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Abstract

The present study aimed to broaden the investigation of personality traits and donation behaviour beyond the Five-Factor Model (FFM) framework. A sample of 506 participants completed the Supernumerary Personality Inventory (Paunonen, 2002), reported both their frequency of charitable giving and, given the option to donate potential lottery winnings to a charitable cause, the amount that they would donate. Religiosity was moderately positively correlated with charitable frequency, while integrity was weakly positively correlated with donation amount. Manipulativeness and egotism were weakly negatively correlated with donation amount. Overall, the results show limited evidence for the relevance of Supernumerary Personality Inventory personality traits in prosocial behaviour. Suggestions for future research are discussed.

Keywords: Supernumerary personality inventory; personality; donation; religiosity; prosocial

1. Introduction

Prosocial behaviour can have a meaningful role in improving people's lives or responding to times of crisis, especially when a large number of individuals act collectively. For example, the American Red Cross, a not-for-profit that relies heavily on public generosity, opened almost 1,400 evacuation shelters, served approximately 68 million meals, and provided emergency assistance to over four million people during Hurricane Katrina (American Red Cross, 2016). More recently, CanadaHelps (2020) has raised over two million dollars from private donors to support Canadian efforts (both healthcare and community support) in the fight against COVID-19 (i.e., coronavirus). While Canadians give more than \$14 billion to charitable organizations each year (according to tax records) donations are also dropping across all age categories, and donors aged 50 and over account for 74 per cent of donations (Rideau Hall Foundation, 2019). Understanding what propels people to give is critical to maintaining charitable organizations and mitigating the causes they support.

Research has identified demographic variables (e.g., Lee & Chang, 2007; Rajan et al., 2009), situational factors (e.g., Hsu et al., 2005; Kashif et al., 2013), psychological and external motivations (e.g., Konrath & Handy, 2018) in the prediction of charitable behaviour. Less studied has been which personality traits best predict donation behaviours and those that have done so largely focus on personality traits subsumed under the "Big Five" or Five-Factor model (FFM) of personality (e.g., Bekkers, 2006, Hill, 2016; Oda et al., 2014). The purpose of the present study is to understand better, how personality traits outside of the FFM framework (Paunonen, 2002) might be useful to predict charitable giving. Given the ability of marketing firms to identify and target based on personality traits (Sandy, Gosling, & Durant, 2013), such

information has great practical information for charitable organizations. This research specifically investigates the Supernumerary Personality Inventory (SPI; Paunonen, 2002), a scale designed to measure personality traits “beyond” or independent of those within the Big Five. How the SPI personality traits correlate with monetary charitable donation behaviour will add to the understanding of personality and donation behaviours.

1.1 Personality and Donations

Existing literature in personality dimensions and charitable behavior has identified relationships between the Big Five and generosity. For instance, extraversion, openness, and agreeableness are weakly-to-moderately positively correlated with altruism towards family, friends, and strangers (Oda et al. 2014). Conscientiousness positively correlated only with altruism towards family members. Neuroticism was not significantly correlated with altruism towards any target. Interestingly, when it comes to donation to political causes, Ha et al. (2013) found that conscientiousness and openness were significant positive predictors, while agreeableness was a negative predictor.

The relationship between temperament and personality and organ donation advocacy has also been examined. Schmidt and colleagues (2003) found that organ donation advocates tended to score low in harm avoidance, average in novelty-seeking, persistence, reward dependence, and self-transcendence, and high in cooperativeness, self-direction, and self-transcendence. Similarly, Hill (2016) found that organ donation attitudes were significantly and positively correlated with agreeableness and altruism, while no significant correlations were found with conscientiousness, extraversion, neuroticism, or openness. Moreover, agreeableness significantly predicted intention to register as an organ donor, a relationship mediated by the indirect effect of altruism. Overall, personality is modestly related to these types of prosocial behaviours. This is

consistent with the findings of Bekkers (2006) who found that agreeableness was related to blood donation, empathic concern was related to charitable giving, and prosocial value orientation was related to post-mortem organ donation, but overall none of the tested personality traits consistently correlated with types of prosocial behaviour. Despite the modest nature of the evidence of personality-prosocial behaviour relationships, Bekkers (2006) warns against interpreting this evidence as personality being irrelevant. Bekkers (2006) argued that other variables may mediate the effects of personality and that personality may have nonlinear effects on prosocial behaviour. Thus, the existing literature supports the notion that more research is needed to fully understand the role of personality traits in predicting prosocial behaviour.

