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Shorter communication

Cognitive aspects of nonclinical obsessive–compulsive hoarding ☆

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Abstract

Research on the cognitive variables associated with obsessive–compulsive hoarding is scarce. In this study, we investigated cognitive variables that may contribute to the maintenance and possibly etiology of hoarding. College students who characterized themselves as either "packrats" (nonclinical hoarders; $n = 21$) or not (control participants; $n = 20$) completed questionnaires assessing hoarding behavior and beliefs about hoarding, and completed a task requiring them to categorize diverse objects and trinkets of minimal value into groups. The results revealed that nonclinical hoarders, relative to control participants, rated the categorization task as significantly more stressful and difficult. Relative to control participants, hoarders took longer to complete the task and sorted objects into more categories. These findings suggest that underinclusiveness and indecisiveness, characteristic of clinical hoarders, are evident in nonclinical hoarders as well.
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Keywords: Obsessive–compulsive disorder; Hoarding; Cognitive biases; Underinclusiveness; Indecisiveness

Introduction

Hoarding has been the least studied among the obsessive–compulsive disorder (OCD) subtypes, despite its often being impairing and potentially life-threatening (Frost, Steketee, Williams, & Warren, 2000). OCD hoarding is characterized by (1) the acquisition and retention of many possessions having limited or no value; (2) living quarters so cluttered as to prevent their normal use; and (3) marked distress or impairment resulting from hoarding (Frost & Hartl, 1996). The homes of hoarders can become so littered with useless junk that they become sanitation and fire hazards. In severe cases, public health departments evict the hoarder and bulldoze the home.

Unlike most people with OCD, many hoarders lack insight into their problem (Steketee & Frost, 2003). Many resist acknowledging that their hoarding is unreasonable or that it has an adverse effect on their lives. They are often reluctant to seeking treatment on their own, and they commonly cross the paths of clinicians

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only when relatives insist on their getting help. As Greenberg (1987) remarked, compulsive hoarding is a problem "better known to public health complaints departments than to community mental health clinics" (p. 416).

When hoarders do receive treatment, their gains are typically modest, at best. Hoarders administered serotonin reuptake inhibitors (SRIs) had only a partial response (Winsberg, Cassic, & Koran, 1999). Cognitive-behavior therapy (CBT) has not fared much better in the treatment of hoarding (Mataix-Cols, Marks, Greist, Kobak, & Baer, 2002). In one single-case experimental design intervention, clinicians made some progress, but only after 17 months of intensive behavior therapy (Hartl & Frost, 1999). This disappointing success rate differs markedly from behavioral or pharmacologic treatment of typical OCD cases, such as those involving contamination obsessions and washing compulsions, or doubting obsessions and checking compulsions (Foa et al., 2005). For example, Abramowitz and his colleagues found that only 31% of hoarders exhibited clinically significant improvement, whereas 70% of OCD patients with contamination obsessions did so (Abramowitz, Franklin, Schwartz, & Furr, 2003). Because exposure and response prevention, with or without medication, produces only modest gains, researchers have begun to develop new behavioral treatments specifically targeting hoarding symptoms (Steketee, Frost, Wincze, Greene, & Douglass, 2000).

Renewed attempts to devise treatments for this hitherto treatment-refractory condition may be more likely to succeed if clinicians understand the underlying psychopathology of hoarding. Frost and Hartl (1996) noted that hoarders seem to exhibit a specific cognitive abnormality they termed *underinclusiveness*. When attempting to group objects into categories, hoarders seem to underscore the uniqueness of each object, making it difficult for them to categorize. The upshot is that they create countless, fine-grained categories, some perhaps containing only a single object.

Hoarders also seem indecisive, finding it especially difficult to decide whether something is worth keeping (Frost & Shows, 1993). This, in turn, may arise because they tend to imbue many objects with exaggerated emotional value (Frost, Hartl, Christian, & Williams, 1995). Hoarders may retain apparently useless items because they seek to avoid the emotional turmoil of trying to decide the item's value and whether it warrants keeping.

