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## Creativity, personality, and hoarding behavior



Dianne M. Hezel\*, Jill M. Hooley

Department of Psychology, Harvard University, 33 Kirkland Street, Cambridge, MA 02138, USA

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## ABSTRACT

Compulsive hoarding is a debilitating illness that is characterized by excessive collection of and failure to discard items, irrespective of their uselessness or hazardousness. Anecdotal evidence suggests that individuals who hoard may be more creative than individuals without hoarding behavior; however, this hypothesis has never been tested empirically. In the present study, we examined the relationship between hoarding symptoms and performance on a series of creativity measures. We also explored the extent to which hoarding symptoms were associated with factors such as personality, impulsivity, distress tolerance, and attitudes about money and the environment. Our findings revealed no significant associations between hoarding behavior and any measure of creativity. Hoarding behavior was also unrelated to attitudes about money or concern about the environment. However, consistent with previous research, hoarding tendencies were correlated with higher levels of neuroticism and impulsivity, as well as with lower levels of conscientiousness and distress tolerance. Implications of these findings are discussed.

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## 1. Introduction

Compulsive hoarding is a debilitating illness that is characterized by excessively collecting and failing to discard items, irrespective of their uselessness or hazardousness. Until recently, hoarding was considered a subtype of obsessive-compulsive disorder (OCD), but is now categorized as its own disorder (“hoarding disorder”) in the DSM-5 (APA, 2013). With a lifetime prevalence of 2–5% (Samuels et al., 2008; Iervolino et al., 2009; Mueller et al., 2009), pathological hoarding behavior often results in cluttered or uninhabitable living spaces, as well as significant distress or impairment to individuals with this disorder (Frost and Hartl, 1996).

Cognitive-behavioral models of hoarding suggest that individuals who suffer from this disorder possess information-processing deficits that adversely affect their attention, decision-making, and memory (Frost and Hartl, 1996). However, Tolin et al. (2007) observed that many of the patients they have treated are “highly intelligent, clever and creative people” (p. 34) and hypothesize that these attributes may, in fact, contribute to their hoarding tendencies. In what they refer to as an example of elaborative processing, the authors explain that individuals who hoard see many uses for a single object, but that this “creativity exceeds [their] physical capacity to carry out the plans...” (p. 34). Indeed, it is possible that people who hoard are more creative than those who do not hoard.

However, to our knowledge, this hypothesis has never been tested empirically.

In the current study, we examined the relationship between hoarding symptoms and three distinct measures of creativity. We hypothesized that hoarding symptoms would be positively associated with performance on a divergent thinking creativity task that specifically asked about different uses for specific objects. However, we expected that this association would be confined to this one domain of creativity because it is only this aspect that seems directly relevant to the acquisition of or reluctance to discard items. Accordingly, we did not expect to see associations between hoarding tendencies and the two other measures of creativity, which assess creative achievement and creative personality attributes. If this study does identify a link between hoarding behavior and increased creativity, it may have clinical implications for people who suffer from pathological hoarding. Identifying a creative aspect of their personality may help these individuals to see themselves in a more positive light, thus potentially alleviating some of their emotional distress.

Although creativity measures were our primary outcome of interest, we also examined the association between hoarding behavior and a number of other variables in an attempt to better understand factors that may contribute to the development or maintenance of this disorder. Prior research has identified increased levels of impulsivity (Timpano et al., 2013) and neuroticism and lower levels of conscientiousness (LaSalle-Ricci et al., 2006) and distress tolerance (Timpano et al., 2009) in hoarding samples relative to people with no hoarding behavior. We therefore included measures of these variables in an attempt to replicate these findings

\* Corresponding author. Tel.: +1 617 945 0317.