From a behavioral genetic perspective, Hur et al. (2011) investigated the genetic and environmental contributions of the dimension of miserliness. Miserliness, defined as the desire to save money, is a trait in contrast to altruistic traits that would promote donation behaviour. Miserliness positively correlated with conscientiousness and did not correlate significantly with the other Big Five personality traits and men and women did not differ significantly on miserliness scale scores. In addition, there was a small and significant positive correlation between miserliness and age, suggesting that older people may be more stringent in spending money. The univariate genetic models tested estimated that 28% of individual differences in miserliness were attributed to genetic influences, while 72% are attributed to unique environmental factors; family environmental effects were found to be negligible (Hur et al., 2011).

1.2 Supernumerary Personality Inventory

Despite the traditional view that the Big Five model of personality is a comprehensive model of personality, there is overwhelming evidence that this is not the case (e.g., Ashton et al.,

2000; Paunonen & Jackson, 2000). For example, Saucier and Goldberg (1998) reviewed the personality literature and found 74 dimensions that seemed to represent comprehensive coverage of the personality domain, but once statistical overlap was considered, only one cluster seemed outside of the realm of the Big Five. Paunonen and Jackson (2000) reanalyzed Saucier and Goldberg's (1998) data with a different criterion (a more conservative extension analysis loading cut-off) and found that there are up to 10 dimensions that are ill-covered by the Big Five (i.e., religiosity, manipulateness, integrity, seductiveness, thriftiness, conventionality, femininity, egotism, humorousness, and risk-taking). Based on these findings, Paunonen (2002) developed the Supernumerary Personality Inventory (SPI) to measure the traits that fall beyond the purview of the Big Five (see Table 1 for list of traits and definitions).

Central to the present study is the relationship between the SPI traits and prosocial behaviour. Lee et al. (2005) reported that seductiveness, manipulateness, and egotism negatively correlated with the HEXACO dimension of honesty-humility. Conversely, integrity had a strong positive correlation with honesty-humility (Lee et al., 2005). Thus, some of the SPI traits may not be conducive to altruistic behaviours, such as charitable giving, while others, such as thriftiness, integrity, femininity, and religiosity may predict donation behaviours.

Research has investigated the relationship between the SPI traits and malevolent behaviour. O'Neill and Hastings (2011) found that humorousness, manipulateness, risk-taking, and seductiveness were positively associated with interpersonal and organizational deviance, while integrity negatively correlated with interpersonal and organizational deviance. Religiosity, however, negatively correlated with organizational deviance. Hong et al. (2012) investigated the relationship between SPI traits and materialism and unethical behaviour. They found that seductiveness and manipulateness were positively correlated with the extent to which one's life

is centred on the acquisition of material things (centrality), acquisition as the pursuit of happiness (happiness), and possession-defined success, and unethical business decisions. Thriftiness negatively correlated with centrality and success, while integrity negatively correlated with happiness, possession-defined success, and unethical business decision making. Religiosity negatively correlated with happiness and unethical business decision making. Based on this evidence, it is clear that some of the SPI traits (i.e., seductiveness, manipulativeness) have positive correlations with unethical behaviour and materialistic outlook, while others negatively correlate with these outcomes. This pattern of results, as well as the research concerning the SPI traits in relation to honesty-humility, provide some insight into which of the SPI traits may be associated with charitable behaviour.

1.3 Present study

The present study is the first to study personality traits that lie outside traditional models of personality, as measured by the SPI, in the context of donation behaviour. As reviewed above, there seems to be a dearth of literature investigating prosocial aspects of the SPI traits as the vast majority of work done so far has been on socially malevolent outcomes associated with the SPI dimensions. Therefore, the present study will contribute both to our understanding of personality within the context of prosocial behaviour, as well as help fill a gap within the SPI literature.