The aforementioned observations suggest that hoarding may arise from specific cognitive and emotional problems. One cause of OCD hoarding may be the propensity to group items into too many categories, and to imbue these items with exaggerated emotional significance. Addressing these issues, Wincze, Steketee, and Frost (in press) compared a group of clinically severe hoarders recruited from the community with a group of OCD patients without hoarding problems, and a group of healthy control participants on several categorization tasks. Relative to the other OCD patients, clinical hoarders took longer to sort objects into categories and tended to use more categories. And relative to healthy participants, the hoarders were more anxious, used more categories, and took more time to sort objects. However, these effects emerged only for objects having "personal relevance" (i.e., similar to those these individuals usually hoard). Taken together, research suggests that categorization abnormalities may be confined to objects possessing emotional relevance.

If these cognitive and affective biases figure in the etiology of OCD hoarding, they may be detectable in nonclinical participants whose hoarding need not meet diagnostic criteria. Nonclinical hoarders are sometimes called "packrats"—individuals who save many items of dubious value, but whose level of hoarding need not impair their lives or result in unsanitary or dangerous living conditions. Many OCD researchers who study hoarding have assumed that hoarding by packrats lies on a continuum with hoarding by those who qualify for OCD. Although severe hoarding may constitute a discrete subtype different in kind from other forms of OCD (McKay et al., 2004), key features of hoarding do vary on a continuous dimension and thus may shade into normality. Indeed, many of the studies on hoarding have involved college students (e.g., Frost & Shows, 1993) or self-identified "packrats or chronic savers" recruited via advertisements (e.g., Frost & Gross, 1993, Study 2). As Steketee and Frost (2003) observed in their review of the literature, the correlates of nonclinical and clinical hoarding are similar (e.g., association with other OCD symptoms). Accordingly, we may gain insights about hoarding in OCD by studying nonclinical packrats.

The purpose of this study was to determine whether hypothesized cognitive characteristics associated with OCD hoarding occur among self-identified "packrats." To investigate these issues, we asked nonclinical hoarders and nonhoarding control participants to perform a categorization task requiring them to group

diverse objects of minimal value into categories. If the cognitive biases deemed integral to OCD hoarding appear prodromally, then the nonclinical hoarders should take longer than control participants to perform the categorization task, and should group the objects into more categories than should the control participants. Relative to control participants, the nonclinical hoarders should experience the task as emotionally more stressful. Finally, if nonclinical hoarders are prone to imbue objects of minimal value with emotional significance, then hoarders should take more objects home with them when permitted to do so than should control participants.

Method

Participants

We recruited participants from among students at a private university in the northeastern United States by placing advertisements about the study on campus, and by notifying students in two houses (dormitories) via e-mail. Notices mentioned that we were seeking two groups of individuals: "packrats" who have great difficulty throwing things away, regardless of the utility of the object, and people who experienced no difficulty throwing out things that were no longer useful. Compensation was entry into a lottery in which the prize was $50.

The nonclinical hoarding group comprised 21 students (11 female) whose mean age was 20.1 years old (SD = 1.2), and the control group comprised 20 students (15 female) whose mean age was 21.2 years old (SD = 2.8). The groups did not differ significantly in either mean age, $t(39) = 0.73$, $p = .47$, or in sex distribution, $\chi^2(1, N = 41) = 2.26$, $p = .13$).

To validate the participants' self-identification as a "packrat" or not, we asked them to complete the Savings Inventory-Revised (SI-R; Frost, Steketee, & Grisham, 2004), a questionnaire tapping tendencies to accumulate possessions and experience difficulty throwing them out (e.g., "How strong is your urge to save something you know you may never use?"). Participants also completed the Saving Cognitions Inventory—Revised (SCI-R; Steketee, Frost, & Kyrios, 2003), a questionnaire measuring how strongly respondents endorse beliefs such as "Losing this possession is like losing a friend" and "If this possession may be of use to someone else, I am responsible for saving it for them."

In summary, assignment to group was based on the student's self-identification as a packrat or not, and we administered the SC-R and the SCI-R to confirm that the packrat group did, indeed, score higher on these measures than did the nonpackrat group. We had participants complete the SC-R and SCI-R after they finished the categorization task because we did not want questionnaire completion to affect their behavior on the task. We did not conduct formal psychiatric diagnostic interviews, and nor did we apply any rule-out criteria.

Procedure

Each participant was tested individually in a quiet room. After providing written informed consent and completing a demographic form asking for the person's age, year in college, and gender, the participant completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The purpose of the PANAS administration was to gauge the emotional reactions of the participants before and after the task.

