictly rational decisions are predicted by individuals' expressions of personality traits. Big Five personality traits such as neuroticism and foremost agreeableness were demonstrated to explain interindividual variance in economic game outcomes. While for example neuroticism is assumed to go along with a reduced tendency to take risks in the *prisoner's dilemma* (cf. Lönnqvist, Verkasalo, & Walkowitz, 2011), Big Five agreeableness is assumed to be linked to decisions in economic games due to high scorers' higher (vs. low scorers' lower) motivation to promote positive interpersonal relationships (see Zhao & Smillie, 2015, for an overview). While the role of the Big Five personality traits in economic games is well investigated, the introduction of honesty/humility (H/H) in the study of economic games was an important step toward predicting behavior in the *moral domain* by resorting to theoretically more relevant *evaluative* personality traits.[1] The term "moral domain" as used here is supposed to denote the field of behaviors that are socially esteemed in terms of virtue, goodness, and integrity, such as fairness and altruism. As a dimension of the HEXACO model of personality (cf. Ashton & Lee, 2001) H/H can be seen as more closely and directly related to the concepts of fairness and altruism that play a role in individuals' decisions in economic games (cf. Baumert, Schlösser, & Schmitt, 2014). Across different economic games, H/H was found to be a predictor of players' decisions (e.g., Hilbig, Thielmann, Hepp, Klein, & Zettler, 2015; Hilbig, Zettler, Leist, & Heydasch, 2013). The inclusion of H/H in the HEXACO model of personality (Ashton & Lee, 2001) was a great leap forward toward incorporating evaluative aspects in personality research. In the HEXACO model, five factors were found largely resembling the Big Five dimensions, while H/H emerged as an additional dimension abstracting the covariance between evaluative descriptors with the facets sincerity, fairness, greed-avoidance, and modesty (cf. Ashton & Lee, 2009). H/H can be seen as covering some of the very aspects of personality that were defined as character in terms of "personality evaluated" and

[1] Evaluative trait descriptors were deliberately excluded from the item pools analyzed in the course of the development of the Big Five model (cf. Almagor, Tellegen, & Waller, 1995). Studies using more inclusive and lexically more representative item samples support the notion that, beyond the Big Five, additional dimensions exist that abstract socially valued aspects of personality in terms of personality evaluated according to prevailing standards of conduct (cf. Allport, 1921; i.e., Ashton & Lee, 2001: *H/H*; Almagor et al., 1995: *positive valence* and *negative valence*; De Raad & Barelds, 2008: *virtue*, *competence*, and *hedonism*).

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distinguished from personality as temperament by early personality researchers (cf. Allport, 1921).

However, next to H/H there is a comprehensive list of evaluative traits that can help to add to and complement H/H when describing and classifying character, also in order to predict decisions in economic games and the moral domain in general. Peterson and Seligman (2004) proposed the VIA (Values in Action) classification of character strengths as positive traits that constitute the "good character". Character strengths are defined as ubiquitous, fulfilling, morally valued, trait-like, distinct and measurable individual differences (Peterson & Seligman, 2004). There are 24 character strengths that relate to six core virtues which are esteemed across cultures and historical epochs. The virtues and the related character strengths are: (1) wisdom and knowledge (includes the character strengths creativity, curiosity, open-mindedness, love of learning, perspective), (2) courage (i.e., bravery, perseverance, honesty, zest), (3) humanity (i.e., capacity to love and be loved [short: love], kindness, social intelligence), (4) justice (i.e., teamwork, fairness, leadership), (5) temperance (i.e., forgiveness, modesty, prudence, self-regulation), and (6) transcendence (i.e., appreciation of beauty and excellence, gratitude, hope, humor, spirituality). A more detailed summary of the VIA classification is given by Ruch et al. (2010). Character strengths, as assessed with the established Values in Action Inventory of Strengths (VIA-IS; Peterson, Park, & Seligman, 2005), were demonstrated to be stable across measurement points in terms of medium to high test-retest correlations in 3 to 9 months' intervals (e.g., Ruch et al., 2010).

To attain an aggregated measure of two central aspects of the VIA-IS character strengths, an established approach can be used: Peterson (2006) suggested a two-dimensional factor space that consistently results from a principal component analysis of ipsatized scores of the character strengths. This approach classifies the entire character strengths on two axes: one bipolar dimension abstracts the covariance of "*strengths of the mind* (e.g., prudence, open-mindedness) vs. *strengths of the heart* (e.g., zest, love)". The other bipolar dimension abstracts the covariance of "*strengths relating to the self*(e.g., creativity, love of learning) vs. *strengths relating to others* (e.g., teamwork, forgiveness)". This ipsative approach was preferred over a normative one as the economic games require decisions during which different strengths might be in conflict (e.g., kindness vs. open-mindedness). Hence, the decisions might be based on the relative rather than the absolute expression of the strengths.