E-mail address: [dhezel@fas.harvard.edu](mailto:dhezel@fas.harvard.edu) (D.M. Hezel).

in a different population. Indeed, it is possible that individuals who hoard have a difficult time resisting the impulse to collect items and tolerating the distress they feel when getting rid of objects they deem valuable or important. Moreover, other studies have failed to find evidence for differences between people who do and do not hoard in attitudes about the environment (Frost et al., 1995) or in material deprivation (Frost and Gross, 1993). In the present study, we included measures that have not been previously used in this population to further investigate the association of these variables with hoarding tendencies. Given that the Environmental Conscientiousness questionnaire used by Frost et al. (1995) was developed almost two decades ago, we thought it would be worthwhile to create an updated Environmental Concern Scale that incorporates questions about new environmentally-friendly technology such as electric cars. Likewise, whereas Frost and Gross (1993) included a single question about material deprivation in their study, we wanted to include a more comprehensive measure of early financial hardship that focused on deprivation during childhood. It is possible that both increased concern for saving the environment and a history of financial hardship can contribute to a hoarding sample's reluctance to waste (and hence discard) items. Therefore, in the present study, we predicted that hoarding behaviors would be associated with higher levels of both of these variables.

## 2. Methods

### 2.1. Participants

Participants were community residents, aged 17 years or older, living in the metropolitan Boston area. They were recruited after responding to an online posting on a community study pool message board that is associated with the local university. Both students and adults in the community had access to the posting (the university posts flyers on information boards and on employment sites every week in order to recruit participants both in and outside of the university community). There were no specific inclusion or exclusion criteria; rather, the advertisement stated that both individuals who had difficulty discarding objects (or who considered themselves to be “packrats”) and individuals who had no difficulty discarding items, including people who disliked clutter (or who considered themselves to be “minimalists”) were welcome to participate.<sup>1</sup> The sample consisted of 80 participants (46 women) with a mean age of 26.4 (S.D.=11.3). Race and ethnicity data were not collected. Participants were paid \$10 for their participation.

### 2.2. Materials and procedures

We obtained approval for the present study from the Harvard Institutional Review Board. Participants aged 18 and over signed a consent form. In the case of three participants who were aged 17, participants signed an assent form, and a signed consent form was also obtained from the legal guardian. All participants then completed the following measures. The entire study took approximately 45 min.

The Saving Inventory-Revised (SI-R) is a 23-item self-report measure that assesses hoarding behavior with three subscales: a person's tendency to (1) accumulate possessions, (2) experience difficulty discarding items, and (3) have a cluttered living space (Frost et al., 2004). Individuals are asked to indicate their answers to a number of questions (e.g., “How difficult do you find the task of throwing things away?”) on a Likert scale ranging from zero to four; high scores indicate higher levels of hoarding behavior. The scale has good reported internal consistency ( $r=0.94$ ) and test–retest reliability ( $r=0.86$ ), and good convergent ( $r=0.79$ ) and discriminant validity (Frost et al., 2004). The internal consistency in our sample was excellent ( $\alpha=0.96$ ). The SI-R effectively distinguishes individuals with hoarding disorder from individuals without the disorder with a clinical cutoff score of 41 (Frost et al., 2012).

The Saving Cognitions Inventory-Revised (SCI) is a self-report questionnaire that measures the beliefs and attitudes about possessions that are often associated with hoarding behavior (Steketee et al., 2003). Individuals are asked to indicate on a Likert scale of one to seven the extent to which they agree with 24 different statements that assess four factors: emotional attachment to possessions, memory

concerns, responsibility towards possessions, and need for control over one's belongings (e.g., “losing this possession is like losing a friend”). The SCI has excellent internal consistency ( $r=0.96$ ) and good convergent and discriminant validity (Steketee et al., 2003). The internal consistency in our sample was excellent ( $\alpha=0.95$ ).

The Creative Achievement Questionnaire (CAQ) is a self-report measure that assesses how accomplished individuals are in 10 different domains of creativity (visual arts, dance, music, etc.; Carson et al., 2005). Carson et al. (2005) have reported that the scale has strong internal consistency ( $\alpha=0.92$ ) and good test–retest reliability ( $r=0.81$ ). The CAQ is significantly correlated with other measures of creative achievement and uncorrelated with IQ, resulting in adequate convergent and divergent validity, respectively (Carson et al., 2005). In our sample the internal consistency of the CAQ was low ( $\alpha=0.47$ ). What this means is that participants who noted accomplishments in one domain (e.g., culinary arts) did not necessarily have achievements in other domains as well (e.g., creative writing).

The Creative Personality Scale (CPS) is a self-report measure for which individuals are required to select adjectives (e.g., clever, conservative, honest, etc.) that describe their personality (Gough, 1979). Points are subtracted for less creative personality traits such as “cautious” and “commonplace” and are added for creative personality traits such as “humorous” and “resourceful.” The CPS is a reliable and moderately valid measure that accurately predicts creativity (Gough, 1979). In the present sample, the internal consistency of this measure was  $\alpha=0.62$ .