We hypothesize that integrity, femininity, and religiosity will positively correlate with donation behaviour. This prediction is based on previous research that indicate a high overlap between integrity and honesty-humility ($r = .77$; Lee et al., 2005), a trait that is not only prosocial in nature, but also encompasses such facets as greed-avoidance (Ashton & Lee, 2007). Given that research has found that women are more likely to donate than are men (e.g., Rajan et al., 2009), it follows that trait femininity would also positively correlate with donation behaviour.

As for religiosity, previous research has found that religious individuals tend to donate more than non-religious individuals (Rajan et al., 2009), again suggesting a positive relationship.

Furthermore, we hypothesize that seductiveness, manipulateness, thriftiness, egotism, and risk-taking will negatively correlate with donation behaviour because these traits are positively associated with socially malevolent outcomes, including materialism, unethical business decision-making (Hong et al., 2012), workplace and interpersonal deviance (O'Neill & Hastings, 2011), and negatively associated with honesty-humility (Lee et al., 2005). As for thriftiness, a trait characterized by frugality (Hong & Paunonen, 2009), we hypothesize that it will negatively correlate with prosocial behaviours that come at a monetary cost (such as donating to charity). Egotism, on the other hand, reflects a sense of superiority and self-interest (Hong & Paunonen, 2009), thus we hypothesize that individuals high in egotism may put more value on keeping money for themselves, rather than using it to help others and thus donate less.

2. Method

2.1 Participants

Participants were 506 (222 men, 247 women, 4 identified as other and 33 missing gender information) first year undergraduate students at a large North American university who were recruited to complete an online study conducted via the Qualtrics platform. The average age was 18.95 years ($SD = 1.82$) and ranged from 17 to 40. Individuals received partial course credit for participating in the study.

2.2 Measures

2.2.1 Supernumerary Personality Inventory (SPI). The SPI (Paunonen, 2002) measures 10 personality dimensions (conventionality, seductiveness, manipulateness, thriftiness, humorousness, integrity, femininity, religiosity, risk-taking, and egotism) each

comprising of 15 items. Although limited research is available using the SPI, Paunonen (2002) reports adequate reliability, with coefficient alpha values ranging from .67 for conventionality to .95 for religiosity. Paunonen (2002) also reported that the response key for the SPI items could range from true/false to a 5-point Likert format. In the present study, a 3-point response key was adopted with 1 = *do not agree*, 2 = *sometimes*, and 3 = *agree*.

2.2.2 Donation Behavior. Participants completed two donation items, both of which were similar to items used in previous research (Freeman et al., 2009; Winterich et al., 2013; Winterich et al., 2012). Participants were informed that as an extra thank you for their time, they would be entered into a lottery for one \$50 gift card and that the lottery winner would have the opportunity to donate all, some, or none of the \$50 winnings to a charitable organization. Specifically, following Freeman et al. (2009), individuals responded to the item, “Should you win the lottery draw, would you be willing to donate?” on a 6-point scale, from no donation, through \$10 increments to all of the \$50 with higher numbers indicating larger donations. Second, participants reported how often they typically donate to charitable organizations on a 7-point scale with responses ranging from 1 = *never* to 7 = *very often*. These two donation questions were used as criterion variables in the study.

2.3 Procedure

Participants first read a letter of information and indicated their consent to consent to proceed. They were asked to read a brief online news article about the national government encouraging charitable donations for an international refugee crisis that was adapted (dates changed to align with the study period) from a real news article about a refugee crisis in Rohingya. Following, participants completed the gift card donation question, the SPI items, the individual frequency of donation item, and demographic items. Participants were provided with

debriefing information that included a link to the actual news article. The study had received institutional ethics approval and all data was collected using a secure on-line platform. A \$50 donation to the charitable organization was made on behalf of the research study.