The experimenter then presented the participant with 20 objects of no or minimal monetary value, and asked him or her to categorize them into as many or as few as categories as needed. The objects were: a pencil, an upbeat fortune from a fortune cookie, a cocktail umbrella, a small package of moist cleansing wipes, a button with a written slogan, two 37-cent stamps, a pen with the university's name on it, a kiwi-flavored gummy candy, a pair of interlocking metal puzzle pieces, a stack of Post-Its, an old *Newsweek* magazine, a brightly colored "stretch" frog, a small Hershey's chocolate bar, a travel-sized bar of soap, a box of black-and-white film, a rubber ball, an individually wrapped fortune cookie, a birthday candle, a smiley-face sticker, and a die.

The experimenter told participants to take as much time as necessary to complete the task, and she emphasized that there is no "right" way to complete it. When participants indicated that they had finished categorizing the objects, they completed the PANAS for the second time. They also rated how difficult, stressful, and enjoyable they had found the experience on 0- (*not at all*) to 10-point (*extremely*) scales. Finally, for exploratory purposes only, the experimenter asked participants to describe the criteria they had used to categorize the items.

After the participant had finished describing his or her criteria for categorizing the objects, the experimenter then told participants that they were free to take any of the items from the task, and to "take as many or as few" as they liked. The experimenter then stepped out of the room, ostensibly to get the final questionnaires and debriefing form from another room, but actually to reduce any discomfort the participant might have about pocketing items from the task.

The experimenter returned 2 min later and administered the SI-R and the SCI-R. Upon completing these questionnaires, the participant received and read a debriefing form. The experimenter answered any questions, and then thanked and dismissed the participant.

Results

We used one-tailed, independent t-tests to test hypotheses, and we computed effect size r for each of them.

Analyses of the SI-R and SCI-R data were consistent with participants' self-identification as either a packrat or a nonpackrat. On the SI-R, the packrat (nonclinical hoarder) group scored significantly higher than the control group: $M = 37.6$, SD $= 13.2$ versus $M = 23.2$, SD $= 10.1$, $t(39) = 3.91$, $p = .001$, $r = .53$. A similar significant difference emerged on the SCI-R: $M = 80.0$, SD $= 25.3$ versus $M = 23.2$, SD $= 10.1$, $t(33.9) = 2.48$, $p = .009$, $r = .39$. These data indicate that the self-identified packrats scored much higher than did the nonpackrats on self-reported hoarding behavior (SI-R) and on beliefs about hoarding (SCI-R). The average packrat, however, still scored lower on the SI-R than did the average OCD hoarder whose mean score is 53.7 (SD $= 14.9$; Frost et al., 2004). Clinical OCD norms for the revised version of the Saving Cognitions Inventory are forthcoming, but not yet available (Personal communication, R.O. Frost; August 14, 2006).

If nonclinical hoarders are characterized by underinclusion and indecision when classifying objects, then they should rate the task more difficult and more stressful than should control participants. The difficulty ratings were in accord with prediction: $M = 2.90$, SD $= 2.19$ versus $M = 1.35$, SD $= 1.27$, $t(39) = 2.77$, $p = .005$, $r = .41$, as were the stressfulness ratings, $M = 2.00$, SD $= 2.14$ versus $M = 0.75$, SD $= 0.97$, $t(28.1) = 2.43$, $p = .01$, $r = .42$. Relative to control participants, nonclinical hoarders rated the task as less enjoyable, but this difference was nonsignificant: $M = 5.38$, SD $= 2.40$ versus $M = 6.25$, SD $= 2.40$, $t(39) = -1.16$, $p = .13$, $r = .18$.

Inconsistent with prediction, relative to control participants, nonclinical hoarders did not take more objects home with them: $M = 1.52$, SD $= 1.50$ versus $M = 1.20$, SD $= 1.54$, $t(39) = .62$, $p = .25$, $r = .11$.

The underinclusion hypothesis implies that nonclinical hoarders ought to make more categories while sorting objects into groups than should control participants. The results confirmed this prediction: $M = 5.62$, SD $= 1.40$ versus $M = 4.65$, SD $= 1.69$, $t(39) = 2.00$, $p = .03$, $r = .30$. Further consistent with prediction, the nonclinical hoarders took nearly twice as long (in seconds) to complete the task as did the control participants: $M = 169$, SD $= 132$ versus $M = 88$, SD $= 40$, $t(23.8) = 2.66$, $p = .007$, $r = .48$.