The Divergent Thinking Task is a validated measure adapted from Torrance (1968). Participants are given 3 min to list as many answers as they can generate in response to each of three scenarios. In the first, individuals are asked to list different uses for a brick. In the second item, they are asked to list all of the consequences of being born with six fingers on each hand, and in the third to list as many white foods as they can think of. Answers were scored on three different domains: fluency (the number of answers listed), originality (the uniqueness of the answer relative to other participants' answers), and flexibility (the frequency with which individuals switched between different categories of answers; Carson et al., 2003). Individual scores in each of these domains are z-scored and added to obtain an overall Divergent Thinking Task (DTT) score for each participant. To maintain consistency in scoring, the first author and a trained research assistant together calculated DTT scores for all participants. There was acceptable internal consistency among the three DTT items in our sample ( $\alpha=0.78$ ).

The NEO Five-Factor Inventory – Short Form (NEO; Costa and McCrae, 1989; McCrae and Costa, 2004) is a well-validated scale that consists of 60 statements designed to capture five major dimensions of personality (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness). The measure has high test–retest reliability ( $r=0.86$ – $0.90$ ; Robins et al., 2001) and acceptable internal consistency ranging from 0.68 to 0.86 (Costa and McCrae, 1992). In our sample, internal consistency ranged from acceptable to excellent (all  $\alpha > 0.77$ ).

The Distress Tolerance Scale (DTS) is a 15-item self-report questionnaire which measures the degree to which individuals believe the experience of negative affect is unbearable (Simons and Gaher, 2005). Participants rate the extent to which they agree with statements about four factors of distress tolerance: (1) ability to tolerate distress, (2) appraisal of distress, (3) absorption by negative emotions, and (4) efforts to regulate distress. These four subscales are calculated by averaging item scores and the total DTS score is computed by averaging the four subscale scores. High scores indicate a higher ability to tolerate emotional distress. The DTS has good internal consistency ( $\alpha=0.89$ ), good test–retest reliability ( $r=0.61$ ), and good convergent, criterion, and discriminant validity (Simons and Gaher, 2005). The internal consistency in our sample was excellent ( $\alpha=0.90$ ).

The Barratt Impulsiveness Scale (BIS) Version 11 (Patton et al., 1995) is a 30-item self-report measure designed to assess general impulsiveness while taking into account six first-order factors (attention, motor, self-control, cognitive complexity, perseverance, and cognitive instability) and three second-order factors (attentional impulsiveness, motor impulsiveness, and non-planning impulsiveness). The BIS has good internal consistency ( $\alpha=0.83$ ) and test–retest reliability ( $r=0.83$ ) and shows good convergent and discriminant validity (Stanford et al., 2009). In our sample, the BIS demonstrated good internal consistency ( $\alpha=0.84$ ).

The Frugality Scale is an 8-item self-report questionnaire designed to measure people's attitudes towards saving and spending money (Lastovicka et al., 1999). Individuals are asked to indicate on a Likert scale the extent to which they agree or disagree with statements about money and saving (e.g., “I believe in being careful in how I spend my money” and “There are many things that are normally thrown away that are still quite useful”). The measure has good internal consistency ( $\alpha=0.87$ ) and reasonable convergent and discriminant validity (Lastovicka et al., 1999). The measure had an acceptable internal consistency in the current study ( $\alpha=0.76$ ).

In the present study, we created two additional questionnaires in order to investigate other factors that may be associated with hoarding behavior. The Environmental Concern Scale is a 20-item self-report questionnaire designed to assess a person's concerns about and actions towards protecting the environment. Individuals are asked to indicate on a five-point Likert scale the extent to which they agree with statements such as “People should make recycling a priority” and “People exaggerate the danger of global warming.” High scores indicate increased concern about the environment. In the current sample, the internal reliability of the scale was good ( $\alpha=0.80$ ). Finally, the Early Financial Hardship Scale is a 15-item

<sup>1</sup> Although we understand that some researchers and clinicians object to the term “packrat,” our participants responded very positively to this term and were generally comfortable describing themselves in this way.

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