3. Results

Listed in Table 2 are the descriptive statistics and coefficient alpha values for the SPI scales. In line with the values reported by Paunonen (2002), the lowest alpha value was for the conventionality scale and the highest value was for the religiosity scale. Each of the SPI scales and the two donation items were analyzed for demographic information. Age was found to have a significant negative correlation with manipulateness ($r = -.12, p < .01$, two-tailed). All other correlations with age were non-significant. With respect to gender, men and women did not differ significantly on donation frequency, but women ($M = 3.99, SD = 1.85$) were more likely than men ($M = 3.56, SD = 2.00$) to donate some of their winnings ($t = -2.44, p < .05$). With respect to the SPI scales, men scored significantly higher than women on the conventionality ($M_{men} = 33.97, SD = 3.87, M_{women} = 32.01, SD = 3.51, t = 5.74, p < .001$), seductiveness ($M_{men} = 29.99, SD = 5.01, M_{women} = 28.10, SD = 5.56, t = 3.85, p < .001$), manipulateness ($M_{men} = 32.14, SD = 4.08, M_{women} = 30.36, SD = 4.20, t = 4.64, p < .001$), humorousness ($M_{men} = 34.68, SD = 5.01, M_{women} = 31.60, SD = 5.25, t = 6.49, p < .001$), risk-taking ($M_{men} = 29.94, SD = 5.28, M_{women} = 26.27, SD = 4.66, t = 7.98, p < .001$), and egotism ($M_{men} = 33.86, SD = 4.87, M_{women} = 32.08, SD = 4.44, t = 4.11, p < .001$) scales. Women scored significantly higher than men on the integrity ($M_{women} = 36.95, SD = 4.39, M_{men} = 34.76, SD = 5.33, t = 4.86, p < .001$) and femininity ($M_{women} = 33.33, SD = 4.09, M_{men} = 26.50, SD = 4.39, t = 17.34, p < .001$) scales.

Listed in Table 3 are the correlations between the SPI scales and the two donation items (donation frequency and donation amount). Of note, although the correlation between the

donation frequency and the donation amount was significantly positive, the value was only .14 ($p < .01$). Only the religiosity scale correlated positively and significantly with donation frequency. In contrast, when asked how much of their winnings that they would donate (donation amount), significant negative correlations were found with the manipulateness and egotism scales and a significant positive correlation was found with the integrity scale. A test of non-linear relationships between personality and the two donation variables demonstrated no significant change in the magnitude of the correlations.

To predict the two donation item responses, direct entry multiple regression models were computed with age, gender, and SPI scales entered as predictors (Table 4). For donation frequency, the model was significant ($F = 3.84, p < .001$), accounting for 9.2% of the variance, with an adjusted R-square of 7%. The only significant unique predictors were being female ($t = 2.22, p = .027$), femininity ($t = -2.65, p = .008$) and religiosity ($t = 5.08, p < .001$) SPI scales. In predicting donation amount, the overall regression model was significant ($F = 3.33, p < .001$), accounting for 8.1% of the variance, with an adjusted R-square of 5.7%. Two unique predictors significantly predicted donation amount, integrity ($t = 2.83, p = .005$) and interestingly, humorousness ($t = 2.78, p = .006$).

4. Discussion

The present study investigated the relationship between personality traits purported to lie outside the FFM and donation behaviour. Specifically, we investigated the SPI traits in relation to donation frequency and donation amount. We found that, overall, SPI traits do not correlate strongly with these two particular donation variables. Although there was a significant positive correlation between integrity and intended donation amount, the correlation was weak and integrity did not correlate significantly with frequency of donation. As well, although religiosity

had a significant positive correlation with donation frequency, it did not correlate significantly with donation amount. Manipulativeness and egotism, predicted to correlate negatively with donation behaviour, had only modest significant negative correlations with donation amount and were unrelated to donation frequency. No support was found for our hypotheses regarding femininity, seductiveness, thriftiness, and risk-taking, as none of these traits significantly correlated with either of the donation variables. Femininity and religiosity were significant unique predictors of donation frequency, and integrity and humourousness were significant unique predictors of donation amount.

Religiosity significantly correlated with donation frequency, perhaps as a result of giving that takes place in conjunction with religion (e.g., collection plates at church services), and in-line with past literature (Stavrova & Siegers, 2014). For instance, Canadians who are more religiously active (i.e. those who attend religious meetings or services at least once a week) are more inclined to donate and, on average, make larger donations (Stats Canada; <https://www150.statcan.gc.ca/n1/pub/11-008-x/2012001/article/11637-eng.htm#a6>). Therefore, individuals who are giving regularly might be less impacted by situational charitable appeals as they already contribute frequently.