Collapsing the two groups, we found that the time taken to complete the categorization task was significantly correlated with the number of categories, $r = .31$, $p = .024$, self-reported difficulty, $r = .45$, $p = .002$, and self-reported stressfulness, $r = .48$, $p = .001$.

Finally, we computed pre-post change scores for each of the 20 PANAS scales, and then tested for between-group differences. Packrats and nonpackrats did not differ on any of these measures (p's $> .05$).

Discussion

Consistent with our hypothesis, nonclinical hoarders found the categorization task more difficult than did the control participants. This finding accords with data showing that patients with OCD hoarding problems exhibit "underinclusion" and indecision when organizing their possessions (Frost & Hartl, 1996). The

nonclinical hoarders also found the task more stressful than did the control participants. Categorizing objects, it seems, is both challenging and psychologically taxing for nonclinical hoarders.

The nonclinical hoarders categorized the objects into more groups than did the nonhoarders, consistent with the underinclusion hypothesis which holds that hoarders tend to see each object as unique in some way, making it difficult to classify with other objects (Frost & Hartl, 1996).

Relative to control participants, the nonclinical hoarders took nearly twice as long to complete the task. Apparently, indecisiveness about how best to categorize objects delayed task completion in the nonclinical hoarding group, and this finding resembles the marked indecisiveness of OCD hoarders. The correlation between task duration and the number of categories, though significant, was not as strong as the correlation between task duration and either self-reported difficulty or stressfulness. Difficulty and stressfulness of categorization may partly explain why clutter accumulates so readily in the homes of clinical hoarders. Getting rid of clutter requires one to discriminate between valuable and discardable items, and difficulty categorizing objects may decrease the likelihood that hoarders will do the necessary cleaning.

Contrary to our expectation, nonclinical hoarders did not experience more negative affect on the PANAS during the task than did the control group. One possible reason is that not all negative affect items on the PANAS may have been sensitive to the stress nonclinical hoarders otherwise reported. For example, PANAS items *afraid*, *ashamed*, *guilty*, *hostile*, and *scared* are unlikely to have captured the quality of their experience.

Although intense distress may be confined to those with clinically severe hoarding, it seems more likely that distress would be provoked more by the disposal of objects, especially personal ones, than by their categorization. Relative to control participants, the nonclinical hoarders did not take more of the objects with them at the end of the study, perhaps because they were self-conscious about engaging in "packrat"-like behavior in the laboratory. Another possibility is that deciding not to acquire a new item differs from deciding to discard an item that one already owns. It may have been easier for nonclinical hoarders to forego a new acquisition, especially if they suspected that the experimenter might still be able to use the objects. Had the experimenter told participants that she was planning to throw out the objects, perhaps the nonclinical hoarders might have opted to take more of them than they did.

As for clinical implications, our study further affirms that interventions for OCD hoarders should target the cognitive characteristics that distinguish this group from OCD washers, checkers, and so forth. Problems with categorization, underinclusion, and overendowing objects with emotional significance are characteristics that seemingly lie at the heart of pathological hoarding.

Our study has several limitations. The number of participants was modest. Logistical obstacles that prevented us from administering questionnaires to hundreds of potential participants in mass screening sessions prompted our somewhat unorthodox method of recruitment: using advertisements to recruit self-identified packrats and nonpackrats, and then administering SI-R an SCI-R to validate participant self-characterizations. This method is not flawless; some self-described nonpackrats had higher scores on the SI-R than did some self-described packrats. Despite this drawback, several predicted effects emerged. Also, we did not conduct formal psychiatric interviews, and nor did we administer questionnaires tapping either depressive or other OCD symptoms.

Several issues remain unaddressed by our study. First, how would hoarders diagnosed with OCD respond in this task? To the extent that the cognitive and behavioral aspects of hoarding lie on a continuum, we suspect that those with OCD would find the task at least as challenging and difficult as our nonclinical hoarders did. Second, how would results differ if the objects to be categorized belonged to participants? We suspect that objects already imbued with personal emotional significance, despite their familiarity to the person, might be even more difficult to sort than the standardized set of objects in this study (Wincze et al., in press).

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