The aim o*strengths*f the present paper is to test whether interindividual variance in economic game outcomes can be explained by individuals' expression of traits from the realm of evaluative personality description (i.e., H/H and character strengths). Like in earlier studies on the role of H/H in economic games (e.g., Hilbig et al., 2013, 2015), high expressions of H/H are assumed to go along with fairer and more altruistic decisions than low expressions of H/H. Furthermore it is expected that individuals' location on two factorial dimensions of the VIA-IS predict decisions in economic games: as factor scores increase toward the *strengths of the heart* pole (e.g., zest, love) of the first dimension and to the *strengths relating to others* pole (e.g., teamwork, forgiveness) of the second dimension, individuals are assumed to make fairer and more altruistic decisions. Accordingly, as a secondary objective of the present study, it was aimed at defining whether character can be useful to gain a more detailed picture on who is inclined toward making fair and altruistic decisions (i.e., locating decision tendencies in economic games in the space spanned by two character trait dimensions representing the trade-offs between *emotional* vs. *rational* motives on the one hand and *self-directed* vs. *other-directed* motives on the other hand). To control for the effect of non-evaluative traits, all HEXACO dimensions other than H/H will be included when predicting the decisions in the economic games from H/H and the character strengths factors. As the VIA character strengths are reasoned to cover a broader spectrum of evaluative traits than H/H, they are expected to explain incremental variance in the economic game decisions beyond H/H.

2. Method

2.1. Participants

Participants were recruited via university mailing lists, psychology magazine websites, social platforms, and leaflets. In the advertisement, participants were offered a personal feedback on their individual expressions of character strengths and HEXACO personality traits. The sample included $N = 155$ participants (33 males, age: $M = 24.95$ years, $SD = 7.61$). The majority of the participants were Swiss (75.5%) or German (20.0%). More than half (55.5%) were currently students at a university or a university of applied sciences, 26.5% held a diploma allowing them to attend a university or a university of applied sciences, 14.2% completed a degree at a university or university of applied sciences, 1.9% completed vocational training, and 1.9% completed secondary education.

2.2. Instruments

The *Values in Action Inventory of Strengths* (VIA-IS; Peterson et al., 2005; German adaptation by Ruch et al., 2010) is a 240-item questionnaire for the assessment of the 24 character strengths (10 items per strengths) covered by the VIA classification (Peterson & Seligman, 2004). It uses a 5-point Likert-style scale ranging from 1 ("very much unlike me") to 5 ("very much like me"). A sample item is "In a group, I try to make sure everyone feels included." (leadership). Several studies demonstrated the good psychometric properties of the German version of the VIA-IS (e.g., Proyer, Gander, Wellenzohn, & Ruch, 2015). Internal consistencies in the present sample ranged from $\alpha = 0.70$ (teamwork) to 0.89 (creativity and spirituality) with a median of 0.76.

The *HEXACO-60* (Ashton & Lee, 2009) is a 60-item questionnaire for the assessment of the six dimensions of the HEXACO model of personality (10 items per dimension) employing a 5-point Likert-style scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The six dimensions are: H/H (e.g., "I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed."), emotionality, extraversion, agreeableness, conscientiousness, and openness to experience. Internal consistencies in the present sample ranged from $\alpha = 0.69$ (agreeableness) to 0.83 (extraversion).

2.2.1. Economic games

On the basis of their payoff-rules, different economic games can be allocated loosely to one of two categories (cf. Zhao & Smillie, 2015). Firstly, there are social dilemmas (characterized by a trade-off between more directly available attainment of outcomes relevant to the self-interest on the one hand and less securely available outcomes relevant to the collective interests on the other hand). Typically, individuals have the opportunity to choose either a "selfish" outcome that is a safe bet or a cooperative option that involves a leap of faith when taking a chance that the game partners might not simultaneously cooperate. That is, mutual cooperation leads to better overall outcomes while featuring a personal reward that is dependent from the other players' decisions (e.g., the *prisoner's dilemma*; cf. Dawes, 1980). The selfish outcome is typically designed as smaller but more warranted than the cooperative collective outcome that would result from all players expecting and performing mutual cooperation. As a second category, there are bargaining games, in which the players can allocate a share of a given amount of goods (e.g., money) to their game partners in a one-way allocation. Typically, in this category the payoff does not depend on the game partners' simultaneous contributions, although players may have the chance to refuse an offer in special variants (i.e., the *ultimatum bargaining game*) or may reciprocate or retaliate against previous offers when taking turns with a game partner in iterative rounds of games.