Giving directly in response to the appeal in the study, however, was positively related to integrity and negatively related to egotism and manipulativeness. Speaking to integrity, this finding is consistent with research which highlights the importance of morality in charitable giving (Aquino & Reed, 2002; Aquino et al., 2011; Reed & Aquino, 2003; Reed et al., 2007; 2016; Winterich et al., 2013). In particular, higher moral identity (the mental representation of one's moral character held internally as a cognitive schema and expressed to others externally

through one's actions; Aquino & Reed, 2002) positively predicts prosocial behaviour such as giving.

Concerning egotism, the negative relationship might also be positioned in literature on public and private charitable giving (Bénabou & Tirole, 2003; Soetevent, 2005; White & Peloza, 2009) wherein individuals will give more in publicly observable donation contexts. One explanation for such behaviour is self-interest, such that an individual can benefit from giving via impression management (Kristofferson et al., 2014) and thus will be more inclined to give when others can see the action. Indeed, some research has questioned whether giving is ever motivated by anything other than self-interest (Batson, 1987; Neuberg et al., 1997; Gintis et al., 2003; Piliavin & Charng, 1990). If the context of the charitable request in this study had been publicly observable and presented an opportunity for self-interested impression management, it might be that the relationship between giving and egotism would reverse. As such, egotism may be one personality trait that could moderate the effect of public observability on giving; essentially amplifying the effect for those higher in egotism and attenuating it for those lower in egotism. Drawing again on the literature examining charitable giving and self-interest, the same reasoning might hold for manipulateness (i.e., a heightened concern for one's own purposes), in that participants higher in manipulateness might be more inclined to consider 'how will this situation benefit me' and therefore be inclined to give less when there is little self-interest reward to do so.

Of interest was the positive prediction of donation amount by the SPI scale, humorousness. This finding might reflect the evolutionary relationship between humor and social relationships. For example, Curry and Dunbar (2013) demonstrated that a shared appreciation of stimulus, such as humorous material, increases altruistic behaviour. Possibly those with higher

humorousness scores could relate to the situation described in the study stimulus and therefore were willing to donate a larger amount of money.

4.1 Limitations and Future Directions

Our study had a number of limitations that should be considered when interpreting the results. First, the sample may not be representative of the general population as it was limited to only undergraduate students at a North American university. It is likely that individuals from different areas and different stages of life may differ in their donation behaviour and personalities beyond what is presented in our study. For example, age had a weak negative correlation with manipulateness and was not significantly correlated the other variables. A probable reason for this was that our sample (an undergraduate sample with little age variability) was not suitable for age comparisons, and therefore the present study cannot be used as a basis for meaningful conclusions regarding age and charitable giving.

A further limitation was that the coefficient alphas in the present study for conventionality (.58), manipulateness (.67), and thriftiness (.61) were lower than what has been reported and therefore conclusions regarding these traits should be made with caution. It is unclear what the reason was for the low reliabilities. Of interest, the conventionality scale has also shown lower reliability estimates in previous research (e.g., Hong et al., 2012; Lee et al., 2005). Possibly younger samples of individuals have difficulty with the content of the items in the scale, such as, "Certain occupations are more suited to men and others to women". How different generational groups respond to these items is an area which requires further research as the scale may require refinement with younger samples.

A final limitation is that the present study was cross-sectional and even though we assessed real donation behaviour, the donation amount item refers to a hypothetical situation

(i.e., the donation would only occur if the participant won the lottery). Future research should explore this line of inquiry using a more representative sample and longitudinal methods which assess behaviour, either through artificially created paradigms with tangible outcomes (e.g., economic games) or tracking donation behaviour (e.g., diary studies). The results demonstrate the critical importance of the charitable giving measure employed when designing and interpreting research in this domain. In our study, the two donation variables (frequency and donation amount) were only modestly correlated, and they did not share any SPI correlates. Future psychometric research in this field might investigate similarities and differences among donation variables and underlying relationships, while research focused on the phenomenon of charitable giving (as opposed to methodology and psychometrics) should be mindful of the likely differences in motivation underscoring individual responses to distinct measures.

4.2 Conclusion

This study was the first to examine how the SPI traits, which lie outside of the conventional Big Five model of personality, relate with donation behaviour. Women who scored higher on the femininity and religiosity scales were more likely to donate regularly to charity. Individuals who scored higher in integrity and humorousness were more likely to donate a larger sum of money. Although the study had some limitations, the results add to our understanding of how personality and donation behaviour are associated.

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